C-1

Formulation of Some Traditional Herbal Drugs used in the Treatment of Gynecological Disorders

Shweta Shriwas and Sumeet Dwivedi

shwetashriwas18@gmail.com

Abstract:

Gynecological disorders *v.i.z.* menstrual disorders, vaginitis, uterine bleeding, vaginal inflammation, itching etc. are now-a-days very common disorder almost in every woman. Available allopathic medicines are costly, have side effects and also due to social custom, tribal women of India use herbs for the treatment of gynecological disorders. The present paper deals with formulation of herbal tablet containing aqueous extract of herbs viz.,, *Achyranthes aspera, Tachyspermum ammi, Plumeria pudica, Cissus quandragularis, Nigella sativa, Ipomea mauritiana*, etc. which are commonly used to treat gynecological disorders. Different batches HF1, HF2, HF 3, HF4 and HF5 were formulated and were evaluated. In this study weight various, friability, hardness, disintegration time, dissolution study and drug content was evaluated for all the formulated batches. The results showed that HF5 (DC: 99.17%) was found to be effective as compared with other formulation.

Keywords: Gynecological disorders, Herbal tablet, Formulation, Evaluation

C-2

Herbal Remedies among Tribal and Local Village Farmers of Madhya Pradesh, India used in the Treatment of Gynecological Disorders

Sumeet Dwivedi, Shweta Shriwasand and Raghvendra Dubey

College of Pharmacy, Dr. APJ Abdul Kalam University, Indore, (M.P.),India
herbal0914@rediffmail.com

Abstract:

Madhya Pradesh, a Central State of India is rich in natural heritage due to tribal impact. The wide diversity of natural resources of the state along with the tribal population focuses in the use of herbs for the treatment of various disease and disorders. Gynecological disorders viz., menstrual disorders, vaginitis, uterine bleeding, vaginal inflammation, itching etc. are now-a-days very common disorder almost in every woman. The tribe of the region uses traditional herbs for the treatment of these disorders. Available allopathic medicines are costly, have side effects and also due to social custom, tribes of the region use herbs for the treatment of gynecological disorders. The present paper enumerates fifty herbs viz., *Achyranthes aspera, Tachyspermum ammi, Plumeria pudica, Cissus quandragularis, Nigella sativa, Ipomea mauritiana*, etc. which are commonly used to treat gynecological disorders. The local name, dose, duration, disease condition treatment along with method of preparation has been presented in present investigation.

Keywords: Herbs, Traditional, Phytotherapy, Madhya Pradesh

C-3

Formulation and Evaluation of Poly Herbal Gel, Ointment and Cream and Antimicrobial Screening of *Abutilon indicum,Aristolochea bracteolate* and*Andrographis paniculata* by using Agar well diffusion method

R. Ramasubramania rajaand M.Sekar

Narayana Pharmacy College, Nellore, Andhra Pradesh, India
rsmr_raj@yahoo.co.in

Abstract:

The plant *Abutilon indicum,*(Malvaceae), *Aristolochea bracteolate*,(Aristolochiaceae) *Andrographis paniculata* (Acanthaceae) was screened for its Macroscopic, Microscopic, Physiochemical parameter like Ash values, extractive vales, crude fibre content, foreign organic matter etc, Florescence analysis(short UV, long UV day light), General and micro chemical analysis for crude powder and Plant cell inclusions. Each dried powder of the medicinal plants leaf material (16gram) was subjected to soxhlet extraction with ethanol for continuous hot extraction for 6 hours. The extracts were concentrated under reduced pressure to obtain the extracts solid residues. The percentage value of the extracts was 29% w/w, 19.618% w/w, 27% w/w respectively. The poly herbal formulation like poly herbal ointment, poly herbal gel, and poly herbal cream was prepared 1%, 2% and 5% respectively. The prepared formulations were evaluated for physical appearance, pH, colour, rancidity, acidity and stable studies.Antimicrobial activity were performed by using agar well diffusion method, the pathogenic bacteria was highly inhibited by ethanolic extract of *Andrographis paniculata* and poly herbal ointment dose depending manner. The pathogenic fungi were highly inhibited by ethanolic extract of *Abutilon indicum and* poly herbal creamdepending upon the dose.

Keywords:*Abutilon indicum, Aristolochea bracteolate, Andrographis paniculata*, **Poly herbal formulation, Stability studies, Agar well diffusion**

C-4

Pharmacognostic Evaluation of *Phoenix dactylifera* on Diabetic Macular Edema through Anti VEGF therapy

Toffa Dasmohapatra and Debasish Pradhan

University Department of Pharmceutical Sciences, Utkal University, Vanivihar,Bhubaneswar-751004,Odisha
tofa03@rediffmail.com

Abstract:

Diabetic macular edema is a vision-limiting manifestation of Diabetic retinopathy in which swelling of the central retina causes loss of central vision. The microvascular complications associated with it are thought to be caused by chronic hyperglycemia, which results in damage and dysfunction of capillary endothelial cells located in the retina as well as the other metabolic abnormalities common in diabetes, such as diabetic dyslipidemia,hypertension and vascular inflammation. Over time,ongoing microvascular damage triggers a well defined succession of pathogenic events in the retina, including upregulation of vascular endothelial growth factor (VEGF) that causes loss of vision and eventually blindness. Objective of this study to examine the effect of epicatechin phenolic compound obtained from *Phoenix dactylifera* with antiproliferative properties against VEGF in Diabetic Macular Edema and its mechanism of action by *In vitro MTT assay.* Phenolic compound was extracted from *Phoenix dactylifera* using ethyl acetate solvent and antiproliferative activities of seed extract was measured by the MTT assay using diabetic retinal capillary endothelial cells. As an antiproliferative agent, soluble free extracts of *Phoenix dactylifera* inhibits the expression of Vascular endothelial growth factor which is responsible for diabetic retinal capillary angiogenesis and neovascularisation. The present study demonstrated that *Phoenix dactylifera* ,a common fruit has beneficial effects in experimental studies of diseases that are characterised by increased angiogenesis and inflammatory reactions. It appears to be a useful adjunct therapy to possibly inhibit the progression of retinopathy, sight threatening complication faced by diabetic patients.

Keywords:*Phoenix dactylifera*, **Macular edema, VEGF, Angiogenesis, Antiproliferative**

C-5

Analgesic Activity of Aqueous Extract of *Carissa carandus* Root Bark

Sanjeeva Kumar A, Raveendra Reddy Jand Rama Mohan Gupta

Raghavendra Institute of Pharmaceutical Education and Research, Krishnam Reddy Palli cross, Chiyyedu, Anantapur-515721, Andhra Pradesh, India
Pulla Reddy Institute of Pharmacy, Domadugu Village, Jinnaram Mandal, Medak District- 502313, Telangana, India
avvarisanjeev@gmail.com

Abstract:

Carissa carandus is one of the plants which are widely available in and around of our living area. Literature review revealed that this plant was having a claim for management of pain, but was not studied scientifically. In this current work, the root bark was collected, shade dried and made into powder. This was subjected to extraction by cold maceration using water as solvent. The extract thus obtained was screened for presence of various phytoconstituents by preliminary phytochemical screening and analgesic activity was evaluated by hot plate and tail immersion method at a dose of 200 and 400 mg/kg body weight, in which the parameter of latency period was measured and calculated for the percentage inhibition of pain. The analgesic activity of water extract of *Carissa carandus*root bark was statistically significant at its higher test dose ($p<0.01$) and the action was comparable with standard drug employed. Present study supports the folklore claim of *Carissa carandus*root bark of analgesic activity.

Keywords:*Carissa carandus,* **Phytochemicals, Maceration, Hot plate, Tail immersion**

C-6

Development and Evaluation of Lycopene Loaded Chitosan Nanoparticles

Anju Dhiman and Divtrannum

Department of Pharmaceutical Sciences, Maharshi Dayanand University, Rohtak-124001, Haryana, India.
ad_mdu@rediffmail.com

Abstract:

Nanotechnology has immense significance in the field of medicine, agriculture, business, public health sector due to wide applicability of the nano products.Biodegradable and biocompatible polymers are good candidates for nanoparticulate drug delivery system as they are expected

to be adsorbed in an intact form in the gastrointestinal tract. The objective of the study was to investigate the influence of some precarious variables like, concentration of chitosan, concentration of sodium tripolyphosphate (STPP) and stirring time on physico-chemical characteristics of lycopene loaded chitosan nanoparticles. Eight batches of lycopene loaded chitosan nanoparticles were formulated using different concentrations of chitosan (100-200 mg), STPP (50-100 mg) by varying stirring speed in the range of 10-20 minutes using ionic gelation method. The optimized nanoparticulate formulation was characterized for various parameters like morphology study, particle size distribution studies, differential scanning calorimetry, entrapment efficiency and *in vitro* drug release studies. The optimized batch of lycopene loaded chitosan nanoaprticles containing 150 mg of chitosan, 75 mg of STPP, 20 mg of drug lycopene and with 15 minutes of stirring time showed entrapment efficiency of 89.4%. The percentage drug release of lycopene loaded chitosan nanoparticles and pure lycopene at the end of 6 h were found to be 83.5 % and 79.6% respectively. Lycopene loaded chitosan nanoparticles may show a great promise for the development of novel drug delivery system by enhancing the rate of lycopene release from chitosan nanoparticles.

Keywords: Chitosan, Ionic gelation method,Lycopene, Nanoparticles, Sodium tripolyphosphate (STPP)

C-7

Phytochemical Screening and*In-vitro* Anti-Inflammatory Evaluation of Leaf Extracts of*Pothos scandens* Linn.

Seema S.Nair and Joyamma Varkey

Govt. Medical College, Thiruvananthapuram, Kerala-695011
Seema.s.nair @gmail.com

Abstract:

Pothos scandens Linn. is an important medicinal plant used by Kanikkar tribes. It is commonly known as Paraioutan in Kanikkartribals of Agasthiarmalai Biosphere Reserve, Western Ghats, and Tamil Nadu. The preliminary phytochemical screening of the leaf powder showed the presence of rich variety of phytoconstituents namely alkaloids, tannins, flavanoids, phenols, carbohydrates, xanthoproteins, coumarins etc. The elemental analysis of leaf powder showed the presence of calcium, magnesium, phosphate, sulphate, iron and chloride. The defatted leaf powder was subjected to extraction by methanol and chloroform. *In-vitro* anti-inflammatory activity of the extracts was carried out by the human red blood cell (HRBC) membrane stabilization method and Protein denaturation inhibition assay using Aspirin as standard. The results showed that both methanol and chloroform extracts inhibited heat induced denaturation of serum protein in a concentration dependent manner, of which methanol extract showed better activity than chloroform extract and is comparable with the standard drug aspirin. HRBC membrane stabilisation study showed that methanol extract inhibited haemolysis in a concentration dependent manner than chloroform extract. The results obtained in this study indicated that methanol extract of *Pothos scandens* leaves can be a potential source of anti-inflammatory agents.

Keywords:*Pothos scandens*, **anti-inflammatory, HRBC membrane stability, protein denaturaion**

C-8

Hepatoprotective Effect of Traditionally Used Plant*Ehretialaevis*Against Paracetamol Induced Hepatotoxicity in Rats

Hasandeep Singh and Balbir Singh

Department of Pharmaceutical Sciences, Guru Nanak Dev University, Amritsar-143001, Punjab, India
hasanpharma.rsh@gndu.ac.in

Abstract:

Ehretialaevis(family Boraginaceae) has been traditionally used in the treatment of liver disorders. Therefore, the present study was designed to investigate the role of *E. laevis* in liver damage and to provide the pharmacological justification. Pharmacognosticparameters of leaves of *E. laevis*(powder microscopy, scanning electron microscopy and physico-chemical parameters) were evaluated. Crude extracts of *E. laevis* were prepared successively using petroleum ether, chloroform and methanol in a soxhlet apparatus and finally the marc was boiled with water. In the present investigation, PCM (3 g/kg) caused a significant spike in the SGOT, SGPT, alkaline phosphate, bilirubin and triglyceride levels. The chloroform and methanol extracts were administered(200, 400 and 800 mg/kg *p.o.*) for 7 days after 24 hrs of PCM treatment. Silymarin (50 mg/kg) was used as standard drug.Methanol extract at a dose of 800 mg/kg showed higher protection as assessed by decrease in the serum enzyme levelsalongwith decrease in oxidative stress and alsoalleviated all histopathological changesin a significant manner which was comparable to silymarin treatment. Therefore, from the findings of the present study, the methanol extract of *E. laevis* possess significant hepatoprotective effect due to the presence of various polyphenols as revealed by

HPLC.However, further studies are required to consolidate our findings and to isolate the main active constituent responsible for hepatoprotection along with mechanism of action of *E. laevis*in hepatotoxicity.

Keywords: *Ehretialaevis*, **Hepatotoxicity, Histopathology, HPLC**

C-9

Phytochemical Characterization of Natural Essence from *Mangifera indica* Linn. and *Vitiveria zizaniodes* Linn.

Patil Vikas, Wagh Kalpesh and Patil Prakash

Institute of Pharmaceutical Education Boradi Tal. Shirpur Dist. Dhule 425428
vikas312@rediffmail.com

Abstract:

In the present study, attempt has made to separate terpens from crude drugs (*Mangifera indica* Linn). Determination of chemical constituent in percentage by GC and GCMS analysis was done, higher content of α-terpineol (3.26%),β-selinene (3%) found in Totapuri variety other constituents also estimated. Crude drug *Vitiveria zizanoides* (Linn) collected from different district region of Maharashtra vetiver oil separated by distillation method. The physical parameters of oils are determined according to ISI specifications. Percentages of constituents are estimated observed that Bharatpur variety having high % of free alcohol as vetiverol (78.10%).

The odorous volatile principles of plant and animal sources are known as volatile oils, as they evaporate when exposed to air at ordinary temperature, they are also called as Ethereal oils. They represent essence or active constituents of plant, hence they are also known as Essential oils chemically they are derived from terpenes and their oxygenated compounds and they are made up of isoprene units (C_5H_8).

Keywords: *Mangifera indica, Vitiveria zizanoides,***Bharatpur,characterization, essence**

C-10

Evaluation of Gastric Anti-ulcer activity of *Alstonia scholaris* Hydro-alcoholic leaf extract in Rodents

Tulsidas Nimbekar and Damodar Goupale

Bajiraoji Karanjekar College of Pharmacy, Sakoli, Bhandara, Maharashtra-441802,
India
tnimbekar@gmail.com

Abstract:

The antiulcer activity of a hydro-alcoholic extract prepared from the leaves of *Alstonia scholaris*Wall ex A. DC (Apocynaceae) was evaluated in rodents against, the acute stress, ethanol-HCL and Indomethacin models to induce experimental gastric ulcers. The extract of *Alstonia scholaris*at two doses, viz., 200 and 400 mg /kg were evaluated in acute stress, ethanol-HCL and aspirin-induced gastric ulcer models using ranitidine, sucralfate and omeprazole respectively as standards. *A. scholaris* hydro-alcoholic extract produced significant antiulcer protection in the acute stress, ethanol-acid and Indomethacin models at 400 mg /kg body weight. Extract shows 71.63% ulcer inhibition when compared with standard Ranitidine (50mg/kg) which produced 73.84% ulcer inhibition. In ethanol-HCL induced model it produced 83.64% ulcer inhibition compared with standard sucralfate (100mg/kg) which produced 76.47% ulcer inhibition.. In stress induced model it produced 94.56% ulcer inhibition compared with standard omeprazole (20mg/kg) which produced 97.47% ulcer inhibition. This result suggested that the *A. scholaris* extract increased resistance to necrotizing agents, providing a direct, protective effect on the gastric mucosa.

Keywords: Anti-ulcer activity, Ethanol-acid, Indomethacin, Acute stress, *Alstonia scholaris*

C-11

Evaluation Anti cancer activity of Methanolic extract of Medicinal plant on different Cancer cell lines

Baburao Bhukya and Narsimhareddy Yellu

University College of Pharmaceutical Sciences, Kakatiya University, Warangal, Telangana-506009, India
babupharma79@gmail.com

Abstract:

To study the anticancer activity of Leucas cephalotes using various human cancer cell cultures, in vitro by MTT assay. Human cervical carcinoma (HeLa) cells, human breast cancer (MCF-7) cells and human neuroblastoma (IMR-32) cells were maintained in a 5% CO_2 incubator at 37°C. Different concentrations of extract of Leucas cephalotes in serum free

culture medium were freshly prepared and used for anticancer activity by MTT assay. Among the plant extract have revealed that greater percentage inhibition in all types of cancer cells in a dose dependent manner by MTT assay. The IC_{50} values of L. cephalotes extract were found to be 45.64, 46.81 and 47.27 µg/mL against MCF-7, HeLa and IMR-32 respectively. The results showed that the extracts have significantly increased in all the cell cultures in a dose dependent manner.

Keywords: MTT assay,Cell viability,*Leucas cephalote*

C-12

Versatile and Synergistic Potential of Eugenol: A Review

Surendra Singh Rathore, Dr. Kalpesh Gaur and Dr. Ashok Dashora

Geetanjali Institute of Pharmacy (Geetanjali University), Udaipur (Raj.), pin: 313002
Rathoresurendra298@gmail.com

Abstract:

Eugenol (1-allyl-4-hydroxy-3-methoxybenzene) is the phenolic component of essential oil and the main constituent of Eugenia caryophyllata, Ocimmum gratissimum and several others medicinal plant. In view of its non- mutagenic and non-carcinogenic properties, eugenol is generally regarded as safe by the Food and Agricultural Organization of the United Nations. The Food and Agriculture Organization (FAO) and World Health Organization (WHO) have allowed an acceptable daily intake of eugenol of 2.5 mg/kg body weight for humans.

The phenolic group confers the antioxidant property of it. It is partially soluble in water and its solubility increases with organic solvents. The colour of the compound ranges from clear to pale yellow. Eugenol absorbed via small intestine when administered orally and rapidly distributed in all organ when administered intraperitoneally. Eugenol is extracted from several aromatic plants. Beside the Eugenia caryophyllata, it is also isolated from Myristica fragrans, Cinnamomum tamala, Zygium aromaticum, Ocimum basilicum, Ocimum grattisimum, Ocimum tenuiflorum, Pimenta racemosa etc. However, the principal source is clove oil which contains 45–90% eugenol of its constituent. Eugenol has been recently shown to be effective for antimicrobials and treatment of different life threatening diseases including sepsis, leishmaniasis, and cancer. However overall, activity of eugenol is not discussed elsewhere. In this review, we discuss the current understanding of the mechanisms involved the antioxidant, antimicrobial, anticancer and anti-inflammatory potential of eugenol.

Keywords: Eugenol,Antioxidant, Antimicrobials, Anticancer, Anti-inflammatory potential

C-13

Study Of Phytochemical And Anti-Inflammatory Potential On Methanolic Leaf Extract Of *Ipomoea pes-tigridis* (Convolvulaceae) In Experimental Rat Model

R.Arul Raj, Mrs. Sameema Begum and S. Nand

Nandha College of Pharmacy, Koorapalayam Pirivu, Erode (DT), Tamil Nadu, India
jesirajawidh@gmail.com

Abstract:

Herbal medicine is the oldest forms of health care known to mankind. *Ipomoea pes-tigridis* is known as tiger foot or morning glory family (convolvulaceae) widely distributed in tropical, sub tropical and temperature region .The herb is used in the treatment of boils, pimples, sores, carbuncles, and as antidote to dog bite as folk clore claim . So the present study is foccussed to study the phytochemical screening using various leaf extracts like petroleum ether, aqueous, ethanol, methanol, chloroform, and ethyl acetate. The phytochemical screening showed the presence of various phytoconstituents like carbohydrates, protein, terpenoids, phenolic compound, glycoside, flavanoids and tannins. The Anti-inflammatory activity was carried out by carrageenan induced paw edema in rat model. In experimental model reduction at concentration of 100mg, 200mg\kg analysed by ONE WAY ANOVA followed by dennett's test which was significant at [P<0.05],[P<0.01],[P<0.001] inflammatory levels compared with standard drug Indomethacin. It was concluded that leaf extract possess a promising anti-inflammatory activity due to the presence of phytoconstitutents.

Keywords: *Ipomoea pes- tigridis*, **Phytochemical, Anti inflammatory, Indomethacin,**

C-14

Comparative antimicrobial activity of callus culture and adult plant root's extracts from *Boerhaavia diffusa* Linn.

Ajay Pal Singh and Sumitra Singh

R. K. S. D. College of Pharmacy, Kaithal, Haryana, India-136027
Department of Pharmaceutical Sciences, Guru Jambheshwar University of Science & Technology, Hisar, Haryana,

India-125001

Abstract:

*Boerhavia diffusa*Linn. (Family:Nyctaginaceae) is a plant of Ayurvedic, traditional, ethnoherbological and clinical-medicinal importance. Indigenous tribes of many countries have been reported to use different parts of the plant for food and medicine. The aim of the present study was to evaluate and compare the phytochemicals and antimicrobial activity of various solvent extracts of the callus and roots of *Boerhaavia diffusa*. MS medium supplemented with different growth regulators were used for callus induction and proliferation. Maximum callus was recorded on medium containing NAA(1ppm)+BAP(0.25ppm)+IAA(0.25ppm). Various solvents such as petroleum ether, chloroform and ethanol were used for extraction. Preliminary phytochemical study confirms the presence of alkaloids, carbohydrates, sterols, proteins, amino acids and flavonoids in the callus as well as root. Cup diffusion method was used for the determination of antimicrobial activity against following strains: *E. coli, B. subtilis, S. aureus, Bacillus cereus,Aspergillus niger* and *Candida albicans*. The antimicrobial activity of roots of plant grown naturally was comparatively higher than in vitro grown callus. It is quite possible that due to the optimum in vitro environment conditions callus accumulated lesser amount of active components in comparison to in vivo plant parts and hence shows reduced activity.

Keywords:*Boerhaavia diffusa*, **Callus,** *In vitro*, **Phytochemical, Antimicrobial**

C-15

A Review on Natural Polymer

Amrit Lal Yadav

Shri Rawatpura Sarkar Institute of Pharmacy , Kumhari (Durg), CG
amrityadav110rit@gmail.com

Abstract:

Natural polymers are basically synthesized by joining small molecules or substance into a single giant molecule by a chemical process. The small molecule which is used in synthesizing a polymer is called monomer. Natural polymers are non-toxic and inexpensive attributes readily enhance their commercial acceptability and make them potent agents in lieu of synthetic polymer. Novel polymers for drug delivery are obtained from plants, microorganisms and proteins, as well as water soluble and water insoluble biodegradable polymers. Biodegrable materials are used in agriculture, medicine packaging and other areas. Natural polymers for drug delivery are used in resource for researchers, students and industrial fields. Natural polymers are basically polysaccharides, so they are also biocompatible and without any side effect. These polymers are found in nature generally from plants and source. Polymers are studied in the fields of biophasic and macromolecular science and polymer science; which include polymer chemistry and polymer physics. Natural polymers are used for tablet, ointments, parental etc. Natural polymers are generally regarded as safe (GRAS). They are effective in low concentration. Examples are proteins and polypeptide, cellulose, starch, resins,latex,collagen.

Keywords:Natural Polymer, Biodegradable, Drug delivery

C-16

Free Radical Scavenging Activity of Compounds Isolated from *Morus alba* Leaves

Kamlendra Kumar Maurya, Vivek Kumar Gupta and Alok Pal Jain

RKDF College of Pharmacy, SRK University, Bhopal, M.P-462026, India
kamalmp1984@gmail.com

Abstract:

Morus alba (white mulberry) is a short lived, fast growing, small to medium sized tree 10-20 m tall, native to northern china. This plant has a long history of medicinal use as anti-inflammatory, antimicrobial, antidiabetic, antiulcer etc. Phytochemical investigation of leaves of *Morus alba* was carried out. Two components K and K1 were isolated from methanolic extract of *Morus alba* leaves via column chromatography and characterized by UV, FTIR, ^{1}H NMR and MS spectroscopy as Oxyresveratrol and Benzyl-D-glucopyranoside respectively. The antioxidant activity of Oxyresveratrol and Benzyl-D-glucopyranoside against DPPH radical was determined by UV-Visible spectrophotometry at 517 nm.

Keywords: *Morus alba*, **FTIR, Free radical scavenging activity**

C-17

Colouring Property of Nyctanthes arbor- tristis: As Pharmaceutical Aid

Sunita S.Shinde, Sanjeevani R. Desai, and Gorakh J. Dhumal

Tatyasaheb Kore College of Pharmacy, Warnanagar

Tal-Panhala, Dist- Kolhapur MS 416113
ssshinde.tkcp@gmail.com

Abstract:

Pharmaceutical excipients are the backbones of pharmaceutical industries. The present investigation involves extraction of the color from the Nyctanthes flowering stalk by solvent extraction method using distilled water , chloroform and Physical characterization of the coloring matter was done like determination of solubility which showed that it is soluble in distilled water. Two extract were studied to identify the presence of specific phytoconstituent in them. It was found that aqueous extract showed presence of alkaloid, glycoside, saponin, tannin, triterpenoid, phenols and chloroform extract contain only alkaloids. They had given the colouring property to the pharmaceutical formulation like paracetamol granules and suspension in different concentrations. It can be concluded from the present work that aqueous extract of Nyctanthes flowering stalk shows significantly colorant property when compared with chloroform extract. Here we established a new method and techniques to process Nyctanthes flowering stalk color to be used as pharmaceutical coloring agent.

Keywords: Nyctanthes flowers stalk, Microwave synthesizer, Pharmaceutical coloring aids

C-18

Development and Evaluation of Polyherbal Formulation for Hepatoprotective Activity

Rochana Maitra, Arghya Saha Chowdhury, Prosanta Pal and J. P. Mohanty

Department of Pharmacognosy, Himalayan Pharmacy Institute, Majhitar, Sikkim, India-737136
rochanamaitra313@gmail.com

Abstract:

This study was designed to see the effectiveness of the polyherbal formulation showing hepatoprotective activity in CCl_4-induced hepatotoxic albino rats. A polyherbal syrup formulation was prepared by mixing aqueous extracts of *Cajanus cajan, Carica papaya* and *Gymnema sylvestre*.It was then evaluated for various physicochemical parameters like physical appearance (color, odour, and taste), pH, specific gravity and stability testing. The acute toxicity study of the formulation was performed as per OECD Guideline No.421. Hepatotoxicity was induced in Wister rats by using CCl_4. After 48 hours of hepatotoxin administration blood was collected for the assay of SGOT, SGPT, bilirubin, cholesterol and glucose. The pH, specific gravity, viscosity, solid content and refractive index were found to be 4.76, 1.283, 3.9 poise, 41.6% and 1.51 respectively. The physical parameters like colour were greenish brown, odour was sweet aromatic and taste was sweet. The LD_{50} value of the formulation was found to be 1500 mg/kg and there were significant decrease in the levels of serum marker enzymes and significant increase in glucose level in hepatotoxic animals to the near normal value which were comparable to the values observed for standard drug silymarin indicating therecovery from hepato toxicity. So it can be concluded that the polyherbal formulation can be safely administered in hepatic disorder.

Keywords:*Cajanus cajan, Carica papaya, Gymnema sylvestre,***CCl_4, Hepatotoxin**

C-19

Preparation and Evaluation of Polyherbal Formulationused in the Treatment of Hypothyroidism

Preksha Sharma, Subhasis Chakraborty,Prosanta Pal and J. P. Mohanty

Department of Pharmacognosy, Himalayan Pharmacy Institute, Majhitar, Sikkim-737136, India
prekshaclovy20@gmail.com

Abstract:

The objective of the present study was to develop a polyherbal formulation which can be used in the treatment of hypothyroidism in male albino rats. The poly herbal syrup formulation was prepared by mixing extracts from different plants like *Withaniasomnifera, Juglansregia, Linumusitatissimum*and sucrose solution in a suitable ratio.It was then evaluated for various physicochemical parameters such as, pH, surface tension, total solid content, specific gravity, viscosity, refractive index and physical appearance (color, odor, and taste). The acute toxicity study of the formulation was performed as per OECD Guideline No.425. Pharmacological evaluation to enhance thyroid activity was carried out in male albino rats. After treatment with polyherbal formulation blood was collected and T_3,T_4 and TSH level were determined following standard literature. The pH, surface tension, total solid content, specific gravity, viscosity, refractive index of the formulation were found to be 5.639 (10% v/v solution), 46.38 dynes/cm, 9 % w/v, 2.05 at 25^0C, 4.96 c.p. and 2.38 respectively. After treatment with formulation there were significant increase in T_3,T_4 levels and decrease in TSH level at the end of 7 and 14 days as compared to the control group. So the prepared poly herbal formulation proved to effective in the treatment of

hypothyroidism.

Keywords:Poly herbal syrup formulation, Hypothyroidism, T_3,T_4,TSH

C-20

In-vitro evaluation of Anthelminticactivity of *Saracaasoca* (Roxb.) Wild Bark on Indian Adult Earthworm

Kolluri HarshaVardhan andMaddi Ramaiah

Department of Pharmacognosy, Hindu College of Pharmacy, Amaravathi Road,
Guntur- 522002, A.P, India
harshachowdary714@gmail.com

Abstract:

Nature has provided a complete store house of remedies to cure all alignments of mankind. Herbal medicines derived from various plants are being utilized to treat various types of diseases. The knowledge of drugs has accumulated over thousands of years as a result of man's inquisitive nature so that today we possess many effective means of ensuring health care. The present objective of proposed study was to carry out the *in-vitro* evaluation of anthelminticactivity of methanolic extract of bark of *Saraca asoca*(Roxb.) wild claimed to be used traditionally in the treatment of various ailments including helmenthiasis by using adult Indian earthworms *Pheretima posthuma*. It was observed that the methanolic extract of *S. asoca* at doses of 25 mg/ml, 50 mg/ml, 100 mg/ml concentrations, paralysis and death were shown respectively at 50.80±2.23, 38.58±2.14, 13.26±2.22and 60.25±2.12, 48.25±2.11, 37.56±2.25 min post exposure. Similarly, the standard drug Albendazole also shows paralysis and death were at 15.83±0.48 and 45.94±0.04 min. post exposure respectively. The results indicated that the earth worms are more sensitive to at 100 mg/ml concentration as compared to the reference standard Albendazole and confirmed that the extract at 100 mg/ml concentration was more effective. The preliminary phytochemical examination of selected plants suggested that they having saponins, flavonoids, tannins, alkaloids and glycosides. Therefore it is assuming that these phytoconstituents are responsible for anthelmintic activity. It is therefore worth study further to isolate the pure molecules responsible for anthelmintic activity.

Keywords: *Saraca asoca*, **Cold maceration, Methanolic extract,Anthelmintic activity**

C-21

Isolation of Phytochemicals from *Heterophragma quadriloculare*K. Schum. leaves

Satani BH, Surana VS, Mishra SH and Shah SA

Maliba Pharmacy College, Gopal Vidyanagar, Bardoli, Gujarat-394350, India

Abstract:

Heterophragma is a genus of Bignoneace family, *Heterophragma quadriloculare* K. Schum. (HQ) and *Heterophragma adenophyllum* Wall. (HA) are species of this genus. In our study we have selected leaves of HQ for identification and isolation of phytochemicals. In present work unsaponifiable matter of petroleum ether extract of leaves was subjected to preperative TLC for separation of compounds present. TLC was performed using toluene: ethylacetate (9:2) as solvent system and silica gel GF_{254} as stationary phase on 20 x 20 cm glass plates. Separation of compounds was monitored using anisaldehyde sulphuric acid as a spraying reagent. Intense spots observed at R_f value of 0.44 and 0.80 were scraped, and extracted separately with diethylether. Filtrate was dried at room temperature and named as UPE1 and UPE2 accordingly. Both collected fractions were further processed on preparative TLC for purification of individual phytoconstituent. HQL1 and HQL2 were isolated from fraction UPE1 and UPE2 respectively. Compounds are isolated from antidiabetic fraction of the plant material while during comparison of TLC for petroleum ether extract of HQ and HA, similarity was observed in pattern of phytoconstituents. *Heterophragma adenophyllum*Wall. is used in traditional medicine as hypotensive. This promoted us to evaluate effect of HQL1 and HQL2 on diabetes and its cardio vascular complications and the same experiment is under process.

Keywords:*Heterophragma quadriloculare,***Phytochemical, Traditional medicine**

C-22

Isolation and Characterization of Anticancer molecule, Niazirin from *Moringaolifera*L.

Praveen T.K and VengalraoPachava

Department of Pharmacology, JSS College of Pharmacy(off campus, JSS University, Mysore) Ootacamund, Tamilnadu, India
praveentk7812@gmail.com

Abstract:

In the current study bioassay guided fractionation of the leaves of *Moringaoleifera*L. was carried out to isolate a

nitrile glycoside, Niazirin. The structure of the molecule was characterized by IR, ^{1}H and ^{13}C NMR, LC-MS data.In the *in vitro* anticancer studies, the molecule shows asignificant activity against Hep2, EAC and DLA cell lines. The result of this study provides an opportunity to explore new anticancer leads from this plant.

Keywords:*M.oleifera*,**Niazirin, cytotoxicity, bioassay guided fractionation**

C-23

Exploring an Alternative Animal Testing Method to Evaluate the Angiogenic Activity of *Piper betle* Linn. Leaf Extracts

Sapna Saini, Anju Dhiman and Sanju Nanda

Department of Pharmaceutical Sciences, Maharshi Dyanand University, Rohtak-124001, Haryana, India
01sapnalongia@gmail.com

Abstract:

Piper betle Linn. (Piperaceae) leaves have been used in Chinese and Indian folk medicine for centuries and recently been reported to possess various pharmacological activities *v.i.z.* anti-inflammatory, antioxidants, anticancer, antimicrobial, antiulcers etc. In present study, angiogenic activity of hydroalcoholic (HA), alcoholic (ALC) and aqueous (AQ) extracts of *P. betle* L. leaves have been estimated using an animal alternative model i.e. chick embryo chorioallantoic membrane (CAM) assay. CAM assays have been widely used to study angiogenesis and tumor invasion of colorectal, prostate and brain cancers. The exposed chorioallantoic membrane and its clearly delineated vascular system were used to study the angiogenesis (formation of new blood vessels) process. HA leaf extract has been reported to show maximum angiogenic activity as formation of new blood vessel were found more in HA extract treated group. In the present research work, CAM assay was efficiently used as an attractive alternative model to study angiogenic potential of different *P. betle* L. extracts which supports its wound healing application. The results can be compared with various animal wound model such as excision, incision and dead space model to check its effectiveness. Thus, CAM assays may serve as an effective tool to support other *in-vivo* wound healing models.

Key words: Angiogenesis, Eugenol, Flavonoids, *Piper betle*, **Polyphenols**

C-24

Formulation and Evaluation of Herbal Cream used in Treatment of Arthritis: *A Research*

Parveen Ruhil, Vivek Kumar and Neha Minocha

Department of Pharmaceutical Sciences & Research, Baba Mastnath University, Asthal Bohar, Rohtak-124001, Haryana, India
Parveen.ruhil1995@gmail.com

Abstract:

Herbal cream is the prepartions used by human beings in the treatment of various diseases. The aim of the present research was to formulate the herbal cream for the treatment of very painful disease i.e arthritis (Arthritis is a disease generally includes joint pain, stiffness, swelling and decreased range of motion of the effected joints). The present formulation is composed of *Acacia arabica* (Kiker) from species *Acacia nilotica* (Linn), Linseed oil and oil of menthol, camphor and Ajwain (carom seed). The herbal cream is formulated by two phase system one is oil phase and another is aqueous phase. Herbal cream is formed by using the infusion technique with this technique the formulation was found to be the best one and it gives accurate result. Cream was tested for its consistency and evalution, with the result it has been found that Acacia Arabica (Kiker) posses anti– inflammatory, analgesic properties. The cream is evaluated for Colour , Foreign particle , Extrudability etc by which the percent of active constituent Acacia Arabica was found to be 98.9, Colour of cream was found to be pale yellowish , the spreadibility was found to be 9.12 g.cm/sec , the extrudability was found to be 92 % . After the preparation of cream, it has been tested on 15 to 20 patients and 75 % of the patients using this herbal cream formulation and feels relief in their pain and still they are using this medicament.

Keywords: Herbal cream, Arthritis, *Acacia arabica*, yellow bees wax, Linseed oil.

C-25

Design and Development of Herbal Gel for Burn Wound Healing

Mohammed Haneefa.K.P, Guru Prasad Mohanta and P. Brindha

Al Shifa College of Pharmacy, Poonthavanam Post– 679325, Kerala, India
haneefa001@gmail.com

Abstract:

In the present study an attempt is made to develop herbal burn wound healing product.The present study was

conducted to formulate herbal gel of *Basella alba*isolateusing gelling agents like Carbopol 934, Carbopol 940 and HPMC K4M. The prepared emulgels were evaluated for physicochemical properties as well as for their pharmacological activity.The wound healing activity of *Basella alba* emulgel formulations was investigated by utilizing excision; incision and dead space wound models. Burn wound healing studies of the emulgel formulations revealed that the emulgels of*Basella alba*exhibited significantly ($P < 0.01$) greater wound regeneration activity in comparison with Standard drug (Silver Sulfadiazine Cream, USP 1%), control and untreated control groups.*In vitro* release performance was in consistence with *in vivo* efficacy. The product has almost of neutral pH indicating compatibility with the skin and the product too had optimum gel consistency, viscosity, spreadability and extrudability.Emulgel has also shown reasonable stability in terms of drug content analysis and physicochemical characteristics.Gene expression study of the best formulation, *Basella alba* emulgel formulation, BGF5 revealed that, the possible mechanism of action of the emulgel formulation, BGF5 is by the up regulation of both Collagen type 1 and Elastin and down regulation of MMP -9 during the proliferative phase of wound healing.

Keywords: *Basella alba,* **Emulgel, Wound healing, Carbapol 934**

C-26

In-vitro Thrombolytic Activity of Methanolic Extract of *Avicennia marina* Leaves

Susmith A.M and ManjushA.K

Vignan Institute of Pharmaceutical Technology
Duvvada,Visakhapatnam, India
Sushmithamaturi123@gmail.com

Abstract:

Extracts from mangrove plants has been used worldwide for medicinal purposes and a rich source of steroids,diterpines ,triterpines,saponins,flavonoids,alkaloids and tannins. It has been reported that herbs and their components possessing antithrombotic activity.Atherothrombotic diseases such as myocardial or cerebral infarction are various consequences of the thrombus formed in blood vessels.thrombolytic agents are used to dissolve the already formed clots in the blood vesels."*Avicennia marina*",a mangrove species,(local name: tellamaddi,Family: Acanthaceae).This is found in KORINGA forests**,** Kakinada. Prelimnary phytochemical screening of the leaves of *Avicennia marina* reveals the presence of sterols, tannins, glycosides, flavonoids. 4ml venous blood drawn from healthy volunteers and was distributed in six different pre-weighed sterile microcentrifuge tubes and incubated at 37^0 C for 45 min. After clog formation, serum was completely removed without disturbing the clot and each tube having clot was again weighed to determine the clot weight (clot weight = weight of clot containing tube- weight of tube alone).A significant thrombolytic activity was observed after treating the clots with *Avicennia marina* extract. The clot lysis action of methanolic extract increases with increasing concentration and maximum lysis was shown at 1000(mcg/0.1ml).The % clot lysis of streptokinase (3000 I.C.U) taken from the previous literature. The maximum % clot lysis of streptokinase was taken as 64.34%. Water was taken as negative control and it showed negligible clot lysis. Compared with streptokinase, the methanolic extracts also showed nearly significant activity. Hence a further study on this plant is encouragable.

Keywords: *Avicennia marina*, **Atherothrombotic diseases, Thrombolytic activity**

C-27

Phytochemical Aspects and Development of Herbal Cookies for Treatment of Obesity

A.R.Sakore and K.G.Bhutkar

Genba Sopanrao Moze College of Pharmacy, Wagholi, Pune, India
asmita.ghemud4@gmail.com

Abstract:

Obesity is a multifactorial disorder of energy balance. It is characterised by an excessive Body Mass Index. If BMI is >30 kg/m^2 it is called as obesity. Obesity leads to many multidisorders like- types-II diabetes, heart diseases, gout, sleepapnea, osteoarthritis, obesityetc. Obesity takes place due to lipids which are essential for healthy cell functions as they are not in excess amount in our body. There are three types of lipids: LDL (below 100) HDL (above 60 it gives protection against heart diseases) and Triglycerides (above 150 it increases the rate of heart attack). Antiobesity drugs available in markets are such as Orlistat, Sibutramine, Amphetamine having sideeffects like abdominal cramp,GIT disorders, dryrmouth,tachycardia ,constipation, insomnia etc. So to overcome these sideeffects herbal drugs are introduced as it is the oldest and most widely used system of medicine in the world today as they have less sideeffects and are easily available. We had formulated herbal cookies which areadministered orally and degraded in stomach and it breaks the anabolism of lipid via β-Oxidation which is responsible for deposition of cholesterol in the body. The speciality of our formulation is that it increases lipolysis

and energy expenditure which maintains the body weight and decreasesfat absorption by preventing breakdown of dietary fat in GIT.

Keywords: High density lipoproteins, Multifactorial, Lipolysis, Low density lipoproteins

C-28

Isolation of Omega-3 Fatty Acid from *Cyprinus catla*

Yashashri R. Hingmire, Laxmi B. Mane and Akshay S. Javalgikar

Department of Pharmaceutical chemistry, Bhokare College of Pharmacy, Miraj, sangli, Maharashtra, India
yashashri2102@gmail.com

Abstract :

The proposed work described as isolation of Omega 3 fatty acid from cyprinus catla. Cyprinus catla is fish species, It is commonly found in rivers and freshwater. The fish oil was extract by using Bligh & Dyer method and chloroform & methanol used as solvent for extraction. The objective of present work is to isolation of omega 3 fatty acid from available species of fish. isolation of constituents from was done by preparative TLC chromatography. For isolation omega 3 fatty acid solvent system of Cyclohexane: Methanol: chloroform (8:2:4). Fatty acid composition of these oils were analyzed using Gas- Chromatographic Technique. Structural elucidation of isolated compound done by IR, NMR, GC-MS Spectroscopy . GC-MS spectrum of Fatty acid compound showed molecular mass 280 (M.F)having characteristic fragments observed at *m*/z235 , 165, 135, 123, 95,70.

Keywords: Solvent, Extraction, Fatty acid, *Cyprindus catla*

C-29

Design, Development and Evaluation of Oral Herbal Tablets of *Limonia acidissima* Linn. and *Ficus hispida* Linn.

Yogendra Singh and Jeyabalan G

SunRise Pharmacy College, SunRise University, Alwar, Rajasthan
Alwar Pharmacy College, Alwar, Rajasthan
yogesingh1978@gmail.com

Abstract:

In present study the two ayurvedic medicinal plants *Ficus hispida,* Linn. and*Limonia acidissima,* Linn. stem barks were selected for the comparative hypoglycemic activity, and further designing the possible modern formulations. In a tablet formulation, a range of excipient materials is normally required along with the active ingredient in order to give the tablet the desired properties.Prepared granules were subjected for various evaluation parameters. Angle of repose of all formulation granules was found to be in range of 24^0-29^0. Values of Carr's Index lies between 15.07 to 17.0. Bulk Density ranges were 0.041 to 0.46 gm/cm^3. Tapped densities were found between 0.51 to 0.56 gm/cm^3. Hausner's ratio were found from 1.2 to 1.73. All parameters indicate good flowability.Tablets were prepared using direct compression technique.Since the powder material was free flowing, tablets were obtained of uniform weight variation as per pharmacopoeial specifications. Six batches of tablets were prepared using ethanolic extracts of stem bark of *Limonia acidissima* Linn. and*Ficus hispida* Linn. viz. T_1, T_2, T_3, T_4, T_5 and T_6 using microcrystalline cellulose and cross povidone in varying quantity. Tablets weights were fixed to 600 mg.The weight variation was 2.21 mm -2.51mm and hardness of the tablets were 4.1-4.4kg/cm^2. Friability of the tablets was below 1%, indicating a good mechanical resistance of tablets. The disintegration time of tablets was 13-15 minutes. All the parameters were found well within the specified limit for uncoated tablets. T_3 form of tablets was found of best among all other tablets.

Keywords: *Ficus hispida,* **Linn.,***Limonia acidissima,* **Linn., Granules, Tablets, Evaluation**

C-30

Hepatoprotective activity of Ethanolic extract of leaves of *Sechium edule* against Paracetamol induced Hepatotoxicity in rats

Prabal Sharma, Rumpa Halder, Prosanta Pal and J P Mohanty

Department of Pharmacognosy, Himalayan Pharmacy Institute, Rangpo, Sikkim-737136, India
aayudhsharma823@gmail.com

Abstract:

Sechium edule is a climber plant belonging to the family of Cucurbitaceae. It is used to treat hypertension, kidney stone, atherosclerosis. The leaves of *Sechium edule* were selected based on their utility in traditional system of medicine. In the present study, the ethanolic extract of leaves of *Sechium edule* was selected for the screening of hepatoprotective activity. The

hepatotoxicity was produced on rats by oral administration of paracetamol(2gm/kg). The ethanolic extract at different doses of 300 mg/kg and 600 mg/kg of body weight were administered to different group of animals. At the end serum was separated and different biochemical parameters such as SGOT, SGPT, ALP, total protein, bilirubin was estimated. The ethanolic extract of the leaves of Sechium edule at higher dose (600mg/kg p.o) exhibit prominent protection against paracetamol intoxication than the lower dose (300mg/kg p.o).The traditional use of the leaves of the plant Sechium edule has proved to be one of the herbal remedies for liver ailment and further investigation is required to isolate the compound from the ethanolic extract of the leaves of *Sechium edule* which possess hepatoprotective activity.

Keywords:Paracetamol, Hepatoprotective, *Sechium edule*

C-31

Study of Bioactive Compound in Methanolic Extract of *Clematisheynei*

Pravin Morankar and Alok Pal Jain
SMBT College of Pharmacy, Nasik, Maharashtra, India
pravinmorankar@gmail.com

Abstract:

Screening of medicinal plants for bioactive compounds leads to development of less expensive new pharmacological important agents with improved safety and efficacy. *Clematis heynei* is a multipurpose plant with multiple health benefits. The phytochemical screening of methanolic extract of whole plant material of *Clematis heynei*revealed the presence of bioactive compounds such as saponins, phenols, flavanoids, and diterpenes in methanolic extract. The phytochemical investigation methanolic and aqueous extracts showed presence of flavonoids, and phenolics. The total phenolic and total flavonoid content was found to be the maximum in methanolic extracts (0.57 mg/100mg of GAE/100mg and 1.45 mg/100mg QE/100mg respectively). The findings indicated promising source of antioxidant the plant and needs further exploration for their effective use in both modern and traditional system of medicines.

Keywords: Phytochemical screening, bioactive compound, *Clematis heynei*

C-32

Nutraceutical Evaluation and Standardization of *Aloe vera* Formulation

Archana A. Bele and Anubha.Khale
H.K College of Pharmacy, Jogeshwari (W), M.S., India
archana.bele@hkcollege.ac.in

Abstract:

The aim of this study was to evaluate the nutraceutical formulation and standardise it.*Aloe Vera* gel can provide many benefits to human health and thus becomes a drug of choice for study. A health drink of nutraceutical value was prepared and tested by various qualitative and quantitative means. Quantitative estimation of active ingredient in aloe vera was performed by a colorimetric assay for health drink. In qualitative method tests were positive for Molisch Test, Benedict's Test, Barfoed's Test, Ninhydrin test.In Nutraceutical attribute study for aloe vera,Total carbohydrates content in terms of glucose was found to be 4.86% and was within IASC limit. Elemental analysis study results were obtained in ppm concentrations for each element. Calcium content was found to be 532.9ppm whereas magnesium content was 101.41ppm which was within the limit of IASC which confirmed that the *Aloe vera* juice can be considered as supplement for calcium and magnesium. Invitro DPPH activity was tested and the $IC_{50}$was found to be 30 µg/ml for the Prepared Health drink.

Keywords: Neutraceutical evaluation, Aloe vera gel, health drink, IASC.

C-33

Antiepileptic Activity Study of Root Extract of Sida cordifolia Linn. on Pentylene-tetrazole Induced Mice Model

Bikash Swain, Snigdha Pattnaik, Laxmidhar Maharana and Partha Niyogi

School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar-751003, Odisha, India
snigdhapattnaik@soauniversity.ac.in

Abstract:

The diversely available synthetic anticonvulsant formulations are not only inaccessible, but also found to possess a numerous toxic unpropitious effects. In the current study, an attempt has been made to carry out the anticonvulsant activity study of petroleum ether, methanol and aqueous extracts of dried fresh root extracts of *Sida cordifolia* Linn. (RSCL) on Pentylene-tetrazole (80mg/kg body weight of mice i.p. injection) induced albino mice model to develop a safe, effective and cheap anticonvulsant as compared to the

synthetic one. Albino mice were divided into eight groups; consisting of six mice each. One of those received distilled water (Blank), two groups received petroleum ether extract of RSCL (100 and 300mg/kg body weight of mice respectively), another two groups received methanol extract of RSCL (100 and 300mg/kg body weight of mice respectively), the other two groups received aqueous extract of RSCL (100 and 300mg/kg body weight of mice respectively) and the eighth group received Diazepamas reference standard. The study revealed that the petroleum ether extract of RSCL possess anticonvulsant effect on application of both high and low dose whereas; at high dose of methanol root extract showed significant anticonvulsant effect. The methanol and the aqueous extract of RSCL showed impede but prolonged action while treating to the Pentylene-tetrazole induced epileptic mice. Hence, the petroleum ether extract of RSCL may be optimised for further study as shows the similar desired activity at lesser dose level thereby reducing the adverse side effects that may also be cost effective.

Keywords:Sida cordifolia Linn., Pentylene-tetrazole, Convulsions, Albino mice

C-34

Evaluation Antianxiety activity of *Arnica montana*

Kiran, Vandana Garg and Akash Kalra

Department of Pharmaceutical Sciences M. D. University
Rohtak-124001, India
kirankangra90@gmailcom

Abstract:

The clinical applications of well-known benzodiazepines as anxiolytic agents are limited because of their side effects. Approximately, two third of the anxious or depressed patients respond to the currently available treatment but the magnitude of improvement is still disappointing Therefore, the development of new pharmacological agents, from medicinal plants, is well justified. Anti-anxiety activity of underground and aerial parts of *Arnica montana*was evaluated. Petroleum ether, chloroform, methanol, and water extracts of *A. montana* were prepared by successive extractions using a soxhlet apparatus, and subsequently evaluated for antianxiety activity using the elevated plus maze model. Diazepam was used as standard drug. Various doses (25,50, 100, 200mg/kg) of plant extracts v.i.z., of petroleum ether, chloroform, methanol and water were administered orally to Swiss Albino mice before evaluating their behavioural pattern. Among various extracts, the chloroform extract of *A. montana* exhibited significant increases in open arm entries and mean time spent in open arms at the dosage of 200 mg/kg.

C-35

Antibacterial Activity of *Phyllanthus amarus* Plant Extract against Resistant Pathogenic Bacterial strains: an Ethanomedicinal plant

Manish Pathak, Ankit Chaudhary, Akash Aggarawal and Devendra Mohan

Kharvel Subharti College of Pharmacy, Swami Vivekanand Subharti University,
Meerut (U.P), India
manishpharm01@gmail.com

Abstract:

To evaluate antimicrobial activity of *Phyllanthus amarus* plant extract against resistant pathogenic bacterial strains. Aqueous and acetone extract of Phyllanthus amarus (Family: Euphorbiaceae) was studied against resistant pathogenic bacterial strains (*Bacillus subtilis, Staphylococcus aureus, Enterococcusfecalis, Salmonella typhi, Salmonella paratyphi B, Proteus vulgaris* and *Serratia marsescens*) by disc diffusion method comparable to that of a standard antibacterial Lomefloxacin.Aqueous extract showed 57% efficiency in inhibiting the pathogenic isolates while acetone extract showed 29% efficiency.Phyllanthus amarus aqueous extract was found to be antimicrobially more effective than the acetone extract.

Keywords: *Phyllanthus amarus*, **Disc diffusion method, Resistant bacterial strain**

C-36

Green Blood Therapy to Treat Cancer

Pandellapalli Harika and Maddi Ramaiah

Department of pharmcognasy, Hindhu College of pharmacy,Guntur-522002,
Andhrapradesh, India
hotiharika@gmail.com

Abstract:

To analyse the effect of the aqueous wheat grass extract on Oral Squamous Cell Carcinoma (OSCC) cell line by MTT assay.'KB cell line' (Mouth Epidermal Carcinoma Cells) was used for the present study. Aqueous extract of wheat grass was prepared in the institution. The aim of the study was to assess the effect of the aqueous wheat grass extract on KB cell line(OSCC) by MTT assay.A 41.4% of OSCC cell inhibition was

observed at 1000 µg/ml dilution of aqueous wheatgrass extract in 24 hours.The aqueous extract of wheatgrass has an inhibitory effect on the oral cancer cell line proliferation.

Keywords: KB cell line, Oral squamous cell carcinoma, Wheatgrass(*Triticumaestivum*)

C-37

Extraction and Anti Microbial Screening of Anthocyanins Isolated from *Coccothrinax fragrans*

V. Nirmalkumar, R. Duraisami, T. Prabha and T. Sivakumar

Nandha College of Pharmacy, Erode-52
drtpappa@yahoo.com

Abstract:

The scope of this research work is to explore the phytochemical antimicrobial studies of *Coccothiranx fragrans*. The active principle present in this were Phenolicacids, flavanoids, proanthocyanidin, genrally anthocyanin is about 0.5% among 15 of them are c-3 O-glycosides, O-galactosides(8.9%) and O-arabinosides of cyanidin(8.1%), peonidin (8.9%),delphinidin, malvidin.The fresh Fruits of *coccothrinax fragrans* were used for our extraction process. The fruits were triturated with ethanol continuously in a mortar to get slurry or pasty mass which was filtered to get clear filtrate, the filtrate were concentrated by evaporation to obtain the dried extract. The dried extract was used for our experimental purpose.The fruit extract were subjected to the phytochemical screening of the active ingredients, which showed the presence of flavonoids, anthocyanins, tannins, glycoside, saponins. It is screened by agar diffusion technique against gram +ve and -ve bacteria. Among these, the bacteria such as *sreptomyces aureus* and *bacillus subtillus* showed a positive susceptibility whereas, the bacteria such as *pseudomonas auregenosa* and *salmonella typhi*showed insusceptibility. The diameter of zone of inhibition were showed for *sreptomyces aureus* were 34mm(1000mcg/ml), 19mm(500mcg/ml) and 12mm(250mcg/ml) respectively. Whereas, for *Bacillus subtillus* showed as 32mm (1000mcg/ml), 12mm (500mcg/ml) and 10mm(250mcg/ml) respectively. Among the chemical constituents of *Coccathianx fragrans* it is observed that "Anthocyanins" is playing a major role in providing anti-microbial activity. As this extract is having great potential as antimicrobial compounds, it can be highly recommended in the treatment of infectious microbial diseases caused by resistant microbes.

Keywords: *Coccothiranx fragrans*, Agar diffusion technique, Anthocyanin, Antimicrobial activity.

C-38

Natural fruit vegetable Luffa used for Preparation of Mosquito repellent Ecofriendly paper

Sachin L. Darkunde, SaishR.Pawar and Santosh.S.Bhujbal

Dr.D.Y.Patil Institute of Pharmaceutical Science and Research Pimpri, Pune,India
sachindarkunde05@gmail.com

Abstract:

According to WHO report about 3.2 billion people almost half of the world's population are at risk of malaria and there were 214 million new cases of malaria. Across the region, a steep increase in diagnostic testing for children and preventive treatment for pregnant women has been reported over the last 5 years. Use of mosquito repellents is commonly adopted method to prevent mosquito bites and so as minimize risk of malaria.WHO has mentioned that, most affected areas of world are African Region, South-East Asia Region, and Eastern Mediterranean Region which are also natural rich source of herbal plant. This study is aimed to develop more economical,feasible natural and safe alternative of mosquito repellent paper. We have used natural ingredient extracted from fruit vegetable *Luffaacutangula*(***Luffa***) which is further converted into a thin paper which can act as mosquito repellent. This can serve as a novel herbal approach of preparing mosquito repellant by recycling of waste part of vegetable skin with reduced toxic health effects. This prepared paper will bring evaluation of essence to use for mosquito repellent activity as well as to create a flavored paper. In current invention paper pared from pulp of luffa with grinding with addition of fiber to form paper .The idea of preparation paper many increased the criteria to generate paper with herbal remedy to use in day to day life. This is an important step toward eco-Friendly evaluation for mosquito repellent by natural material.

Keywords: Mosquito repellent, Centrifuge machine, Fruit vegetable, Eco-friendly paper preparation.

C-39

In vitro Antioxidant Study of Amrtadi Churna

Niranjan Muduli, Sangeeta Mukhi and Anindya Bose

Department of Pharmaceutical Sciences and Quality Assurance, School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar,Odisha, India.
niranjanmuduli455@gmail.com

Abstract:

Amrtadi churna, a poly-herbal formulation, is one of the popular ayurvedic formulation is prescribed by the Ayurvedic physician for treating conditions such as hyperacidity (one type of *pitta dosha*in Ayurveda) and also acts as an immunomodulator but the scientific documentation with regards to its effect for the indication is lacking.Amrtadi churna is made of equal quantity of dried fruit of *Gokshur* (*Tribulus terrestris*), pericarp of *Amalaki* (*Emblica officinalis*) and stem of *Guduchi* (*Tinospora cordifolia*).In our present work, Amrtadi churna was evaluated for invitro antioxidant assay by various models like total flavonoid content, total phenolic content and DPPH scavenging in methanolic extract. DPPH (2,2-diphenyl -1- picrylhydrazyl) scavenging activity study was performed using ascorbic acid as a standard antioxidant. Similarly, total flavonoid content and total phenolics content were calculated using standard curve of quercetin and galic acid respectively. Total phenolic content was found to be 231.33µg/ml using galic acid standard curve (R^2=0.95).Total flavonoids content was found to be 70.36µg/ml usingquercetinstandard curve (R^2=0.97). In invitro antioxidant study the methanolic extract of the Amrtadi churna showed significant activity in DPPH method with appreciable IC_{50}value in the range of 1.25mg/ml. These studies suggest that Amrtadichurnacan be used as rich sources of natural antioxidants which are helpful in targeting various diseases and can also acts asan immunomodulator in body.

Keywords: Flavonoid content, Phenolic content, DPPH assay

C-40

Formulation and Evaluation of Polyherbal Floating Microspheres & Analytical Studies

Y. Bhagyasri, K. Ramu and N. Siva Subramanian

Gland Institute of Pharmaceutical sciences, Shangri-La, Kothapet (V), Sivampet (M), Near Narsapur , Medak (Dist) Telangana-502313, India

bhagi.sri32@gmail.com

Abstract:

A medicinal plant is any plant used in order to relieve, prevent or cure a disease or to alter physiological and pathological process or any plant employed as a source of drugs or their precursors. A phytopharmaceutical preparation is any manufactured medicine obtained exclusively from plants (aerial and non-aerial parts, juices, resins and oil) either in the crude state or as a pharmaceutical formulation. The aim of the present study is formulate and evaluate polyherbal extract Floating microspheres, evaluate & analyse the parameters of three Indian medicinal herbal extracts. In the study of Pharmacognostical studies individual plants of Abutilon indicum, Solanum nigrum and Tinospora cardifolia total ash, acid insoluble ash values, acid soluble ash,water soluble ash values, loss on drying values were performed respectively. The Preliminary Phytochemical screening of Ethanolic extracts of three various herbal plants of (Abutilon indicum, Solanum nigrum & Tinospora cardifolia),revealed the presence of alkaloids, carbohydrates, glycosides, flavonoids, tannins and Phenolic compounds. In the study of thin layer chromatography Abutilon indicum mobile phase of chloroform: acetic acid: water (5:2:2:1), Solanum nigrum mobile phase of N-butanol: acetic acid: water (8:1:1), and *Tinospora cardifolia* mobile phase of Chloroform: methanol (9:1) performed respectively of plants extracts. FT-IR studies formulation have same as peak values compared with extract peak wave numbers. So conclude that there was no significant difference between extract and polymers.

Keywords:Abutilon indicum, Solanum nigrum, Tinospora cardifolia, floating microspheres, evaluation, analytical parameters

C-41

Anthelmintic and Antioxidant activity of Karamarda fruits (*Carissa carandas*)

Rajesh Bolleddu, Sreya Dutta, Deboleena Paria and Jayram Hazra

National Research Institute of Ayurvedic Drug Development, KolkataCCRAS, Ministry of AYUSH, West Bengal, India
rajesh_bolleddu@rediffmail.com

Abstract:

Karamarda- *Carissa carandas* is an Ayurvedic plant used for the treatment of acidity, indigestion, wound healing, skin diseases, urinary disorders and diabetic ulcer. *Carissa carandas* (Apocynaceae) fruits aqueous extract was investigated for anthelmintic activity using Earthworms (*Pheretima posthuma*). Various concentrations (10-50 mg/ml) of aqueous extract were screened for anthelmintic activity. Albendazole (20 mg/ml) was used as reference standard. Determination of paralysis time and

death time of the worms were recorded at each concentration. The aqueous extract also showed good antioxidant properties in Nitric oxide (IC_{50}-70 µg/ml), DPPH radical scavenging activity (IC_{50}-850 µg/ml) in comparison with standard drugs like Ascorbic acid and Curcumine. Further its antioxidant activity was confirmed by Reducing power (Total anti oxidant activity) method. Increasing concentration of aqueous fruit extract shown good reducing power. Preliminary phytochemical screening reported the presence of carbohydrates, proteins, saponins, phenols and flavonoids. The rich concentration of total phenols (50 mg GAE/g), flavonoids (12mg RE/g) present in Karamardafruits may be responsible for observed antioxidant potential.

Keywords: *Carissa carandas*, **Anthelmintic activity, DPPH, Reducing power, Phenols**

C-42

Current Status of Active Metabolites from Marine Sources and their Future Scope

Ghazala Zia and Munish Garg
Department of Pharmaceutical Sciences, Maharshi Dayanand University, Rohtak-124001, Haryana, India
ghazalazia94@gmail.com

Abstract:

Since the ancient times, early civilization of Greece, Japan, China and India have been using marine organisms as a source of drug. Fish oils are the classic examples of marine derived product that are in use since ages. Nowadays, diseases are changing pattern and the new diseases are emerging due to changing environment & genetic mutation, which cannot be generally treated by terrestrial natural products. Novel bioactive natural products from marine source have shown their beneficial effects on treating such diseases like cancer, diabetes, microbial infection, inflammation, CNS disease. Due to the unique metabolic abilities of the metabolites to ensure their survival in diverse and hostile habitats, secondary metabolites have been developed in marine organisms to depict some specific activities. These active metabolites have extensive past and present use in the treatment of many diseases and serve as compound of interest both in their natural form as well as templates for synthetic modification. Several molecules derived from microorganism, algae, fungi, invertebrate, vertebrate are currently studied and are at their advance stage of clinical trials. Some of them have already been marketed as drugs e.g. cytarabine, vidarabine, omega-3 acid ethyl esters, ziconotides while some are still in phase-3 trials like plipideprine, tetrodotoxin. Challenges that come during clinical phase trial are generally occurrence of adverse drug reaction (ADR) which may lead to the withdrawal of many compounds under phase-2 trials e.g. synthadotin (*Dolastatin auricularia),* Pseudopterosins (*Pseudoptergorgia elisobethae*), elisidepsin (*Elysia sufescene),* Plinabuli (*Aspergillus species)*.

C-43

Preparation and Evaluation of an Anxiolytic Nutraceutical (Ghrita)

P.Parvathi and S.Tripathy

Sri Vasavi Institute of Pharmaceutical Sciences, Tadepalligudem, W.G.dt AP, India
padalaparvathi8@gmail.com

Abstract:

Anxiety is a state of excessive fear and is characterized by motor sympathetic hyperactivity, apprehension and vigilance. The prevalence of anxiety disorders is widespread globally. Ghrita is one of the ayurvedic formulations that contain ghee as the base to dissolve or extract or hold the active therapeutic principles from the ingredients.The tested ghrita compound formulation containing ghee along with *marsilea Quadrifolia , Lawsonia inermis and Piper betle*. Healthy adult male Swiss albino mice (20-25 g) were used for the study of anxiolytic activity by using Elevated plus maze, Actophotometer, Rotarod Test and Hole Board Test. The animals were grouped in to 10 animals each and administered with Diazepam(2 mg/kg),**ghrita (0.1ml) and normal saline** orally for 15days.The study showed that there was significant($p<0.05$) increase in the time spent in the open arm, number of open arm entries, decrease in locomotor activity, reduced the fall of time and decrease in head dipping behaviors in the mice treated with diazepam and ghrita when compared to control. From the above experiment it has been concluded that the test Medicinal Ghrita possesses a significant anti depressant potential. Further studies have to be carried out to find out the exact mechanism of these effects.

Keywords: *Piper betle,***Ghrita,Anxiolytic activity**

C-44

Preparation and Evaluation of Novel Gingerol Phytosome loaded Chitosan Complex

Gangadharappa HV, Singh Rudra Pratap, Mruthunjaya K

JSS College of Pharmacy, Jagadguru Sri ShivarathreeswaraUniversity, Mysuru-570015, India

hvgangangadharappa@jssuni.edu.in

Abstract:

Gingerol (*Zingiber officinale)* belongs to Zingiberaceae family exhibits low bioavailability, poor water-solubility and is rapidly eliminated from the body. The aimed to use novel delivery system to improve the bioavailability and prolong the retention time of gingerol in the body. The complex of GPLC containing different molar ratios (1:1:0.25, 1:1:0.50, 1:2:0.25, 1:2:0.50, 2:1:0.25, 2:1:0.50 and 2:2:0.25, 2:2:0.50) was produced by loading of gingerol-phytosomes (GP) in chitosan solution using anti-solvent precipitation technique. GPLC and GP were characterized by FT-IR, DSC and SEM and evaluated for % yield, % EE, % drug loading, particle size analysis, zeta potential, solubility study and *in vitro* drug release. Differential scanning calorimetry (DSC) and Fourier transform infrared spectroscopy (FT-IR) demonstrated that the compatibility and confirmation of complex of gingerol with soya lecithin and chitosan. The optimized GPLC and GP were irregular particle shapes & spherical and oval structures, with a mean particle size of 254.01±0.05 nm, 431.21±0.90 nm and zeta potential of -17.53 mV, -13.11 mV, respectively. The % yield of GPLC and GP was 73.96±0.01 % and 73.24±0.06 %. The % entrapment efficiency and % drug loading of GPLC and GP was 86.02±0.18 %, 84.36±0.42 % and 59.26±0.71%, 58.05±0.03%, respectively. The *in vitro* release rate of GP (86.03±0.06%) was slower than GPLC (88.93±0.33%) in pH 7.4 phosphate buffer up to 24 h. The above results indicated that the novel approach of GLPC drug delivery system combined the advantages of chitosan with GP, which showed better effects of promoting oral absorption and prolonging retention time of complex of gingerol loaded phytosome than gingerol phytosome or blank complex of phytosome of gingerol. Thus, the GPLC may be used as a sustained drug delivery system for lipophilic compounds with poor water-solubility and low oral bioavailability.

Keywords: Phytosome, Gingerol, Soya lecithin, Chitosan, Bioavailability

C-45

Selective Extraction of Phyto-constituent from Plant Extract using Human Serum Albumin Functionalized Magnetic Nanoparticles

Akshay Modha, Deepika Thakkar and Vijaykumar Parmar

Ramanbhai Patel College of Pharmacy,Charotar University of Science and Technology, CHARUSAT Campus,Changa-388421, Petlad, Anand, Gujarat, India

akshaymodha@gmail.com

Abstract:

Human serum albumin (HSA) functionalized magnetic nanoparticles (MNPs) are used to isolate and identify bioactive saponin ligands that binds to HSA in herbal extract of *Tribulus terrestris*. Herbal medicines are often mixtures of several herbal plants constituent. This characteristic makes the quality control: a big challenge. A group of steroidal saponin, Terrestrosin A-E, Terrestrosin F-K, Neotigogenin, and Diosgenin present in the plant are believed to be the main active ingredients. It has been a challenge to study the individual saponins separately due to the similarities in their chemical and physical properties. *Tribulus terrestris* and the preparations made from it have been used for long to prevent Urinary tract infection/ Partial infection in traditional Chinese medicine. For Extraction Process, HSA Functionalized Magnetic Nano Particles are used. For this Initially, MNP are prepared by Co-Precipitation method. After MNP preparation, MNP are Silica coated by Tetraethyl orthosilicate. Then it is amino functionalized by APTES (Amino propyl triethoxy silane), which is activated by glutaraldehyde solution. Human serum albumin is immobilized on APTES modified Fe_3O_4@SiO_2. Black magnetite form of magnetic nanoparticle was prepared in range of particle size 200-350 nm. For Finger printing analysis, stationary phase used is precoated silica gel G60 F_{254} on aluminum sheet, mobile phase; mixture of toluene and ethyl acetate in ratio of (8:1 v/v), development through twin trough chamber, derivatization agent; vanillin:sulphuric acid, slit dimension; 4.00 mm × 0.30 mm, Micro, Lamp; Deuterium and Tungsten is used. Biofingerprint chromatogram analysis was proposed for the screening and analysis of multiple bioactive compounds in herbal extract of *Tribulus terrestris*.

Keywords: Human serum albumin, magnetic nanoparticles, APTES (Amino propyl tri ethoxy silane), Tribulus terrestris

C-46

Evaluation of *In-vitro* Antioxidant and Free radical scavenging activity of *Acalypha indica*

Wadkar Avinash R., Ghule Pravin M, K Rajendra, Shivakumar S Ladde and Kulkarni Amough A

Department Pharmacognosy, Shivlingeshwar College of Pharmacy, Almala-413520, Tq Ausa, Dist-Latur (MH), India

shreekrishna81@gmail.com

Abstract:

Antioxidants are special class of micronutrients, can protect human body from free radicals. Free radicals are implicated for many diseases including diabetes mellitus, arthritis, cancer, ageing etc. In the treatment of these diseases, antioxidant therapy has gained utmost importance. The purpose of this study was to evaluate *Acalypha indica* as a new potential source of natural antioxidants. Antioxidant activity of acetone extract of *Acalypha indica* was studied for its in-*vitro* antioxidant activity using different models viz. DPPH radical scavenging, ABTS radical scavenging. The results were analyzed statistically by the regression method. From the obtained results, it indicates that the acetone extracts of *Acalypha indica* has potent antioxidant activity in the *in-vitro* system. The antioxidant property may be due to the presence of tannins, amides, cyanogenetic glycosides, anthraquinone glycosides and other phytochemical molecules that are present in the crude extract. The further focused research is required for isolation and characterization of functional molecules.

Keywords:*Acalypha indica*, **DPPH, ABTS radical scavenging, Antioxidant activity**

C-47

Antiproliferation Activity of *Ocimum gratissimum* Aqueous extract on Human Breast Cancer MCF-7 Cell line

Shaktiprasad Pradhan, Debasish Pradhan and Ranjit Mohapatra

University Dept. of Pharmaceutical Sciences, Utkal University, Bhubaneswar-751004, Odisha, India
shakti.pharma16@gmail.com

Abstract:

Ocimum gratissimum (OG)has been used in traditional systems of medicine as it has marked remedial activities against many diseases including cancer.Our study is a part of an ongoing search for potential anticancer agents in the ethnomedicinal plants of Odisha.Different concentrations of OGaqueous extract were exposed to Human breast cancer MCF-7 cell line at different time intervals. *In-vitro* cytotoxicity study with evaluation of growth inhibition was done by MTT [3-(4,5-dimethylthiazol-2-yl)-2,5- diphenyl tetrazolium bromide] assay, regardless of ER status. Observation of the changes in cell morphology & detection of apoptosis was done. The various concentrations of the aqueous extract of OGwere used & effective dose was calculated from dose-response curve. After treatment an increased rate of cell death was observed in the MCF-7 cells. The antiproliferation activity on MCF-7 cell line was evaluated & found to have significant growth inhibitory effect with IC(50) value 41.7 microg/ml. This proposed that the aqueous extract ofOG be appropriate for potential anticancer activity through growth inhibition and apoptosis on human breast cancer cell. Further purification and characterization of the aqueous OG extract might bring more potential sources of bio active molecules.

Keywords: Antiproliferation activity, *Ocimum gratissimum* **(OG), Aqueous extract, Breast cancer cell, MTT**

C-48

Pharmacognostic profile of *Lens culinaris* Medikus Seeds

Kripi Vohra, Harish Dureja and Vandana Garg

Department of Pharmaceutical Sciences, Maharshi Dayanand University, Rohtak-124001, Haryana, India
kripi.vohra@gmail.com

Abstract:

In the current research, the pharmacognostic profile of *Lens culinaris* Medikus seeds has been studied. A detailed pharmacognostic (macroscopic and microscopic) study was performed. The physicochemical parameters such as foreign matter, swelling index, foaming index, pH of 1% and 10% solution of powdered seeds in water, microbial content determination and loss on drying were also determined. The successive extraction of the plant material was performed using four solvents (in increasing polarity), i.e., petroleum ether, chloroform, ethanol and aqueous to determine the presence of phytoconstituents. The seeds were greyish brown in colour with shape of biconvex lens and mucilaginous taste. The transverse section showed parenchymatous cells, unstained and stained starch grains. The seeds were free of foreign matter. The pH of 1% and 10% solution of powdered seeds was found to be 6.85 and 6.43, respectively. Loss on drying (%w/w) of seeds was found to be 3.400±0.005. Foaming index was found to be Less than 100. The seeds showed the presence of saponins, tannins, proteins, carbohydrates, phytosterols, fats and flavonoids.

C-49

Optimizing Extraction of *Allmanianodiflora* by the Utility of Design of Experiment

Jayshree Ojha, K. Padmaja, S.Ganapathy, Jagadeesh Panda and P. Mary Sulakshna

Department of Pharmacognosy,Raghu College of Pharmacy,

Dakamarri, Bheemunipatnam,
Visakhapatnam-531162, Andhra Pradesh, India
GITAM Institute of Pharmacy,GITAM University, Rushikonda,
Visakhapatnam,
Andhra Pradesh, India
jayshreeojha1@gmail.com

Abstract:

Extraction is an important prerequisite in purification, analysis, identification and screening of vital phytochemicals from plant matrices. Plant matrices contain complex mixture of phytochemicals with multiple biological activities. Yet purification and identification of phytochemicals of interest for a particular bioactivity can introduce new challenges for extraction efficiency. The parameters that govern extraction efficiency are particularly complex and interdependent, including type of sample volume, temperature, extraction time, stirring speed, %organic modifier, ionic strength and pH. Performance of extraction procedures can be optimized by simultaneous investigation of all the relevant factors through statistical designs broadly referred to as "design of experiments". In this study, a response surface methodology based Box-Behnken Design (BBD) was employed to optimize total phenolic content and antimicrobial activity of whole plant extracts of *Allmania nodiflora*. Four extraction process variables: solvent (methanol, ethanol, water), solvent/sample ratio (10, 20, 30), temperature (40, 60, 80ºC) and time (20, 40, 60 min) were investigated for maximum polyphenols and antimicrobial potency. Under the optimum conditions of 60min extraction time, 60°C temperature, solvent type (ethanol), and 30 solvent/solid ratios, the values for antimicrobial potential and total polyphenols were 0.17mm and 10.702 mg gallic acid/g respectively.

C-50

Preliminary Phytochemical Study and Excision Wound Healing activity of *Enhydra Fluctuans* Lour.

Nirmalya Khan, Nilip Kanti Dev and Jhuma Dev

Department of pharmaceutical Analysis & Quality Assurance,
Himalayan Pharmacy Institute
Majhitar-737136, Sikkim,India
nirmalya280695@gmail.com

Abstract:

The selected plant *Enhydra fluctuans Lour* used for the study was selected based on its ethno medicinal, phytochemical, biological and pharmacological information. After collection the plant subjected to successive extraction with different solvents like petroleum ether, chloroform and ethanol followed by preliminary phytochemical study to confirm the various primary and secondary metabolites present in the extract. The ethanol extract subjected to determine the wound healing potential by excision wound model using healthy Wister albino rats. Ointment is made using extracts, wool fat, hard paraffin, cetosteryl alchohol and white soft paraffin using conventional method of preparation of ointment. The wound healing potential of medicated ointment is compared with control (ointment without extract) and nitrofurazone (0.2% w/w). From excision wound healing study it is being studied that the percentage of wound closure in ethanol extract showing better result than that of control. The study shows that the ethanol extract of plant having some wound healing potential and further phytochemical investigation should be carried out and also screening for wound healing potential with different models has to be carried out to provide more scientific support to establish the plant as a potent wound healing plant.

Keywords:*Enhydra fluctuans Lour,* **Ehanolic extract, Excision wound, Ointment, Nitrofurazone**

C-51

Lantana camara: Secondary Metabolite Isolation by Analytical Techniques

Md. Rageeb Md. Usman and Bharat V. Jain

Department of Pharmacognosy, Smt. S. S. Patil College of Pharmacy, Chopda-425107,
MH, India
rageebshaikh@gmail.com

Abstract:

The Plant Lantana camara belongs to the family Verbenaceae, have always been an important source of phytomedicinal agents since ancient times, Until today, it continue to provide modern medicine with novel treatments and to support to identify and isolate compounds from Indian flora with potential biological activity and medicinal value. It has been reported to be used in folk remedies For instance, used for antibacterial, antiulcer, antioxidant, and also treatment for malaria, rheumatisms, asthma, tumors. Many Literature review and phytochemical investigations have been done on this plant, reported to contain various compounds like triterpenoids, proteins, carbohydrates, lactones, furfural, flavonoids, alkaloids, glycosides, tannins, steroids. The ethanolic extract were subjected for column chromatography for the isolation of secondary metabolites by using stationary phase as silica gel with mesh number of 230-400 and the mobile phase

was 20% & 30% ethyl acetate/hexane. The Functional groups, structural analysis of the isolated metabolites identified from IR spectrum resembled functional groups of flavonoid chemical structure, Yellow color is characteristic of flavonoids.

Keywords: *Lantana camara*, **Secondary metabolites, Column chromatography, TLC, IR spectroscopy**

C-52

Hydrogel as a binding agent isolated from *Citrus aurantium* Linn.

Ittishree, Meenu Bhan and Anju Dhiman

Department of Pharmaceutical Sciences, Maharshi Dayanand University, Rohtak-124001, Haryana, India
Ittishree30@gmail.com

Abstract:

Ayurvedic powders are widely used in the traditional system of medicine for the treatment of wide range of ailments like common cold, gastro intestinal disorders, diarrhoea, fever etc. However, their unpleasant odour, bitter taste and poor bioavailability make them less acceptable approach for oral administration to the patients. These problems may be overcome by converting them in unit dosage forms like tablets, capsules etc. using natural excipients. The purpose of the present study is to explicate and quantitate the compressibility and compatibility of herbal granules prepared from panchsakar churna (Baidyanath) using hydrogel prepared from rind of *Citrus aurantium* Linn. (family: Rutaceae). The prepared hydrogel was investigated for binding and granulating properties using sample of panchsakar churna. Granules of powder formulation were prepared and hydrogel was added as granulating and binding agent. Granules were then compressed for preparation of tablets. The prepared granules were evaluated for particle size, moisture content, hausner's ratio, compressibility index and true density. Porosity, thickness, weight and diameter of intact ejected tablets were also measured. The mechanical properties of the tablet were determined using Monsanto hardness tester and crushing strength. After evaluating these parameters, the hydrogel isolated from the rind of *C. aurantium* was found to have a good potential as granulating and binding agent and may be used as a natural excipient for preparation of tablets.

Keywords: Binding agent, *Citrus aurantium* **Linn., Granules, Hydrogel, Panchsakar churna**

C-53

Evaluation of *In-vitro* Antioxidant activity of marketed Tobacco products

Prachi Barsagade, Ekta Tembhare, Roshani Bopche and A.O. Maske

Bajiraoji Karanjekar College of Pharmacy Sakoli, Bhandara, Maharashtra, India- 441 802
prachibarsagade398@gmail.com

Abstract:

Tobacco consumed by 20 to 50% of the worldwide population, contains significant concentrations of polyphenols and carotenoids. The concentration of nicotine and other constituents of chewing tobacco products have been studied extensively, but there is little information on the antioxidant properties of these products. In present study, antioxidant activities of methanolic extract of marketed tobacco products were evaluated spectroscopically by different in vitro methods including reducing power assay, phosphomolybdate assay and iron chelating activity assay. The screening was carried out at different concentration including 100, 200, 300, 400 & 500µg/ml in reducing power assay and phosphomolybdate assay while in chelating assay the extract was used in concentration of 50, 100, 150 & 200µg/ml. All tobacco products exhibit the antioxidant potential with increasing concentration. The anti-oxidant activity of the marketed tobacco product might be attributed to its polyphenolic content and other phytochemical constituents. Hence, further investigation need to be carried out to isolated and identify the anti-oxidant compounds present in the tobacco extract. Our study concluded that, tobacco causes addiction and dependence but till it has many practical folklore traditional medicinal uses. If it is used in positive way then it had the power to treat and protect but if misused then it had the power to harm.

Keywords: Antioxidant activity, Tobacco products, Reducing power assay, Phosphomolybdate assay, Iron chelating assay

C-54

Phytoconstituents from *Jasminum mesnyi*

Hitesh Kumar, Hayat M Mukhtar and Rohit Goyal

IK Gujral, PTU, Jallandhar, Punjab
SBS College of Pharmacy, Patti, Punjab, India

Abstract:

Aim of study was to investigate the Phytoconstituents of *Jasminum mesnyi*.Preliminary phytochemical investigation

of plant extract was done using various quantitative and qualitative tests so as to detect the type of constituents present in the plant. Preliminary phytochemical investigation of plant reveals the presence of carbohydrates, phenolic compounds, protein, amino acid, resins, and tannins.literature survey of plants reveals the presence of secoirridoids (Jasmoside, Jasmesoside, 9″-hydroxy jasmesoside, 9″-hydroxy jasmesosidic acid, Jasminic 10″-O-ß-D-Glucoside, 2″-hydroxyjasmine, isojasminin, 4″-hydroxy jasminin and jasmosidic acid) in methanolic extract of plant. Preliminary phytochemical analysis reveals the presents of many other constituents in the plant. It was concluded that plant is not yet explored for the isolation of Phytoconstituents. The aim of the present paper is to explore the phytochemical properties so that pharmaceutical potential of this plant may be developed.

Keywords: *Jasminum mesnyi,* **Phytoconsituents, Secoirridoids**

C-57

In-vitro acetylcholinesterase inhibiton assay of *Withania somnifera* and *Piper longum*

Vasudev Pai, C. S. Shreedhara, K.S.Chandrashekar

Department of Pharmacognosy, Manipal College of Pharmaceutical Sciences,
Manipal University, Manipal 576104, Karnataka, India
pai.vasudev@manipal.edu

Abstract:

Alzheimer's disease (AD) is the most common form of the dementia which occurs among the older people above the age of 60 years. It is characterized by progressive neurodegeneration, dementia, decline of cognitive deterioration and severe behavioral disturbances. AD is the fourth leading cause of death in U.S.A. It is become a new epidemic threat to human civilization in the coming century. Increased oxidative stress, reduced acetylcholine level and an increased activity of acetylcholinesterase is reported in patients. Acetylcholinesterase inhibitor which enhances cholinergic transmission by reducing the enzymatic degradation of acetylcholine are actually the most important way to control the risk of AD. The medicines available for the treatment of AD are symptomatic and produces lot of side effects in the patients. Herbal remedies have becoming more popular in the recent years because of its excellent effect with no side effects. The present work was undertaken to assess neuroprotective action of *Withania somnifera* and *Piper longum extracts* along with marker compounds like *Withanolide A* and *Piperine*. Acetylcholinesterase inhibition assay of *Withania somnifera* extract shows IC50value 52.91µg and withanolide A shows 59.40 µg. Piper longum extract shows IC50value 43.06 µg and marker compound piperine shows 46.65 µg. Also the standard drug Rivastigmin was analyzed and shows IC5010.32 µM. Both the extracts and marker compounds shows significant Acetylcholinesterase inhibition. Hence both the extracts can be used in the combination to have the synergistic effect on the pathological hallmark of the disease.

Keywords: Alzheimer' disease, Acetylcholinesterase inhibition, Neuroprotective action

C-58

HPTLC Fingerprinting Profile and Validated HPLC Method for the Determination of Betulin in the Stem Bark of *Tectona grandis* Linn.

Preet Amol Singh, Ashish Baldi and Vidhu Aeri[1]

Department of Pharmaceutical Sciences and Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda-151001, India
[1]Faculty of Pharmacy, Department of Pharmacognosy & Phytochemistry, Jamia Hamdard University, New-Delhi, India
preetnabha67@gmail.com

Abstract:

Betulin, a known pentacyclic tri-terpenoid, possessing diverse pharmacological properties was determined using HPLC in methanolic extract from the stem bark of *Tectona grandis* Linn. distributed in greater part of India. Furthermore, *T. grandis* Linn.is used traditionally in treatment of bronchitis, dysentery, headache, leukoderma, leprosy and constipation. The present study was aimed to develop the HPTLC finger printing profile of *T. grandis* with reference to betulin and also to validate HPLC method for the determination of betulin in *T. grandis* Linn. HPTLC fingerprinting profiling was performed using Camag Linomat applicator model V, Camag TLC visualizer. Samples were applied on aluminium HPTLC silica gel plates 60 F254 p. Solvent system i.e. n-Hexane-Ethyl Acetate (8:2) was developed for betulin separation. The chromatographic separation was achieved using Waters HPLC instrument, reverse phase Hypersil C18 column (250 mm) under isocratic elution of acetonitrile-water 85:15 (v/v) with a flow rate of 1.0 mL min $^{-1}$ and the run time was set at 15 min. The detection was done at 210 nm and the column temperature was maintained at 25^{0} C. The method was linear for betulin over the concentration range of 28.42- 53.99 ppm (R^2 = 0.9974) The quantification of betulin in methanol extract of *T. grandis* Linn. was validated in

terms of system precision, method precision, linearity, recovery, robustness, ruggedness, LOD and LOQ according to ICH guidelines. The % RSD values were found to be in an acceptable range as per ICH guidelines.

Keywords: Betulin, HPTLC, HPLC, ICH guidelines

C-59

Exploration of Analgesic activity of Different Extracts of *Quisqualis indica* Linn. (*Combretaceae*) Leaf

Ritesh Kumar Sahoo, Goutam Kumar Jana, Reema Rani Sandha, Somezeet Panda

Department of Pharmacognosy, Gayatri College of Pharmacy, Jamadarpali, Sambalpur-768200, Orissa
Email:goutamkjana@rediffmail.com

Abstract:

Ethnobotany is a multidisciplinary science defined as the interaction between plants and people. Nature always stands as a golden mark to exemplify the outstanding phenomenon of symbiosis. Man adopted some control measures to get rid of diseases by using plants from nature which are being used in medicine from time immemorial because they have fitted the immediate personal needs and nature remains as the potential source of organic structures of unparalleled diversity. India has an ancient heritage of traditional medicine.On the basis of ethnomedicinal use, analgesic activity of petroleum ether, methanol and ethanol extract of Quisqualis indica Linn. (Combretaceae)leafhas been investigated in albino rats by tail immersion method. The study was carried out by using dose of 300mg/kg orally. Experimental results exhibited that petroleum ether, methanol and ethanol extract of leaf of Quisqualis indica, possess a significant analgesic effect. Analgesia is the inability to feel pain while still conscious. From the Greek an- without + algesis- sense of pain. After inducing of diclofenac sodium (45mg/kg) in 0.5% w/v suspension of sodium lauryl sulphate as the standard drug, reaction time was recorded. Then different extracts of the drug was induced into albino rats, which shows significant results. The mean reaction time was found out for each group and compared with the value of standard drug. It was observed that all the extract at a dose of 300mg/kg body weight showed maximum analgesic activity which is statistically significant as the value of $p<0.05$.

Keywords: Analgesic, Quisqualis indica, Diclofenac sodium, Plant extracts

C-60

Screening of Mosquito Repellent Activity from Plant Weeds: Ocimum gratissimum (Van Tulsi)

Mukesh Kumar Sharma, Ajazuddin and Amit Alexander

Rungta College of Pharmaceutical Sciences and Research, Kurud, Bhilai-490026 (C.G.) India.
mukesh.rcpsr@gmail.com

Abstract:

A herbaceous plant not valued for use or beauty, growing wild and rank and regarded as cumbering the growth of superior vegetation. *Ocimum gratissimum* is a fast-growing weedyannual plant in the genus Ocimum. Though cultivated in some regions, the plant is elsewhere considered a weed. Present work shows that the plant *Ocimum gratissimum* is labeled as weed agricultural field in world. Insect repellent property of leaves has been proved. The presence of several important chemical constituents in the weed plant is responsible for insect repellent property.Insect repellent property of *Ocimum gratissimum* was found to be only 32% and calculated by using Hendersion-Tilton's Formula which help to determine the mortality rate of insect under suitable condition. The mixture is acting as an insect repellent but to increase its effectiveness, the actual constituent of the extract is to be identified and steps can be taken to synthesize the compound. These properties insect repellent can be enhancing by adding some other weeds in future.

Keywords:*Ocimum gratissimum*, **Insect repellent,Weeds**

C-61

Formulation and Evaluation of Ethosomal gel containing Boswellic acid for Topical delivery

Ankit Sharma and Bharatbhushan Shrikhande

Siddhayu Ayurvedic Research Foundation, Nagpur
ank30.sharma@gmail.com

Abstarct:

Boswellia serrata has been traditionally used topically as an antinflammatory agent and in treatment of arthritis. A major problem with boswellic acid is its low aqueous solubility which limits its transdermal absorption. Several attempts have been made to increase the transdermal absorption of boswellic acid by formulation of NDDS systems composed of Boswellic acid. Ethosomes are vesicular drug delivery sytems

which are composed of phospholipids, ethanol and water. Ethosomes are ideal fortopical drug delivery since they offer many advantages one of which is the high content of ethanol which causes disruption of skin layer and hence offers higher absorption. Ethosomes can entrap various types of molecules including hydrophilic, lipophillic or amphiphilic molecules. In the present study, Ethosomes loaded with boswellic acid were prepared and evaluated for their entrapment efficiency. These Ethosomes were then used to prepare topical gels. These gels were evaluated for their spreadibility, pH, drug content and *in vitro* diffusion.

Keywords: Ethosomes, Boswellic acid, Transdermal delivery, NDDS

C-62

Phytochemical Standardization of the Aerial parts of *Eriosema chinense* Vogel.

Ashraf Uddin Ahmed, Damiki Laloo, Biplop Saha, Monowar Hussain and Satyendra K. Prasad[1]

Department of Pharmacognosy, Girijananda Chowdhury Institute of Pharmaceutical Science, Guwahati-781017, Assam
[1]Department of Pharmaceutical Sciences, R.T.M., Nagpur University, Nagpur-440033
damiki.laloo@gmail.com

Abstract:

Eriosema chinense (EC) Vogel (Leguminosae) is a short erect herb which is distributed in India particularly over the Eastern Himalayan region of India. The plant is rich in phytochemical classes particularly flavonoid glycoside, of which recently eight new prenylated flavonoids, khonklonginols A–H, together with six known compounds including five flavonoids, lupinifolinol, dehydrolupinifolinol, flemichin D, eriosemaone A, lupinifolin, and one lignan, yangambin, have been isolated from the root portion this plant. The objective of the present study is to scientifically evaluate the phytochemical parameters of the various classes phytoconstituents present in the aerial parts of EC. The aerial parts of the plant was subjected to successive extraction by the used of Soxhlet extractor. Solvents based on increasing polarity (Petroleum ether –Chloroform –*n*-butanol –Ethyl acetate –Methanol –Water) were used as menstrum. The successive extracts obtained were distilled using rotary evaporator and were dried in a desicator until used. Phytochemical screening was done following the standard methods provided in the literatures. Quantification of total phenolic, tannin and flavonoid content was also ascertained.Results of the percentage yield for each successive extracts were calculated and it was found to be Petroleum Ether (2.16% w/w), Chloroform (1.84% w/w), *n*-butanol (5.12% w/w), Ethyl Acetate (0.56% w/w), Methanol (4.88% w/w) and Aqueous residue (6.09% w/w). Phytochemical screening showed the presence of flavonoids, steroids, carbohydrates, alkaloids and saponins. Quantitative estimation of total phenolics, tannins and flavonoids content was found to be present in significant amount. The outcome of the present study provides detail information of the preliminary screening process of the phytochemical classes present in the aerial parts of ECsuccessive extracts.

Keywords: *Eriosema chinense,* **Preliminary phytochemical screening, Standardization**

C-63

Comparison of Andrographolide Content in Methanol and Aqueous Extracts of Nilavembu Kudineer Siddha Formulations by HPTLC Technique

S.Mohanraj, R. Arivukkarasu, M.Marimuthu and Melina D'Cruz

KMCH College of Pharmacy, Coimbatore-641048, Tamilnadu
phytoarivu@gmail.com

Abstract:

Native system of Siddha medicine is playing a vital role in the prevention of viral infections such as dengue fever, chikungunya and swine flu in Tamilnadu. The main aim of the study is to estimate and compare the andrographolide content in methanol and aqueous extracts of Nilavembu Kudineer Siddhaformulations containing *Andrographis paniculata* as one of the ingredients. HPTLC method was adopted for determining the content of andrographolide in Siddha formulations using and andrographolide as marker compound. The HPTLC method was performed using HPTLC aluminium sheets precoated with silica gel 60 GF_{254} as stationary phase and ethyl acetate: n-hexane (8.5:1.5 v/v) as the mobile phase. The developed chromatogram was scanned at 254 nm using Camag scanner III. The Rf value of standard andrographolide and andrographolide in the aqueous and methanol extract of Nilavembu Kudineer Siddha formulations was found to be 0.74%,0.26%,0.044, 0.50% and 0.10% respectivly. Among the formulations methanol extract showed high amount of andrographolide.

Keywords: Andrographolide, Nilavembu, Aqueous, HPTLC

C-64

Design and Development of Multi-purpose Herbal Ointment

Shivangi Patidar, Prachi Arya, Hemant Khambete, Sanjay Jain

Indore institute of pharmacy, Rajiv Gandhi Proudyogiki Vishwavidyalaya-452001, *Madhya Pradesh,* India
sonupatidar471@gmail.com

Abstract:

In the current research, formulation and evaluation of multi-purpose ointment was performed. The studies were conducted with an object to develop a desired ointment for treatment of Microbial infection, inflammation and pain. Main objective of this study is to formulate the ointment with oleaginous ointment bases having good consistency, diffusion, antimicrobial, analgesic and anti-inflammatory properties. To assess the efficacy of formulations microbial content, spreadibility, permeability, drug release, content uniformity, viscosity, solubility, stability, and other physical characteristics were evaluated. The ointment base was prepared and formulation of ointment was done by incorporating the active ingredients (lavender oil, eucalyptus oil and clove oil) in most effective ratio in the base by fusion method.Lavender oil is used as complementary medicine and possesses anti-inflammatory, anti-microbial and anti-oxidant properties. Eucalyptus oil has been reported effective in reducing pain, swelling and inflammation. Clove oil contains anti-microbial and analgesic properties. All these oils has potential therapeutic benefits due to their active constituents.

Keywords: Lavender oil, Eucalyptus oil, Clove oil

C-66

Formulation and Evaluation of Antibacterial Herbal Ointment

Debasmita Majumder, Soundarapandian Chidambaram and Oindrila Baishya[1]

Department of Pharmaceutics, Himalyan Pharmaceutical Industry, Majhitar-737136, Rangpo,
East Sikkim, India
[1]Netaji Subhas Chandra Bose Institute of Pharmacy, Chakdah, Nadia-741222, West Bengal,
India
debasmitamajumder19@gmail.com

Abstract:

This is a comprehensive study of herbal ointment formulation by using dried leaf powder of *Moringa oleifera.* At first *Moringa oleifera* leaf are dried and made it in a powder form. Then chemical study of the leaf powder was done and mixed with the ointment base, prepared. After formulation various types of evaluation parameter as like melting point, pH test, solubility test etc are done. The pH of the herbal ointment is 6.85 at 33.5^{0}C and melting point is 46^{0}C. The herbal ointment is not soluble in water, PEG, acetone but soluble in diethyl ether. Then microbiological study of herbal ointment was done to study antibacterial activity by cup and plate method. The results when compared with the standard drug Ciprofloxacin indicated that this herbal ointment can be used as a supplement.

Keywords: Ointment, *Moringa oleifera*,Antibacterial activity

C-67

Hepatoprotective Activity of Capparis zeylanica seeds against

CCl4 Induced Hepatic Damage in Albino rats

Shailju Gurunani, Rani Sutone, Kirti Bodhankar and Yogesh Gholse

Priyadarshini J.L.college of Pharmacy, Electronic Zone Building, MIDC, Nagpur-440016, India
shailjug@rediffmail.com

Abstract:

Liver disease is one of the serious health problems. Herbs play a major role in the management of various liver disorders. The present study was conducted to study protective efficacy of seeds of *Capparis zeylanica* (Capparidaceae) to treat hepatic diseases. Methanolic and butanolic extract of C.zeylanica was screened for hepatoprotective activity in carbon tetrachloride induced hepatoxicity in albino rats. The degree of protection was measured by estimating biochemical parameter like alkaline phosphotase, serum glutamate pyruvate transaminase (SGPT), serum glutamate oxaloacetate transaminase (SGOT), bilirubin content total protein. These biochemical observations were supplemented by histopathological studies of liver section. Results of the biochemical studies of blood samples of CCl4treated animals showed significant increase in the levels of serum enzyme activities, reflecting the liver injury centrilobular necrosis and vacuolization caused by CCl4, whereas blood samples from the animals treated with butanolic extracts showed significant decrease in the levels of serum markers as

compared to methanolic extract, indicating the protection of hepatic cells. The results revealed that buthanolic extract of C.zeylanica could afford significant dose-dependent protection against CCl4 induced hepatocellular injury.

Keywords: *Capparis zeylanica*, Hepatocellular injury, Biochemical studies, Hepatoprotective

C-68

Determination of Ethanol Content in Marketed Ayurvedic Formulations using Gas Chromatography

Harpreet Grover, *Mukesh Maithani, Vikas Gupta and Parveen Bansal*

University Center of Excellence in Research, Baba Farid University of Health Sciences, Faridkot-151203, Punjab, India
meharpreetgrover@rediffmail.com

Abstract:

Due to lack of stringent regulations and standards from regulatory authorities, Ayurvedic formulations available in the market are not properly standardized and assessed for their quality. Asava and arishta are very important fermented and commonly used dosage forms of Ayurveda. Information on the quantitative parameters of the ayurvedic fermented preparations is very poor. These formulations contain naturally self generated alcohol that acts as the medium for extraction of active ingredients of the herbs. Hence alcohol content becomes a point of concern as well as important parameter for standardization of the asava and arishta and it becomes important for manufacturers to mention alcohol content on the label. In addition, as per ASU GMP guidelines, it is mandatory to carry out the ethanol content to ensure the quality of the product. However manufacturers escape to comply the guidelines because of complexity, cost and time consuming available methods. This study is intended to develop a simple, efficient, less time consuming, economic and accurate gas chromatography method and estimate the ethanol content in marketed ayurvedic formulations of asava and arishta. The detection was carried out using flame ionization detector. The retention time for ethanol was found to be 1.53min. The correlation coefficient (r^2) of ethanol was found to be 0.9990. The limit of detection and limit of quantification was found to be 0.4 and 1.1µg/mL for ethanol. The % ethanol content obtained by the proposed method was found to be between 3.05% and 11.53%.

Keywords: Ethanol, Gas chromatography, Ayurvedic formulations, Asava, Arishta

C-69

Evaluation of *in vitro* anti-microbial activity of ethnaolic extracts of fruits of *Annona reticulata* against Standard Pathogenic Strains

Sujata Paul,Biswajit Dash, Bikash Gupta and Aditya Jyoti Bora

Girijananda Chowdhury Institute of Pharmaceutical Science, Azara, Guwahati, Assam-781017
paulsujata2609@gmail.com

Abstract:

Objective: To evaluate the anti-microbial activity of ethanolic extract of fruits of *Annona reticulate*(family-Annonaceae) in conjugation with phytochemical analysis. Methods: The ethanolic extract of fruits of *Annona reticulata* (family-Annonaceae) was prepared and analysed for phytochemical constituents using standard methods. The anti-microbial activity of the plant extract was examined against bacterial strains and fungal strains using disc diffusion method. Results:The present investigation shows the phytochemical analysis, anti-microbial activity of the ethanolic extract of the plant *Annona reticulata*. Various phytochemical analyses revealed the presence of alkaloids, saponin, flavonoids, carbohydrates, glycosides, steroids, proteins and amino acids and tannins. The anti-microbial activity of the ethanolic extract of the plant showed significant result against all the of the test organisms. Conclusion:The present study concluded that ethanolic extract of fruits of the *Annona reticulata* contain high presence of phytochemicals. The ethanolic extract of the plant was found to possess promising anti-microbial activity when compared with the standards.

Keywords: *Annona reticulata*, **Anti-microbial activity, Fruits, Disc diffusion method,** *Staphylococcus aureus, Streptococcus pyogenes, Pseudomonas aeruginosa*

C-70

TLC densitometry Fingerprinting development of extract of *Celastrus paniculatus Willd*

Ravindra Pandey, Shiv Shankar Shukla, Swarnlata Saraf and Shailendra Saraf

Columbia Institute of Pharmacy, Raipur, Chhattisgarh

Abstract:

In the present study, we have carried out standardization and High performance thin layer chromatography (HPTLC) fingerprinting analysis of the leaf of *Celastrus paniculatus*. In this context we observed various standardization parameters and developed their HPTLC profile.The Celastrine was well resolved on the precoated silica gel G 60 F 254 on aluminum sheets, the mobile phase was toluene: ethyl acetate (90:10, v/v) gave Rf values of 0.52±0.10 for Celastrine. The spot was resolved on the chromatogram that showed the good resolution. The peak areas of each standard were obtained from the software, and a calibration graph of concentration against peak area was plotted. A good linear relationship was obtained over a concentration range of 100-600 ng/spot of Celastrine. The correlation coefficient (r2) value was 0.996, indicates the good linearity between the concentration and peak area. The concentration of Celastrine present in raw material was found to be 2.2%± 0.17 w/w in *Celastrus paniculatus*. The developed HPTLC technique is a precise, specific, accurate and robust for the determination of Celastrine.

Keywords:High performance thin layer chromatography, Standardization, Celastrus paniculatus, Celastrine

C-71

Design and Development of Herbal Antiseptic Gel using Ficus Extract

Mahima Shinde, Ashwin Patidar, Ankita Dubey and Sanjay Jain

Department of Pharmaceutics, Indore Institute of Pharmacy, Indore-452001, M.P.
mahimashinde2007@gmail.com

Abstract:

In the present investigation antiseptic gel containing herbal extract was prepared and optimized. The gel was prepared using alcoholic extract of*Ficus religiosa* (L.). The gel was optimized on basis of different concentration of gelling agent and concentration of extract. The optimization was done by evolutionary operation method (EVOP). Total 10 batches were prepared by careful planning and changing the small concentration of extract and gelling agent. The gelling agent used is Carbapol 934. The prepared gels were characterized on basis of pH, viscosity, Spreadability, extrudability, % drug release, skin irritation test and antimicrobial activity. The pH of gel was obtained in range of 5-7 the spreadability was good and extrudability is more than 92 %. The viscosity of all formulation was within range of 600-750 cp and there is no irritation sign are observed. On basis of results obtained, FG_4 was found to be optimized. The results of antimicrobial studies revealed that optimized formulation is better than the marketed formulation hence the optimized formulation may be used as alternate dosage form.

Keywords: Gel, Antiseptic, ***Ficus religiosa*** **(L.), Antimicrobial studies, EVOP**

C-72

Validation and Chemical Fingerprinting Development of Hamalinein *Peganum harmala*

Shiv Shankar Shukla, Ravindra Pandey, Swarnalata Saraf and Shailendra Saraf

Columbia Institute of Pharmacy, Raipur, Chhattisgarh

Abstract:

In India great deals of in depth knowledge exist among general public about the traditional use of herbal medicine. In the present study, we have carried out standardization and High performance liquid chromatography (HPLC) fingerprinting analysis of the of *Peganum harmala*. This is in addition to organized Indian system of medicine -ayurveda, which has already gained world wide attention. To ensure the safety and efficacy of herbal medicines; standardization and development of quality protocols for herbal plant is extremely important. The Chromatographic separation of samples was achieved by a reversed-phase HPLC column Merck's using acetonitrile:water:methanol in the proportion (3:5.2:1 v/v) mobile phase with flow rate 1.2mL min^{-1}. Serial dilutions containing 3-18 µg/ml Harmaline in methanol were prepared from a stocksolution of Harmaline(10 mg/100ml). Retention time of Harmalinewas observed to be 4.20 min. The method was demonstrated for the standardization, quality control parameters and chemical fingerprint development of Harmaline in plants and some commercial poly-herbal formulations.

Keywords:*Peganum harmala,* **Hamaline, Fingerprint, Validation**

C-74

Novel Drug Development and Evaluation of Topical Liposomes for Treatment of Skin Diseases

Kamra Manju, Satish Sardana and Diwan Anupama

Hindu College of Pharmacy, Sonepat 131001, Haryana, India
Apeejay Stya University, Sohna Palwal Road, Gurgaon,

Haryana, India
kamramanju@yahoo.com

Abstract:

Liposomal formulations have been successfully used in the treatment of a number of dermatological diseases .In this present research work benzoyl peroxide alongwith a herbal drug Resveratrol was encapsulated into liposomes, for topical applications .Liposomes were prepared by thin film hydration technique using phospholipid, cholesterol and solvents in different ratios. Various formulations were optimized by using response surface experimental design (Box Behnkem design). Formulations were prepared and evaluated for the entrapment efficiency (EE%) of both benzoyl peroxide and resveratrol. The optimized formulations were evaluated for, particle size, zeta potential , FT -IR, XRD and TEM etc. The particle size with PDI value less than 0.3 indicated uniform particle size distribution , –ve zeta potential indicated Brownian motion stability between the particles andTEM showed the presence of outer coating of bilipid layer entrapping the drugs with an optimum size in the range of 150-350 nm.Liposomal suspension was lyophilized to make it more stable.

Keywords: Benzoyl peroxide, Topical, Resveratrol

C-75

Ethnopharmacological reports on *Ananas comosus*

Virender Kumar, Vandana Garg and Harish Dureja

Department of Pharmaceutical Sciences, M.D University Rohtak-124001, Haryana, India
sachdeva.virender5@gmail.com

Abstract:

Traditional medicines are originated from plants that do not form the constituents of routine diet. However, most of the medicinal plants have not received proper scientific scrutiny. *Ananas comosus* is one such plant. A periennial of the Bromeliaceae family with short stem and usually spiny-edged leaves, 30–100 cm long and arranged in a rosette. Offshoots with small rosettes of leaves arise in the axils of the large leaves and serve to propagate the plant vegetatively. Bromelain, a main proteolytic enzyme obtained from the pineapple plant. It also contains calcium, potassium, magnesium, fiber and vitamins.Various *in vitro* and *in vivo* studies from literature demonstrated that it possess different properties which include interference with growth of malignant cells, inhibition of platelet aggregation, fibrinolytic activity, antiinflammatory action; skin debridement properties.

Keywords: Bromelain, Cancer, Cytotoxic

C-76

Evaluation of In Vitro Antiplasmodial Activity of *Ficus benzamina* and *Ficus deltoidea* against 3D7 Laboratory Isolated Strains of *Plasmodium falciparum*

Amandeep Singh and Hayat M. Mukhtar

Research scholar, Faculty of Pharmaceutical Sciences, IKG Punjab Technical University, Punjab, India
amandeepkcp@gmail.com

Abstract:

Malaria is infectious vector born disease affecting 212 million people belonging to 97 countries globally in the year 2016. Although this number has reduced progressively from last one decade but recent failure of currently available antimalarial drug therapy have accentuated the urgent need to explore different novel approaches in antiplasmodial drug discovery. The aim of the present study was to evaluate the antiplasmodial activity of traditional medicinal plants *Ficus deltoidea* and *Ficus benzamina*. Crude petroleum ether and hydroalcoholic extract of both the plant species were evaluated for antiplasmodial activity by schizont maturation inhibition assay using 3D7 *plasmodium* strains. It was observed that petroleum ether extract of *F. benzamina* leaves showed most promising inhibitory effect on the growth of schizonts with IC_{50} 14.5 µg/ml. Bio-assay guided fractionation of pet ether extract of *F. benzamina* led to the hexane and chloroform fraction with high antiplasmodial activity (IC_{50} 4.0 µg/ml and IC_{50} 7.8 µg/ml respectively). Further, phytochemical investigation of *F. benzamina* indicated the presence of various valuable phytochemicals belonging to class of steroids, terpenoids and phytosterols. This study has revealed the antiplasmodial activity of *F. deltoidea* and *F. benzamina* for the first time. Significant antiplasmodial activity and pre- liminary phytochemical studies of *F. benzamina* indicates its rich chemical diversity which make this plant a good candidate for isolating new molecule that could serve as new lead in antiplasmodial drug discovery.

Keywords: Malaria; antiplasmodial; Schizont maturation inhibition assay; Ficus deltoidea; Ficus benzamina; Bioassay guided fractionation.

C-77

Anti-Inflammatory Activity of Poly-Herbal Gel against Carrageenan induced Paw edema in Rat

Bafna SR, Shirolkar SV and Popat RR

D. Y. Patil Institute of Pharmaceutical Science and Research, Pimpri, Pune-411033, Maharashtra, India

Abstract:

Inflammatory diseases including different types of rheumatic diseases are a major cause of morbidity of the working force throughout world. This has been called the 'King of Human Miseries. Inflammation is defined as local response of living mammalian tissue, to injury due to any agent. The plant *Vietx negundo*, *Menthapiperita* and *Azadirchtaindica* were selected for the preparation of poly-herbal gel. The Anti-inflammatory activity of leaves of all the plants is already reported. The ethanolic exact was prepared for the formulation. By using gelling agent, solvents and preservative the formulation was prepared. The different concentration of gel was formulated. The carrageenan induced paw oedema in rat method was preferred (0.1 ml of 1% w/v carrageenan was used). The results showed that the anti-inflammatory effect of the formulation containing different concentration of the poly herbal gel was equivalent to the effect of standard gel (Diclofenac sodium). The data presented in this study demonstrate that the reported herbal drugs possess significant topical anti-inflammatory properties, supporting their traditional use for the treatment. Indeed, their extracts were able to inhibit the inflammatory activity on topical application.

C-78

Formulation and Evalution of Emulgel Using Oils Containing Poly Unsaturated Fatty Acid in Wound Healing

Shraddha Jadhao, Amar Methe and Asha Thomas

Department of Quality Assurance Technique, Dr. D. Y.Patil. Institute of Pharmaceutical Sciences and Reasearch, Pimpri Pune-411018, India
shraddhjadhao79@gmail.com

Abstract:

The present study demonstrates the potential of emulgel employing biodegradable carbopol-934 as the polymeric matrix incorporated with natural oil which is rich in polyunsaturated fatty acids as evidenced through GC-MS studies. The emulgel systems exhibited acceptable pH for topical application with good spreadability and film forming ability, adequate rheological properties, stability and efficient water loss capability indicating its application in treatment of exudating wounds.

In the *in vivo* excision wound model in rat, the formulation exhibited significant wound contraction with faster reepithilisation comparable to standard silver sulfadiazine 0.5% treated group. Histopathological examinations exhibited intense disposition of collagen fibers with active fibroblasts indicating their potential in accelerating the wound healing process. GC-MS analysis of oils confirmed the presence of PUFA like oleic, linoleic, linseed oil that are beneficial in wound healing and skin tissue regeneration. However the synergistic effect of the PUFA's present in the oil may also have contributed to their significant wound healing properties. Further safety and efficacy studies in suitable pre-clinical models with emphasis on their mechanistic aspects in accelerating wound healing needs to be evaluated.

Keywords: Carbopol, Emulgel, Excision wound healing model, Natural oil, Polyunsaturated fatty acids

C-79

Preliminary Phytochemical Screening and Antioxidant activity of Hydro alcoholic extract of Stem of the plant *Basella Alba*, Family-Basellaceae

Imdadul Haque Chaudhury, Pulak Deb and Sumit Das

Girijananda Chowdhury Institute of Pharmaceutical Science, Azara, Guwahati- 781017, India
imdadbeing007@gmail.com

Abstract:

Medicinal plants constitute an important natural wealth of a country. They play a significant role in providing primary health care services to rural people. They serve as therapeutic agents as well as important raw materials for the manufacturing of traditional and modern medicine.The main objective of the present study was to evaluate the phytochemical screening and antioxidant activity of hydro-alcoholic extract of the stem of the plant *Basella alba* (Family-Basellaceae). Phytochemical screening of the hydro-alcoholic extract was evaluated in search of phenolic compound. The in vitro antioxidant model studies are assay of reducing power by Potassium ferricynide method and Thiobarbituric acid assay according to the method of Kikuzaki and Nakatani. In reducing power test 1ml of hydro-alcoholic extract (20-100µg/ml), standard ascorbic acid dilutions (20-100µg/ml) and control sample (1ml distilled water instead of sample solution) was tested. The absorbance was measured at 700nm. In TBA test the absorbance of the supernatant was measured at 532 nm. Phytochemical screening was done where presence of Alkaloid, Phenol, Glycoside, Protein, Flavonoid and Saponin were found. Phenolic compounds are responsible for antioxidant properties. In case of the antioxidant activity,

reducing power test of the extract shows increase in the absorbance which indicates increase in the reducing power and also possess TBA assay activity. The present study shows that the hydro-alcoholic extract of stem of the plant *Basella alba* contains high amount of antioxidant activity.

Keywords: *Basella alba*, **Antioxidant activity, Reducing power, TBA assay**

C-80

Development of Novel Niosomes as Drug Delivery System of *Spermacoce hispida* extract and *In Vitro* Antituberculosis activity

Durgadas Anghore and Giriraj T. Kulkarni

Department of Pharmaceutical Chemistry, ISF College of Pharmacy, Moga (Punjab), IndiaDepartment of Pharmaceutics, Amity Institute of Pharmacy, Amity University, Sector 125, Noida 201301 (UP), India

Abstract:

Tuberculosis bacilli has a highly lipoidal cell was, which makes penetration of drugs into the cells difficult leading to development of resistance, which can be overcome by the use of nanonized niosomal delivery system. Many plants of genus Spermacoce have exhibited antibuberculosis activity, which is not tested for *S. hispida*. The aim of the present study was to study the antituberculosis activity of Spermacoce hispida extracts and develops nnovel nano noisome based drug delivery system for the extract of Spermacoce hispida to enhance antituberculosis activity. Thin film hydration technique was employed for preparation of herbal nano niosomes using different non-ionic surfactants (Span 40 and span 60), cholesterol and suitable solvents. Characterization of niosomes was done using photo micrographs, transmission electron microscopy (TEM), entrapment efficiency, in vitro drug release, physical stability and in vitro antituberculosis activity. Nano niosomes were found to be spherical in shape, which was confirmed by photomicrograph. In the preparation of calibration curve, the extract was found to obey Beer's law in range of 20-50 µg/ mL. Transmission electron micrographs were obtained for selected batches (SCE3, SCE5, SCE6). The vesicles were of varied size 2-3 µm, 1-2 µm and 3-4 µm, respectively. The drug entrapment efficiency for niosomes was observed in the range of 23.4±0.404 to 82.5±0.472 percent. In the sedimentation studies, the niosomes of three batches (SCE4, SCE5 and SCE6) took 75 days to settle. The release of drug from niosomes containing Span 40 was 51% and Span 60 was 53% in 200 min. It was observed that formulation SCE 3 (71±0.351-50±0.528), showed higher stability over the formulation SCE 5 (57±0.432-49±0.642), SCE 6 (59±0.565-33±0.212). Colour changes were not found in all formulations after twelve weeks. In the *in vitro* antituberculosis activity, formulations SCE3 and SCE6 were effective at 12.5 µg/mL, while SCE5 was effective at 25 µg/mL, which was better than the chloroform extract. The developed niosomal nano-carrier system exhibited prolonged release of drug and enhanced the *in-vitro* antituberculosis activity of *Spermacoce hispida* extract.

Keywords:*Spermacoce hispida*, **niosomes, nano-carrier, non-ionic surfactant, herbal drug delivery system**

C-81

Evaluation of Anti-Diabetic activity of *Cocculus hirsutus*on STZ and Stress induced Diabetic Rats

AL.Harini, S.Divya bala and S.Manohar Babu

Department of Pharmacology, Sims College of Pharmacy, Acharya Nagarjuna University, Andhra Pradesh-522001, India lakshmiharini12@gmail.com.

Abstract:

Diabetes mellitus is a metabolic disorder constituting a major health concern today whose prevalence has continuously increased worldwide over the past few decades. Moreover, it has been considered as an incurable metabolic disorder affecting about 2.8% of the global population. .STZ-induced diabetes is one of the widely used model to induce Type I diabetes mellitus in the the experimental animals. STZ has been found to be selectively toxic to pancreatic beta cells as it preferentially accumulates in the beta cells as glucose analogues. *Cocculus hirsutus* is a perennial, twinning shrub that belongs to family Menispermaceae. In India this plant is found throughout tropical and sub-tropical parts. The plant root causes sweat, loosen stools and increase bowel movements and restores normal health. The leaves juice is given to treat leucorrhoea, gonorrhoea, tiredness, fever and diseases that are caused due to excess heat inside body. This medicinal plant is used from time immemorial for treatment of various diseases across India, Africa and China. Synonym of this broom creeper.Also called as patalagarudi, Jalajamani.A decoction or macerated leaves of the plant is used traditionally for the treatment, management and/or control of variety of human ailment including Diabetes ,rheumatism, fever, Skin infections &Eczema. The roots of the plant is used as diuretic & laxative.Preliminary phytochemical screening of ethanolic root extract presence of alkaloids, phenolic compounds, flavonoids, glycosides, and carbohydrates. Alkloids were present in chloroform, benzene, methanolic and

water extract. Fasting blood glucose levels were within range of 90-105mg/dl in all groups at 0th day repeated treatment with the doses of the *Cocculus hirsutus* Extract(CHE) (200 and 400mg/kg body wt) significantly decrease the blood glucose level on 7th day,14th and 21st day, indicating that the extract produce significant hypoglycemic activity after repeated administration in both STZ induced & Stress induced rats.

Keywords: STZ, *Cocculus hirsutus*, **Alkaloids**

C-82

Evaluation of Antiasthmatic Activity of *Berleria prionitis* and *Lawsonia inermis*

Snehal S. Manekar, M. S. Charde and P. N. Dhabale

Government College of pharmacy, Amravati- 444601, Maharashtra, India
Snehal.manekar@gmail.com

Abstract:

Over the past decade, herbal and ayurvedic drugs have become a subject of world importance, with both medicinal and economical implications. Thus, a proper scientific evidence or assessment has become the criteria for acceptance of herbal health claims. The whole plantof *Berleria prionitis* (Acanthaceae) and roots of *Lawsonia inermis* (Lythraceae) is widely used in remedies for bronchitis and asthma. The present study designed to evaluate the antiasthmatic activity of various extract of aerial part of *Berleria prionitis* and *Lawsonia inermis* in the isolated goat tracheal chain preparation. Histamine induced contraction in isolated goat tracheal chain showed that Hydroalcoholic extract of *Berleria prionitis* and Methanolic extract of *Lawsonia inermis* inhibited the contractile effect of histamine (P >0.05).

Keywords: Antiasthmatic activity, *Berleria prionitis, Lawsonia inermis*

C-83

Dissolution Enhancement of Curcuminoids by Solid Dispersion

Amit Patel andShachi Patel

Department of Pharmaceutics and Pharmaceutical Technology, Ramanbhai Patel College of Pharmacy, Charotar University of Science and Technology, changa-388421, Gujarat, India
amitpatel.ph@charusat.ac.in

Abstract:

Neurodegenerative diseases are hereditary and sporadic conditions which are characterized by progressive nervous system dysfunction. There are currently no therapies available to cure neurodegeneration. For each of the diseases, medication can only alleviate symptoms and help to improve patients' quality of life. Previous interventions suggest that, dietary or herbal supplements may benefit cognition and possibly interrupt the accumulation of abnormal amyloid protein deposits in the brain. Turmeric has been strongly recommended in Ayurveda for the treatment of a multitude of illnesses, such as potent anticarcinogenic, antilipidogenic, cardioprotective as well as neuroprotective properties. Curcuminoids are the primary polyphenolicphytoconstituents present in the turmeric rhizome (Curcuma Longa; Family: Zingiberaceae), may have both cognitive-enhancing and anti-amyloid properties. Curcuminoids are basically composed of Curcumin, demethoxycurcuminand (diferuloylmethane) bisdemethoxycurcumin, that has been associated with antioxidant and neuroprotective activities as indicated by over 6,000 citations. One of the major problems with curcuminoids is perceived to be the bioavailability. Primary objective of present study is to enhance dissolution and ultimately oral bioavailability of curcuminoids extract using solid dispersion technique by melting method using different grade of Poly ethylene glycol using natural super disintegrating psyllium husk and synthetic super disintegrating agent. Trial using different grades of psyllium husk (40#, 60# and 100#) and different excipients combination were taken. The formulations were characterized by compatibility study, *in vitro* dissolution rate studies and the test as per Indian pharmacopoeia. The solid dispersion prepared using natural super disintegrating agent demonstrated higher dissolution rate compare to synthetic super disintegrating agent.

Key Words: Neurodegenerative diseases, Curcuminoids, Solid dispersion,Psyllium husk.

C-84

In-vitro Cysteine Protease inhibition assay for different fractions of *Nyctanthus arbor tristis* Linn. Leaves

HemangMehta, Shruti Vekariya and Jigna Vadalia

Department of Pharmaceutical Sciences, Saurashtra University, Rajkot-360005, Gujarat, India
hemangmehta033@gmail.com

Abstract:

Cysteine proteases are responsible for many biochemical processes occurring in living organism and they have been

implicated in the development and progression of several diseases that involve abnormal protein turnover. Recent studies have shown that plasmodium expresses three papain family cysteine protease, known as falcipains, which play a key role in haemoglobin degradation, a necessary function of erytrocytic trophozoites. The present study was undertaken to evaluate cysteine protease inhibitory activity of *Nyctanthus arbor-tristis*. Successive fractions of methanolic extract of *Nyctanthus arbor-tristis* leaves were taken for measuring the cysteine protease inhibitory action through IC_{50} value by non-linear regression curve of enzyme. All methanolic fractions of *Nyctanthus arbor-tristis* show cysteine protease inhibition activity but ethyl acetate fraction was showed the maximal activity (85.59%, IC_{50}-6.76µg/ml). It is concluded that inhibitor of cysteine protease in *Nyctanthus arbor-tristis* leaf are indicator of wide range of pharmacological activities such as anti-cancer, anti-malarial, osteoporosis, osteoarthritis etc. Isolation of cysteine protease inhibitor may provide lead compound for development of therapeutic agents in above areas.

Keywords:*Nyctanthus arbor-tristis*, **Falcipain, Cysteine protease inhibitor**

C-85

Bioactivity Guided fractionation of Prickles of *Bombax Ceiba linn.*for *In-vitro* Antimicrobial activity with reference to *Acne vulgaris*

DarshanVasani, Nikunja Bavishi and Jigna Vadalia.

Department of Pharmaceutical Sciences, Saurashtra University, Rajkot -360005, Gujarat, India.
vasanidarshan2601@gmail.com

Abstract:

Acne is a cutaneous, pleomorphic disorder of pilosebaceous gland. Due to side effect of current therapy and development of resistance by microbes for frequently used antibiotics which leads to treatment failure. Hence develops a need to identify constituent with antiacne properties. This plant is official in ayurvedic pharmacopeia and is recommended for treatment of acne. The prickles were collected and verified by the botanist and then dried, powdered and extracted using various solvents like petroleum ether, chloroform, ethyl acetate, methanol, hydroalcoholic mixture. The *In-vitro* antimicrobial activity of prickle extracts were preliminarily screened by agar diffusion method and then most potent fraction was selected for bioautography to identify the principle responsible for antimicrobial activity. Based on above mentioned method ethyl acetate extract and its n-butanol fraction was found to be sensitive against *Propionibacterium acne* than all other extracts and bioautography of n-butanol extract was carried out for anti-microbial activity and compared with standard quercetin to identify active phytoconstituent. The present study was carried out to evaluate the *In-vitro* anti-microbial activity of extracts of prickles of *Bombax ceiba* portrayed by different microbial species with reference to acne vulgaris.

Keywords: *Bombax ceiba,* **Acne,** *In-vitro* **anti-microbial activity, Bioautography**

C-86

Bioactivity guided fractionation of *Momordica charantia* Linn. fruit for its Anthelmintic Activity

Riddhi Gorasiya, Vinav K. Gandhi and Jigna Vadalia

Department of Pharmaceutical Sciences, Saurashtra University, Rajkot-360005, Gujarat, India
riddhigorasiya@gmail.com

Abstract:

Anthelmintic drugs are used to eradicate or reduce the number of helminthic parasites in the intestinal tract or body tissue. Ancient literature has prescribed various herbs as an anthelmintic agent like *Allium sativum, Adhatoda vasaka, Swertia chirata, Momordica charantia* and many others. *Momordica charantia* is in use since a long time in Ayurveda as stomachic, laxative, ulcer, anthelmintic and many more. The present study was performed to standardise and evaluate the anthelmintic activity of fruit of *Momordica charantia Linn*. using extracts of *Momordica charantia* and various fractions of most active extract. The fruits were collected and authentified by botanist as a fruit of *Momordica charantia* and were dried, powdered and extraction was carried out using different solvent like petroleum ether, chloroform, ethyl acetate, methanol and water. The anthelmintic activity study was performed by treating worms (*Eisenia fetida*) with different extract and its different fractions and estimating the death time of earthworms, using different concentrations 5mg/ml and 10mg/ml and Albendazole as standard. Based on this method the worms were found to be more susceptible to chloroform extract and its dichloromethane fraction. The present study suggested that crude extract shows more susceptibility as compare to all liquid fractions.

Keywords:*Momordica charantia*, **Anthelmintic activity, Chloroform fraction**

C-87

Development and Optimization of Polyherbal

formulation for the Treatment of Alopecia

Sumita Singh, Vaishali M. Patil, Kapil Kalra, Umesh Kumar Singh and Kunal Arora

Uttarakhand Technical Universiry, Uttrakhand, India
Kharvel Subharti College of Pharmacy, SVSU, Meerut, India

Abstract:

Presently available therapies for treatment and management of alopecia are antiandrogens and biological response modifiers. On the other hand, the low success rate and linked adverse effects limits their clinical use. Nowadays natural products and about many kinds of extracts from plant investigated for hair growth activity. Various plants and herbal formulations reported as hair growth supporter as well as used for enrichment of hair quality in traditional Indian system of medicine, but being deficient in sound scientific hold and information confines their use. Alopecia is the scientific term for hair loss or baldness. Hair is among the valuable parts of the physique derived from ectoderm of the skin and is a protective appendage on the physique. Humans have hairs that serve principle position of their lives. From the historic times, hairs had been a magnificence symbols for both men and women. On a daily basis, the hair falls out of the head, specifically throughout washing and brushing. 70-100 hairs loss a day is a very common; however, dropping over 100 hairs a day lasting longer than a couple of weeks indicates a serious problem. Hair is composed of keratin with chemical constituents such as carbon (C), hydrogen (H), nitrogen (N), sulfur (S), and oxygen (O). Herbal medicine remains largely an unproven, inexact science. Although the herbal medicinal history provides decades, sometimes centuries, of anecdotal information, scientific study of herbal medicine is relatively new. The U.S. Department of Health and Human Service's NCCAM (National Center for Complimentary and Alternative Medicine) has only been in operation since 1992. Compared to the Federal Food and Drug Administration (FDA), which was founded over 100 years ago, NCCAM has only begun to scratch the surface of scientific research.Despite the criticism of herbal medicine among mainstream medical professionals, it is wise to remember that many common drugs we use today were derived from plant-based sources. There are a number advantages associated with using herbal medicines as opposed to pharmaceutical products such as reduced risk of side effects, effectives with chronic conditions, lower cost, widespread availability etc.

C-88

Trapa species: A Magic Herbal Remedy for Future

Majee Chandana, Mazumder Rupa and Mazumder Avijit

Pharmacy Institute, Noida Institute of Engineering and Technology, 19 Knowledge Park-II, Greater Noida, Uttar Pradesh- 201 306, India

Abstract:

Natural products and their related moieties have historically been an incredible source of therapeutic agents. Current lead generation strategies have led to a renewed interest in natural products in the field of drug discovery. There are large no of plants belong to the Trapace orLythraceaefamily which can be used worldwide. The most important medicinal plant under trapa species are *T. natans*,*T. bicornis*, *T. rossica*. InIndian Ayurvedic system *Trapa bispinosa or Trapa natans* is an important plant of medicine, which is used in the problems of stomach, liver, kidney, and spleen. It is used as astringent, stomachic, diuretic, febrifuge, and antiseptic.The whole plant is used in gonorrhea, menorrhagia, and other genital affections. This plant is also useful in diarrhea, dysentery, ulcers and wounds. From the various experimental studies conducted, Trapa species was found to possess analgesic, anti inflammatory, neuroprotective,antioxidant activityimunomodulatory and antidiabetic activity*T. bicornis's* flowers is used as astringent in fluxes, the fruits is used in the treatment of fever and sunstroke. This plant is beneficial for the spleen and stomach, invigorate the kidney, and edible for treating lung and stomach cancer, rectal cancer and carcinoma of urinary bladder. Chemical analysis of the fruit and fresh nuts reveals water content, tannins, flavonids, glycosides citric acid and fresh fruit which substantiates its importance as dietary food also reported low crude lipid, and major mineral present as an iron and manganese potassium were contained in the fruit.Thus, this review will lead to a break through for exploration of this species for its therapeutic potentiality by researchers and development of newer agents to treat various diseases.

C-89

Antipyretic Potential of Ethanolic Extract of *Pergularia daemia* Forssk (*Asclepiadaceae*) Leaf

Pallavi, Goutam Kumar Jana, Juli Khanda and Santosh Kumar Mohapatra

Gayatri College of Pharmacy, Department of Pharmacognosy, Jamadarpali, Sason, Sambalpur, 768200, India
goutamkjana@gmail.com

Abstract:

Plants form an integral part of nature and primary source

of important necessities of life, like food, clothing, shelter and a host of other useful production. India has an ancient heritage of traditional medicine. Nature always stands as a golden mark to exemplify the outstanding phenomenon of symbiosis. The biotic and abiotic elements of nature are all interdependent. On the basis of ethnomedicinal use, antipyretic activity of ethanolic extract of the plant *Pergularia daemia* Forssk (*Asclepiadaceae*)leaf has been investigated in albino rats by yeast induced pyrexia methods. Normal body temperature is regulated by a centre in the hypothalamus that ensures a balance between heat loss and production. Fever occurs when there is a disturbance of this hypothalamic 'thermostat', which leads to the set-point of body temperature being raised. Once there has been a return to the normal set-point, temperature regulating mechanism (dilatation of superficial blood vessels, sweating etc.) operates to reduce temperature. The study was carried out by using dose of 500 mg/kg orally. Experimental results exhibited that ethanol extract of *Pergularia daemia* Forssk, possess a significant antipyretic effect. After inducing 15% w/v suspension of yeast (1ml/100gm body weight), temperature of experimental animal was increased. Then ethanol extract of the drug was induced into albino rats, which shows significant results. It was observed that ethanol extract at a dose of 500 mg/kg body weight showed maximum antipyretic activity amongst other extracts which is statistically significant as the value of $p<0.05$.

Keyword: Antipyretic, paracetamol, ***Pergularia daemia,*** **Ethanol extract**

C-90

Pharmacognostical Standardization of the Aerial parts of *Eriosema chinense* Vogel

Krihungi Smith, Damiki Laloo, Parag Kumar Sarma and Satyendra K. Prasad[a]

Department of Pharmacognosy, Girijananda Chowdhury Institute of Pharmaceutical Science, Guwahati-781017, Assam, Inia
[a]Department of Pharmaceutical Sciences, R.T.M., Nagpur University, Nagpur-440033, India
krihungi64@gmail.com

Abstract:

The plant *Eriosema chinense* (Family-Leguminosae) is mainly distributed over China and the Eastern Himalayan region of India and is also found in countries like Thailand, Myanmar and Australia. Traditionally, the roots of the plant are used for the treatment of diarrhea by the tribal people of North East India. In the present study, an attempt was made to evaluate the standardization of the aerial parts from plant *Eriosema chinense* based on morphological, histological, physicochemical parameters and fluorescence powdered drug analysis. Morphological, microscopical characters and powdered drug analysis of the aerial parts of EC were evaluated based on the standard methods available in the literature. Physicochemical parameters were evaluated as per the methods provided in WHO-2002 guidelines.The stem of the plant is 30-50 cm in height, slender, erect, woody, little branched, and densely hairy. Leaflets are simple linear-liguate, and 2.5-5cm in length. The flowers are yellow and borne in leaf-axils. The pods are oblong (2cm) and densely hairy. Histologically, leaf of EC is isobilateral with multiple unicellular covering trichomes abundant in the lower parts. T.S through the lamina showed a U-shape appearance with parenchymatous cell layer on the inner side surrounded by collenchymatous cells on the outer side. The stem part is less pubescence and showed the presence of a single layer of epidermis, followed by cortex and continuous vascular bundle with lignified xylem and phloem fibres and the centre portion pith is made up of thick parenchymatous cells. Physicochemical standards quantified are foreign matter (2.864%w/w), loss on drying (5.91%w/w), total ash (4.5%w/w), acid insoluble ash (0.54%w/w), water soluble ash (2.6%w/w), alcohol soluble extractive (8%w/w), water soluble extractive (3%w/w), foaming index (below 100).The present study will provide essential information in regards with the generic identification of the plant and will also maintain the pharmacognostical importance.

Keywords: ***Eriosema chinense,*** **Pharmacognosy, Physicochemical parameters**

C-91

Herbal Galactagogue: An Ideal Milk Supplement

Hitesh Ahluwalia and Milind Parle

Department of Pharm. Sciences,Guru Jambheshwar University of Science and Technology
Hisar-125001 (Haryana), India

Abstract:

After operation flood India saw an exponential growth in its milk production from 22-milliontonne in 1970 to 156-milliontonne in 2015-16. Although India is the world leader in milk production but still the per capita availability is limited to 337grams/day which is very less compared to states like Punjab and Haryana(1032 and 877g/day respectively).Milk

production is hindered by many diseases and factors such as mastitis, hypogalactia, decrease in dry matter intake, heat stress, etc. Herbal Galactagogues are helpful in these conditions as they help to bring back original milk yield and sometimes even enhances milk production. Herbal Galactagogue is referred to as a herb or a combination of herb which alone or jointly increases milk production. Some herbs which are used as galactagogues are Shatavari, Ashwagandha, Jivanti, Jatamansi& Vidari Kand. One such commercial product in market is lactomax(LTMX) .Combination of these herbs consists of such properties which make an ideal galactagogue. This combination shows phytoestrogenic effect, helps in increasing dry matter intake, provides anti-oxidants-which helps in recovering mammary tissues, cures irregular letting down of milk & increases lactogenic hormone. So herbal galactagogues can be summed up as a perfect solution to increase the milk production and take India to new heights.

C-92

Anti-inflammatory activity of *Diospyros melanoxyon* Roxb. (Ebenaceae) bark in rat

Chandrashekhar Sahu, Goutam Kumar Jana and Ram Kumar Sahu

[1]Royal College of Pharmacy Science, Raipur, C.G., India
csahu38@gmail.com

Abstract:

In present study the methanolic extract of bark of *Diospyros melanoxylon Roxb*. (Ebenaceae) was screened from anti-inflammatory activity in carrageenan induced paw oedema rats. The effect was assessed by difference in paw oedema volume, before and after the low & high dose administration of the extract in rats. Methanolic extract of *D. melanoxylon* (100 & 300 mg/kg) were administered orally. Anti-inflammatory effects were compared with standard drug Ibuprofen (160 mg/kg). These observations helped us to conclude that methanolic extract high dose is endowed with anti-inflammatory property.

Keywords: *Diospyros melanoxylon Roxb.*, **Anti-inflammatory, Methanolic extract**

C-93

Comparative Antimicrobial activity of *Cleome Gynandra* and Its Egg Albumin Loaded Microsphere

S.Sribhuvaneswari, T.Thenmozhi C.Selvinthanuja, T.Sivakumar

Department of Pharmacognosy, Nandha College of Pharmacy, Erode -52, Tamilnadu.
s.sribhu@gmail.com

Abstract:

Herbal extract are formulated as novel drug delivery system. Delivering the drug to the target using natural biodegradable polymer become a prominent research. Target specificity can be achieved through formulating the herbal constituent as microspheres, liposomes, nanoparticles. Herbal constituents formulated as microspheres using egg albumin polymer become significant study since egg albumin microsphere has several advantages such as biocompatibility, reduction in adverse drug reaction, higher stability, constant and prolonged therapeutic effect and controlled and target release. The plant *Cleome gynandra* possess wide variety of applications such as anthelmintic, treating gastrointestinal disorder and antimicrobial activities. Hence this was formulated as egg albumin microspheres and studied for their antimicrobial activity. The present study discusses the comparison of antimicrobial activity of *Cleome gynandra* and it's egg albumin microsphere. Leaf extract was prepared by boiling leaves with distilled water and the extract evaporated to get residue. Microspheres were prepared by dispersing the leaf extract in egg albumin by solvent evaporation technique. Microspheres obtained in that way was spherical, free flowing and in the size range of 50-100µm. The comparative antimicrobial study was performed by paper disc diffusion method on leaf extract and its microsphere. The results showed that the egg albumin loaded microsphere had good antimicrobial activity compared to leaf extract.

Keywords: Microsphere, Paper disc diffusion, *Cleome gynandra*

C-94

Isolation of Polysaccharides From the Flower of *Cucurbita maxima* and Screening its Potency Towards Antioxidant and Antimicrobial Activities

Nasreen Ahmed, Debaprotim Dasgupta, Anamul Hassan and Shahina k. choudhury

Department of Pharmacognosy, Girijananda Chowdhury Institute of Pharmaceutical Science, Guwahati-781017, Assam
nasreen.1234g@gmail.com

Abstract:

The present investigation evaluates the antimicrobial

and antioxidant potential of polysaccharides extracted from Cucurbita maxima (CM) flower of family cucurbitaceae. CM is a rich ethnomedicinal plant with wide range of medicinal propertiesconfirmed through literature reviews. The dried flower was first defatted with petroleum ether and then extracted with methanol to remove the saponins. Then the marc was soaked in double distilled water for 5-6 h at 80oC. The resulting slurry was concentrated and poured into thrice the volume of acetone. The precipitated polysaccharides were dried, purified with sephadex column chromatography and then carried forward forphytochemical screening, antimicrobial and antioxidant activities. The antimicrobialsusceptibility studies were conducted against gram (-) and gram (+) bacteria for zone of inhibition and Minimum inhibitory concentration (MIC) by taking Lincomycin as the standard drug. The antioxidantactivity was performed through reducing power, ferric thiocyanate and thiobarbituric acidmethods by considering ascorbic acid as standard.The isolated polysaccharides was also tested for antimicrobial activity and was found to be sensitive for 24 strains out of 39 strains of Gram +tive bacteria (Zone diameter 14-20 mm) and 33 strains out of 43 strains of Gram –tive bacteria at 128-256 µg/ml concentration which is a good sign of potent antimicrobial agent (Zone diameter 12-16 mm).The results for IC_{50} values for the standard compound for the above three antioxidant activity methods (5.57±3.29, 6.21±0.98 and 6.98±1.68 respectively) and isolated polysaccharides (15.51± 1.23,23.45 ± 1.27and 19.57± 1.63 respectively) were found to be comparable.The current result supports the medicinal use of CM flower as an antimicrobial and antioxidant agent. The present work has the nobility as no such work has been done with the flower part of the above plant.

Keywords: Cucurbita maxima, thiobarbituric acid, ascorbic acid, ferric thiocyanate.

C-95

In vitro Toxicity Study of an Ayurvedic Formulation *"Krshinadi Churna"* on Hela cells

Debashish Paramanick, Ravindra Pandey, S. S. Shukla, Neeraj Sharma and Shailesh Jain

Patel College of Pharmacy, PGOI Campus, Ratibad, Bhopal–462044, Madhya Pradesh, India
manick.bholu@gmail.com

Abstract:

Krshnadi Churna is a classical ayurvedic formulation used for the treatment of infantile diarrhea with fiver, asthma in children and infantile vomiting etc. This formulation have *Piper longum* (Krshna) (Fr), *Aconitum hetrophyllum* (Aruna) (Rt), *Cyperus rotumdus* (Musta)(Rz), *Pistacia integerrima* (Gall). *Aconitum hetrophyllum* is the most important ingredient of the formulation. But some literature reports reveled that few *Aconitum* species are extremely poisonous in nature. Hence it was necessary to evaluate its toxicity. We have selected *Krshnadi Churna* for *in-vitro* toxicity study. The formula was referred from Ayurvedic Pharmacopoeia of India. The study clearly reveals the nontotoxic activity of formulation against Hela cell line with IC50 value of 40.25 µg/ml for hydroethanolic fraction respectively by MTT assay. Vincristine sulphate was used as standard cytotoxic agent and the IC50 of test samples are compared with standard. The IC50 value of vicristine sulphate is 47.56 µg/ml.

Keywords: Krshnadi churna, MTT assay, Toxicity study

C-96

Nutraceuticals: New Era in the Treatment of Hypertension

Diksha Singh, Amisha Vyas, Rupali Kalra and Anupma Diwan

School of Pharmaceutical Sciences, Apeejay Stya University, Gurugram-122001, India
diksha.singh@asu.apeejay.edu

Abstract:

Hypertension resides as a leading cause of cardiovascular morbidity and mortality worldwide, and is acknowledged as a risk factor for heart failure. Hypertension is directly or indirectly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India. The etiology of cardiovascular disease reveals many risk factors that are amenable to nutraceutical intervention. Recently, nutraceutical has gained the global interest, as an influenced approach in the treatment of hypertension with minimal side effect, as they have recognised health benefits and potential nutritional value. "Nutraceutical is any substance that is a food or a part of food and provides medical or health benefits, including the prevention and treatment of disease". Relatively ample of the evidence supports the use of L-arginine, potassium supplement, magnesium, olive leaf, garlic, calcium, celery and vitamin E, however the data is needed for the long term safety with nutritional value. These nutraceuticals help in combating some of the major health problems of the century such as obesity, cardiovascular diseases, cancer, osteoporosis, arthritis, diabetes, cholesterol etc. In addition, dietary supplements and modification, as well as herbal supplements, may be useful under the right circumstances. This review focuses towards the

better understanding of the nutraceuticals with respect to the treatment of hypertension.

C-98

Herbal formulation on Dengue Fever: A Review

Pal Nishikant, Soni Yash, Dubey Archana and Baghel singh Uttam

Department of Pharmacognosy, Kota college of Pharmacy
nishikantpal1@gmail.com

Abstract:

Dengue fever is a flu, illness, which is spread through a mosquito bite i.e Aedes mosquito. This dengue fever spreads via various kinds of virus genus but the main kind through which dengue fever arise is DENV-1 type. These viruses consist of RNA viruses' line. This fever is known as Break Bone Fever its norm. A big drop in platelet numbers are the major indication, as range is from 150,000 to 450,000. Decrease from 150,000 value is the recognizing symptom of dengue fever. Dengue fever causes mortality and morbidity around the world, specifically in the Tropics and subtropic regions, which has been of major concern to governments and the World Health Organization (WHO). The demand for plant-based medicines is growing as they are generally considered to be safer, non-toxic and less harmful than synthetic drugs. Crude extracts and essential oils obtained from 31 species showed a broad activity against *Arbovirus*. Current studies show that natural products represent a rich potential source of new anti-dengue compounds The main objective of the current study is to investigate the potential of *Carica papaya* leaves extracts against Dengue fever. Further ethnobotanical surveys and laboratory investigations are needed established the potential of identified species in contributing to dengue control.

Keywords:Dengue fever, *Carica papaya,* **Ethanobotanical surveys, Platelets,** *Arbovirus*

C-99

Extraction of Sprouts of *Raphanus sativus* and *In-vitro* Evaluation of activities

Meghana.R, Triveni. P, P.Niharika and S.Manohar babu

Department of Doctor of pharmacy, SIMS College of Pharmacy, Mangaldas nagar, Guntur
meghana.r116@gmail.com

Abstract:

Raphanus sativus (raddish) belongs to the family Brassicaceae, owe their sharp flavour to the various chemical compounds produced by the plants ,including glucosinolate, myrosinase, isothiocyanate .They grow best in full sun light, sandy loams, with soil PH 6.5-7.0. *Raphanus sativus* has many pharmacological activities like elimination of the food retention, resolution of phlegm, treatment of acid regurgitation, abdominal pain, diarrhoea, asthma. In our study we collect plant material [raphanus seed] of 1kg which is authentified by Mrs.A.Kranthi PhD, Botanist working in Mahatma Gandhi P.G. &Degree college. The seed germinates in 3-4 days in moist conditions with soil temperatures between 65-85→F Seeds are soaked to germinate followed by drying and grinding to coarse powder followed by cold maceration with ethyl acetate, phytochemical investigation, *in vitro* evaluation. The dilutions of the extract are evaluated for *in vitro* anti inflammatory and anti oxidant activity by protein denaturation and hydrogen peroxide scavenging method respectively. From the evaluation studies the extract has high *in vitro* anti inflammatory and anti oxidant activity when compared to that of standard drugs such as Diclofenac and Ascorbic acid respectively.

Keywords:*Raphanus sativus*, **Anti oxidant, Anti inflammatory**

C-100

Preparation and Standardisation of Herbal Churna

S.Sarala and D.Chamundeeswari

Department of Pharmacognosy, Hindu college of Pharmacy, Guntur, A.P., India
srlchinnam83@gmail.com

Abstract:

The traditional systems of medicine are really effective but the problem is lack of quality assurance. The present work aims to standardize a Pancha Harithakadi Churna (PHC) which is a new formulation used for digestion. The churna was prepared and standardized with the parameters like Organoleptic characters, Physical characters, Physicochemical properties and Phytochemical screening etc. these parameters can determine the quality of the product. The results were found to be within the standards.

Keywords: Herbal churna, PHC, Preparation, Standardization

C-101

Herbal Drugs used in Treatment of Acne-An

Update

Sunaina Rani, Gurpreet Kaur and Manju Nagpal

Chitkara College of Pharmacy, Chitkara University, Chandigarh-Patiala Highway, Rajpura-140401, Punjab, India

Abstract:

Herbal medicines are gaining increased popularity due to their advantages, such as better patient tolerance, long history of use, fewer side-effects and being relatively less expensive. Furthermore, they have provided good evidence for the treatment of a wide variety of difficult to cure diseases. The skin is the outermost layer of the body that is often easily damaged by environmental factors as well as stress and poor eating habits. Many people in the world are affected by acne. Acne affects the patients physically as well as psychologically. *Acne vulgaris* (or simply acne) is an infectious disease and one of the most prevalent human diseases. Acne is a cutaneous disorder of involving abnormalities in sebum production and is characterized by both inflammatory (papules, pustules and nodules) and noninflammatory (comedones, open and closed) lesions. *Propionibacterium acnes* and *Staphylococcus epidermidis* are common pus-forming microbes responsible for the development of various forms of acne vulgaris. Common therapies that are used for the treatment of acne include topical, systemic, hormonal, herbal and combination therapy. A variety of herbs, such as *Piper nigrum, Aloe vera,* Neem, Tulsi, Marigold, Turmeric etc. are used to treat acne .This review focuses on the treatment of acne using various drug delivery systems.

Keywords:

C-102

Preliminary Phytochemical Analysis of *Ficus dalhousie*

Dahiya V, Vasudeva N[1], Sushil and Hooda MS

Janta college of Pharmacy, Butana, Sonipat- 131302, Haryana, India
[1]GJUS&T, Hisar- 124401, Haryana, India
vinesh.dahiya@yahoo.com

Abstract:

The current study was performed in order to carry out preliminary phytochemical analysis of the various parts (aerial roots, stem bark and leaves) of *Ficusdalhousie* (Moraceae). The aqueous extracts of the plant shows the presence of various phytochemicals like carbohydrates, flavanoids, alkaloids, saponins, steroids and terpenoids in the aerial roots, stem bark and leaves. Tannins, phenols, alkaloids and steroids were found to be present in the aerial roots.It was concluded from the phytochemical analysis that in *Ficus dalhousie,* plant parts like leaves and aerial roots have chemical constituents in comparatively larger amounts when compared to the stem bark.

Keywords:*Ficus dalhousie,* **Moraceae, Phytochemical analysis**

C-103

Elemental Examination of Fruits and Vegetable Samples from Four different places of Haryana State

Jyoti Rathi

Department of Pharmaceutical Sciences, Indira Gandhi University, Meerpur, Rewari-123401, Haryana, India
Jyotirathee.angle@gmail.com

Abstract

Fruits and vegetables are edible plant products that are good for health. They constitute an important part of human diet since they contain carbohydrates, proteins, vitamins, minerals and fibers required for human health. Precise qualitative and quantitative analyses of heavy metals present in them are important for accurate nutritional labeling, determination of compliance with the standard of identification and in ensuring that the products meet manufacturer's specification. Elemental analysis of fruits and vegetables can be done by using wet digestion method. AAS (Atomic Absorption Spectrophotometer) is used to evaluate the level of elements (Zn, Cu, Cd, Fe, Ca, As, Mg, Hg, Pb) in the fruit (pomegranate, papaya, lemon, water melon, guava) and vegetable (spinach, tomato, peppermint, spinach, capsicum) samples. The results further indicated that the fruits and vegetables have heavy metal concentration within the safe limits prescribed by WHO. This study will bring awareness to consumers of these items about what they are taking and the health implication as well as assist them and the farmers in taking necessary precautions towards proper care of their fruits and vegetables before consumption.

Keywords: AAS, Elemental analysis, Fruits, Vegetables

C-104

Ficus benjamina aerial roots Standardization and Phytochemical Screening

Divya Sharma, Rakesh K Sindhu and AnujaVerma

Department of Pharmacognosy and Natural Products, Chitkara College of Pharmacy, Chitkara University, NH-64, Rajpura-140401, Patiala, Punjab, India
sharmadivyads4@gmail.com

Abstract:

Current study has been performed to investigate the phytochemical and pharmacognostic properties of aerial roots of *Ficus benjamina*. The parameters were evaluated i.e. Morphology, Microscopy, Histochemical colour reactions with various agents, Ash value, Water soluble ash, acid soluble ash, sulphated ash, Swelling index, Extractive value and Phytochemical investigation. The microscopy showed presence of annular xylem, lignified fibres, parenchymatous cells and cork cells. Total ash, water soluble ash, acid insoluble ash and sulphated ash were found to be 7.25%, 4.35%, 5.8% and 3.91% respectively. The extractive value of petroleum ether, chloroform, ethyl acetate, ethanol and aqueous were found to be 5.7%, 10%, 5.5%, 4.5% and 10.5% respectively. The foaming index and swelling index were negligible. Aqueous and ethanolic extracts were screened for the presence of phytochemicals. The presence of alkaloids, glycosides, carbohydrates, saponins, phenolic compounds and tannins was detected by performing various tests with reagents. Powder was treated with different chemicals and analysed in short U.V., long U.V. and visible light for observing fluorescence. This is the first ever evaluation of roots of *Ficus benjamina* and can be used for future standardization.

Keywords: Phytochemical, Pharmacognostical, *Ficus benjamina,* **Aerial roots, Extracts**

C-105

Formulation Development and Evaluation of Polyherbal Soap

Gagandeep Kaur[1], Mansi Chitkara[2] and Rakesh K Sindhu[1]

[1]Department of Pharmacognosy and Natural Product,Chitkara College of Pharmacy, Chitkara University, Rajpura – 140401, Patiala, Punjab, India
[2]Nanomaterials Research Laboratory, Department of Applied Sciences, Chitkara University, Rajpura – 140401, Patiala, Punjab, India
kaur.gagandeep1096@gmail.com

Abstract:

The basic aim of our study was to develop and evaluate the polyherbal soap by using different extracts (extracts of Neem leaves, papaya leaves, Aloe leaves, Turmeric and Tulsi leaves) having greater antioxidant and antimicrobial potential. Pre-eminently, basic soap was prepared using Coconut oil and NaOH (lye) and the different extracts were incorporated into the basic saponification reaction. The herbal formulation thus prepared was then consigned for the evaluation testing for the analysis of pH, Moisture content, foaming ability, foam retention time, saponification, Total Fatty Matter determination and antimicrobial activity. The results demonstrated that pH 7.5 – 8, moisture contents 8.6%, foam retention time 1.20 minutes, Saponification value was 210.375 mg/ml, 30% TFM for polyherbal soap. Also the evaluation tests showed that the poly herbal soap has greater antifungal and antimicrobial properties. Some human infections which are majorly caused due to wounds, acne or blisters; these strains of microorganisms are of greater benefit. Moreover, oils and extracts used are added to treat various skin infections and are perfect for daily usage.

Keywords: Polyherbal soap, Evaluation, Saponification value, Antimicrobial potential

C-106

Preliminary Phytochemical Screening and *In vitro* Antiurolithiatic activity of *Mallotus philippensis* (Lam.) Mull. Arg

Priyanka Uniyal, Ankit Kumar and Anupama Singh

Department of Pharmacognosy, School of Pharmaceutical Sciences, Sardar Bhagwan Singh Post Graduate Institute of Biomedical Sciences and Research, Balawala-248161, Dehradun, Uttarakhand, India
priyankauniyalnathuwawala@gmail.com

Abstract:

Mallotus philippensis (Lam.) Mull. Arg., belonging to the family Euphorbiaceae, is commonly known as Kamala dye tree. An attempt has been made to highlight this Himalayan plant in the field of traditional medicine and explore its potential use in treating kidney stones. Traditionally, this plant is used in the treatment of skin problems, bronchitis, tape worm, eye-disease, cancer, diabetes, diarrhoea, jaundice and malaria. Various parts of this plant *Mallotus philippensis* (Lam.) Mull.-Arg. contain phytoconstituents like terpenoids, diterpenoids, steroids, flavonoids, cardenolides, coumarins, isocoumarins, and many more. Several phenolic constituents like bergenin, mallotophilippinens, rottlerin, and isorottlerin are also present in its fruits and stem bark. This plant has already been reported for its inflammatory, immuno-regulatory, antibacterial, antifungal, antiallergic, antiproliferative, antioxidant, and antiradical action. Apart from cytotoxicity against human cancer cell, this plant has

also been reported for antileukemic and anticestodal activities from the fruits and stem bark. Our present study was aimed to evaluate quality standards for *Mallotus philippensis* (Lam.) Mull.-Arg. leaves. Preliminary phytochemical tests, quantitative estimation of phytoconstituents, TLC finger print, fluorescence analysis and *in vitro* antiurolithiatic activity were performed. Results of quality standard were found within the acceptable limits and extracts were found to possess antiurolithiatic potential when tested using an *in vitro* model. Water extract was found more capable of dissolving calcium phosphate and calcium oxalate stones than the standard drug systone. Water extract was found potent enough for further investigating antiurolithiatic activity in laboratory animals.

Keywords: Kamala dye tree, TLC finger print, Quantitative, Antiurolithiatic

C-107

Validated RP-HPLC Method to Estimate Eugenol from Marketed Formulations like

Sidh Tulsi

Manoj B. Gomkale, Unmesh Keshwar, Sharad Dhurde and Bharatbhushan Shrikhande.

Siddhayu Ayurvedic Research Foundation Pvt. Ltd.,
Nagpur-441204, Maharashtra, India
manojgomkale@gmail.com

Abstract:

Eugenol is an important phytochemical bioactive compound of marketed herbal formulations. It shows anti-inflammatory and anti-bacterial activity. Thus Eugenol suitable bioactive biomarker to establish the quality of marketed formulation. The aim is to develop and validate an efficient and effective RPHPLC method for quantification of Eugenol from commercial marketed formulations. Separation was carried out on a cosmosil C18 column, mobile phase composition was methanol: distilled water (60:40, v/v) at flow rate of 1 mL/min. Detection was carried out at 215 nm using a photodiode array detector (PDA). Commercial Ayurvedic formulations such as Sidh Tulsi were further subjected to RP-HPLC for estimation of Eugenol. The RP-HPLC method was validated as per ICH guidelines. The LOD and LOQ level were found to be 25.00 ng/mL and 50.00 ng/mL, respectively. The method was found to be simple, accurate, reproducible and rugged. This method was used to estimate the content of Eugenol in commercial formulations and the method is found suitable for quality assurance and marker based standardization of ayurvedic formulations containing eugenol.

Keywords: Eugenol, RP- HPLC validation, Sidh tulsi

C-108

Inhibition of Viper Venoms Induced Toxicity by *Moringa oleifera* Leaves Extracts and Its HPTLC Analysis

Abhilash Kanakdhar, Asha Thomas and Snehal Karanjkhele

Dr. D.Y. Patil Institute of Pharmaceutical Sciences and Research
Pimpri, Pune- 411018, India
abhikanakdhar@gmail.com

Abstract:

Snakebite is a medical emergency and it is one of the most neglected public health issues in rural areas in India .Currently, antivenom serum therapy is widely used against most venomous Indian snake species- Cobra, Krait, Russell's viper and Saw Scaled viper. This therapy is expensive and shows various severe side effects. Hence, herbal antidotes can be used based on ethnomedical information. This research work was aimed at evaluation of anti-ophidian properties of leaves extracts of *Moringa oleifera* against viper venoms to scientifically validate the traditional claims. Aqueous and methanolic extracts were evaluated for its ability to neutralize Russell's viper and Saw scaled viper venoms.The plant extract effectively neutralized the Russell's viper venom induced lethality LD_{50} of 10.9 µg at an effective dose of 10µg/mice and 300µg/mice (ED_{50}) for aqueous and methanolic extracts respectively. Inhibitory concentrations against phospholipase A_2 activity by aqueous and methanolic extracts were found to be 0.06 mg and 0.07mg respectively. The presence of phytoconstituents like phenolics, flavonoids, saponins, alkaloids and glycosides in both the extracts confirmed through preliminary phytochemical and HPTLC investigations support the obtained activity. This study indicates that *Moringa oleifera* plant extracts can effectively neutralize the toxins present in *Daboia russelli* and *Echis carinatus* venom.

Keywords:*Moringa oleifera* **extracts, Viper venoms, Lethality, Phospholipase, Hemolytic, Procoagulant, HPTLC**

C-109

Screening of Gastric Antiulcer activity and Phytochemical studies of Ethanolic extract of Pergularia daemia Linn. leaves

Nithya.S, Vasanth.M, Tino Mathew and Saravanan. R

Department of Pharmaceutical Chemistry, Vinayaka Missions College of Pharmacy, Salem-636008, Tamilnadu, India

Abstract:

The ethanolic extract of *Pergularia daemia* Linn. (Family: Asclepiadaceae) leaves was screened for anti-ulcer activities in Wister albino rats and phytochemical analysis. The study suggested that the extract was found to produce significant Anti-ulcer activities in dose dependent manner (100 and 200mg/kg oral). These activities were comparable with the standard drug such as Ranitidine (50mg/kg oral). The preliminary phytochemical analysis of ethanol extract of leaves of sidacordata revealed the presence of phytoconstituents such as alkaloids, flavanoids and tannins. The present study indicates that the observed significant anti-ulcer activities of *P. daemia* leaves may be contributed to the phytoconstituents present in it. Further work is in progress to identify the possible mechanisms of action and to identify the lead molecules responsible for anti-ulcer activities.

Keywords: *Pergularia daemia* **Linn.,Anti-ulcer activities, Ethanolic extract, Ranitidine**

C-110

Preparation and Evaluation of Solid Lipid Nanoparticles Loaded With Curcumin for Targeted Delivery to Pancreatic Cancer

Neelesh Malviya and Divya Jain

Smriti College of Pharmaceutical Education, Indore (M.P.), India
drneeleshmalviya@gmail.com

Abstract:

Curcumin, an active phytoconstituents of *Curcuma longa,* has significant cytotoxic and apoptotic potential in a large number of human cancer cell lines. Poor pharmacokinetics and stability of Curcumin, limit its in vivo clinical efficacy. Present study was designed with an objective to investigate the combined effect of Curcumin and Gallic acid in Pancreatic Cancer. Solid lipid nanoparticle of Curcumin was prepared by using Poloxamer 188 and further conjugated with Glyceryl Monostearate and Gallic acid with the aim to increase the bioavailability of Curcumin. Solid lipid nanoparticles were formulated by hot homogenization followed by utrasonication techniqueand evaluated physicochemically using parameters such as size, zeta potential, entrapment efficiency, scanning electron microscopy, and in vitro release study. In vitro cytotoxicity investigations were performed by using BxPC-3 Cell line. Particle sizes of different formulations were found in the range of 188 nm to 380 nm. Particle size was found to be increased with increase in polymer concentration.Entrapment efficiency of Curcumin loaded solid lipid nanoparticles were found to be in the range of 48.98 ± 0.68 to 87.65 ± 0.99%. The IC-50 of Curcumin loaded solid lipid nanoparticle conjugate of GMS with gallic acid was calculated as 17.98 (µM/ml) in cytotoxity activity performed on BxPC-3 cell lines.

Keywords: Curcumin, Solid lipid nanoparticle, Pancreatic cancer

C-111

Pharmacological Investigation of *Cassia tora* Linn for Antidiabetic and Antihyperlipidemic Activity

Sapna Malviya, Ankur Joshi, Narendra Vyas and Anil Kharia

Modern Institute of Pharmaceutical Sciences, Indore, India
smsapnamalviya@gmail.com

Abstract:

Cassia tora (CT) due to its medicinal importance has been used widely for the treatment of diabetes. The antidiabetic activity was performed using wistar rats to determine the effect of hydro alcoholic extract of CT leaves on blood glucose level, adipose tissue and lipid profile. The study was further evaluated to determine insulin level and glucose tolerance. Diabetes was induced by intraperitoneal injection of streptozotocin (STZ) 65 mg/kg. Animals were divided into five groups namely control group, diabetic group, reference group (glibenclamide) and two test groups CT-I (250 mg/kg extract) and CT-II (500 mg/kg) each group containing six animals. Daily dosing was performed for 60 days and feed and water consumption was observed regularly at the end of the study. The main finding of the study for the test extract was that the hydro alcoholic extract of CT leaves prevented a rise in blood glucose level in STZ induced diabetic animal. It improved lipid profile by decreasing the levels of serum triglycerides, total cholesterol, low-density lipoprotein (LDL) and increasing high-density lipoprotein (HDL) cholesterol. It can be concluded from the study that CT extract posse's significant antidiabetic activity by reducing blood glucose level of diabetic rats. Due to its potential, it may be an effective drug for treatment of diabetes and related complications like obesity and dyslipidemia.

Keywords: Oral glucose tolerance test, Diabetes, Hyperlipidemia

C-112

Investigation of Biological Activity of Tamra Bhasma & its Standardization

SK Bhoyar, FS Memon and SC Shaikh

Rajarshi Shahu College of Pharmacy, Buldana, Maharashtra, India
suchitabhoyar@gmail.com

Abstract:

Tamra Bhasma is copper in its oxide form & used therapeutically as a source of copper. The label claim states that Tamra Bhasma is used as astringent, antispasmodic, antiseptic. It is used to treat painful dyspepsia & anaemia. All four samples comply with traditional quality control test which was carried out by EKA, HRI, SMR & VAT Quantitative estimation of copper by AAS reveals that minimum 1.99% - 14.94% of copper was present in the formulations. SEM & XRD study reveals that the variation in size & shape of crystals may be because of presence of excipients. In vivo study of different formulation of tamra bhasma on serum parameters in paracetamol induced hepatic damage indicated the HRI>SMR>EKA>VAT.

Keywords: Tamra bhasma, EKA,HRI, SMR, VAT, Hepatoprotective

C-113

Comparative Standardization Study of Marketed Triphala Churna Formulation

Kulkarni Amough A, Dhumal P. B., Shivakumar S. Ladde and Dharashive V. M.

Dept. of Pharmacognosy, Shivlingeshwar College of Pharmacy (B. Pharm & Pharm D.), Almala-413512, Latur (MH), India
shivkumarladde@gmail.com

Abstract:

In the few decades, there has been exponential growth in the field of herbal medicines. The quality control of herbal crude drug & formulation is important in justifying their acceptability in modern system of medicines. Most of the traditional system of medicine is effective but they lack standardization. In the present research study deal with the comparative standardization of two marketed Triphala Churna formulation, from Seth Sakhram Nemchand Rasshala, Solapur and Yogesh Pharmacy, Nanded. The standardization of these formulation, organoleptic characteristics, physical properties such as moisture content (LOD), ash value, extractive values were carried out, it can be concluded that the formulation of Triphala churna contains all good characters of an ideal churna and it was found to be harmless, more effective, and economic. The heavy metal content study also carried out to ascertain the quality; purity and safety of these herbal formulations and these formulations are free from heavy metals. Hence, these formulations are good for personal use.

Keywords: Standardization, Triphala churna, Physicochemical parameters

C-114

Toxicological, Diuretic and Laxative Properties of Ethanol Extract From a Fern Species, *Macrothelypteris torresiana* (Gaudich) aerial parts: *In-vivo* and *In-silico* studies

Purab Sancheti, Sumanta Mondal, Debjit Ghosh and Sara Almas

Department of chemistry,GITAM Institute of Pharmacy, GITAM University, Rushikonda, Visakhapatnam-530 045, Andhra Pradesh, India
Purab47@gmail.com

Abstract:

The aim of this study was to evaluate the Toxicological, diuretic and laxative properties of ethanol extractof *Macrothelypteris torresiana* by studying *in vivo and in-silico* studies.*Macrothelypteris torresiana* (Gaudich), syn. *Lastrea torresiana* Moore (family: Thelypteridaceae) is a species of fern which is native to tropical and subtropical region of the world. It is a robust fern with a short creeping rhizome.1, 2 in traditional medicine *M. torresiana* leaves and roots have a wide range of reputed medicinal application. The aerial parts are used for treatment of fever, pain, granulation, healing and reducing odor in chronic skin ulcer and inflammation by the tribes of Pakistan, India and China.3 It is also used in Chinese folk medicine for the treatment of edema for patient suffering from kidney problems.3 Only few phytochemical and pharmacological properties have been reported on this plant, including the renoprotective potential of *M. torresiana* via ameliorating oxidative stress and proinflammatory activities.*In vitro* and *in vivo* antitumor activities were reported by Huang et al., 2010.4 A novel flavonoid was isolated from the root and the structure wasidentifiedas5,7-dihydroxy-2-(1,2-isopropyldioxy-4-oxocyclohex-5-enyl)-chromen4-one,5 along with four known flavonoids, protoapigenin, apigenin, kaempferol and quercetin.6 Literature available from all possible scientific sources revealed very little research work on this selected fern

species, whereas tribes claim that M. torresiana was used in the treatment of various diseases and ailments, although there is no inbuilt scientific proof in support of the utility of this fern as an diuretic and laxative agent. So, the present study explored the diuretic and laxative activities of an ethanol extract from Macrothelypteris torresiana aerial parts (EEMTAP).

Keywords:*Macrothelypteris torresiana,***Diuretic, Laxative, Toxicity,***In silico* **docking studies**

C-117

Analgesic and Anti-inflammatory Activity of *Plumeria rubra*.Linn. Bark Extract

[1]Jayashree Devi, Anurupa Ojah[1], Sumit Dasand Trishna Das[1]

[1]Girijananda Chowdhury Institute of Pharmaceutical Science, Azara, Guwahati, Assam, India
jayashreesarmah143@gmail.com

Abstract:

To evaluate the analgesic and anti-inflammatory effect of bark extract of *Plumeria rubra* using different solvents based on their polarity. The analgesic activity was evaluated by hot plate, acetic acid induced writhing and formalin induced writhing method in Swiss Albino mice divided into 4 different groups (control, standard, diclofenac sodium and extract).The extract was also investigated for the anti-inflammatory effect on Long Evans rats using carrageenan induced rat paw oedema method. Phytochemical analysis of the extract revealed the presence of tannins, alkaloids, flavonoids and terpenoids.The extract elicited a highly significant ($p<0.001$) analgesic activity in sensation to 58.33% and 65.3%at the doses of 250 and 500 mg/kg BW respectively while that of the standard drug was 54.50% at the 4th hour of study.. The most prominent inhibition of 67.09% (250 mg/kg) and 70.07% (500 mg/kg) were observed at the 4th hour of study.In anti-inflammatory activity, the sub plantar injection of carrageenan produced a local edema that increased progressively to reach a maximal intensity 4 hours after injection. The oral administration of both doses of the chloroform bark extract of *Plumeria rubra* significantly 55.89 at 250 mg/kg and 66.80% at 500 mg/ The result was found to be highly statistically significant at 4th hour.These effect of the bark extract may be due to the presence of various chemical constituents but these experimental findings would further establish the scientific basis of the traditional uses of the plant in the management and/or control of pain as well as inflammatory conditions.

Keywords:*Plumeria rubra***, Analgesic, Anti-inflammatory, Formalin, Carrageenan**

C-118

Comparative Phytochemical Approach of *Anogeissus latifolia*(Roxb.)For Medicinal Uses

Vikas Chandra Sharma and Atul Kaushik

Department of Pharmaceutical Sciences, IFTM University, Moradabad-244102, Utter Pradesh, India
vikas.A.sharma08@gmail.com

Abstract:

Anogeissus latifolia (Roxb.) belonging to family Combretaceae has used traditionally in Rajasthan folk Medicine for the treatment of alleviate pain, inflammation, fever, convulsion and skin diseases. The aim of the present work was to investigate the phytochemicals screening of stem bark and leaves of *Anogeissus latifolia* (Roxb.). Stem bark and leaves of *Anogeissus latifolia* (Roxb.) were evaluated for phytochemical and chromatographic parameters. Phytochemical screening for the presence of phytoconstituents was carried out by using standard methods. Total phenolic and total flavonoid contents were estimated spectrophotometrically using Folin-ciocalteu assay and aluminum chloride assay method, respectively. High Performance Thin Layer Chromatography finger printing profiles of acetone and chloroform were developed in suitable mobile phase using standard procedures. CAMAG HPTLC system equipped with semi-automatic applicator was used for HPTLC profiling. Acetone and chloroform extracts of leaves and stem bark were developed in suitable mobile phase using standard procedures and visualized in UV 254 nm, 366 nm and in white light after derivatization with in vanillin-sulphuric acid reagent. Results of the preliminary phytochemical analysis and HPTLC finger printing profile indicate many similarities between leaves and stem bark of the *Anogeissus latifolia* (Roxb.). Similarities in phytochemical analysis and HPTLC profile of various extracts suggest that leaves may have similar active constituents like stem bark.

Keywords:*Anogeissuslatifolia***, Phytochemical, HPTLC profile**

C-119

Preliminary Screening of *Punica granatum* Fruit and *Cinamomum zylanicum* Bark Extracts for Anti Histaminic Activities

Jeetendra Kumar Gupta, Kamal Shah and Ashish Mishra

Institute of Pharmaceutical Research, GLA University, Mathura-81406, Uttar Pradesh, India jkgupta81@rediffmail.com

Abstract:

The purpose of this study was to prove the folkloric uses of *Punica granatum* fruit and *Cinamomum zylanicum* bark in histamine intolerance. The two prime incidences are peptic ulcer and allergic response under the parasol of histamine intolerance. In order to scientifically explore the benefits, pharmacological studies were carried out. On the basis of receptor locations, it can be said that H_2 stimulation in stomach can lead to peptic ulcer where as H_1 receptor stimulation creates allergic response. Therefore, in this study two types of screening v.i.z. antiulcer and anti-allergic evaluations were carried out using experimental animals. The extraction of test materials were accomplished with the help of soxhlet assembly using petroleum ether, chloroform and ethanol solvents. These solvents were selected on the basis of a pilot study. The obtained extracts were further utilized for pharmacological studies. The screening of various extracts of Pomegranate and Cinnamon was performed using isolated tissue preparations. The guinea pig ileum preparation and stomach strip preparation were taken in organ bath. The concentration response curve was plotted using organ bath assembly. The suppression of concentration response curve through the test extract was considered as antagonistic potential of the test extract. The experiment was individually carried out for each extract. The obtained height of the curve was redeemed for percent response and analyzed statistically. The result of analysis revealed neither *Punica granatum* nor *Cinamomum zylanicum* had anti-ulcer activity, while the ethanolic extract of *Cinamomum zylanicum* had H_1 receptor antagonistic property in dose dependent manner.

C-120

Standardization of 'Lavangadi Vati': A Polyherbal Ayurvedic Formulation

Dubey Darshan and Dashora Kamlesh

Institute of Pharmacy, Vikram University, Ujjain (M.P.) 456001, India
darshandubey@gmail.com

Abstract:

Standardization / fingerprinting of a compound ayurvedic formulation is essential for establishing the adaptability, efficacy and quality with batch to batch consistency. Lavangadi vati is official in Ayurvedic formulary of India and it is the most common formulas used for Cough, Dyspnoea and Asthma. It comprised of the fruits of six medicinal important plants, *Eugenia caryuphyllus, Piper nigrum, Terminalia belerica, Acacia catechu* and *Acacia Arabica*.The present study is an attempt to develop the standardization /fingerprint method for Lavangadi vati. In-house preparation have been standardised on the basis of organoleptic characters, physical characteristics, physico-chemical properties, preliminary phythochemical analysisandUV-Visible spectrophotometry method developed for the estimation of piperine is a simple, rapid and precise for the routine estimation of Lavangadi Vati. The set parameters were found to be sufficient to evaluate the vati and can be used as reference standards for the quality control/quality assurance laboratory of a Pharmaceutical house. Obtained results were compared with marketed formulation.

Keywords:Lavangadi vati,HPLC, Ayurvedic formulation, UVvisible spectrophotometry,Fingerprinting

C-121

Physicochemical Characterization of Swarna Bhasma Prepared by Conventional Method

Tushar Gupta, Veena Deo and Bharatbhushan Shrikhande

Siddhayu Ayurvedic Research Foundation Pvt. Ltd. Nagpur,India
gpttushar28@gmail.com

Abstract:

Bhasmas have been used worldwide to treat various diseases. The healing aspects of bhasmas have been accepted in many cultures and have been known as alternative medicine. Swarna bhasma is a functional dosage form in Ayurveda along with few others. Swarna Bhasma is used as Ayurvedic treatment for infertility, muscle wasting, heart weakness, sexual weakness, premature ejaculation, erectile dysfunction, anemia, asthma, diabetes, cancers, low immunity, tuberculosis and other wasting disease Metals are very heavy in nature and are not easily absorbed and possess toxic substance, thus these metals can be converted into bhasma which are non-toxic and easily absorbed due to its fine particle size and have high therapeutic activity. The present research describes the preparation and characterization of Swarna Bhasam nanopaticles .Swarna Bhasma was prepared by Shodhan, Bhavana & Maran process. The prepared bhasma was then characterized with the help of Atomic absorption spectroscopy (AAS), X-Ray diffraction & Transmission electron microscopy (TEM). The results showed

that the Swarna Bhasma was successfully prepared and particle size was in nano-range.

Keywords: Swarna bhasam, Nanoparticle, AAS, Transmission electron microscopy, Anemia

C-122

Formulation and Characterization of the Improved *In –vitro* Mucoadhesion, Absorption and *In vivo* Antiepileptic potential of Chitosan Based Prgabalin Microsphere (CBPM) *via* Intranasal Administration

Nazish Sohial, Darshan Telange and Milind Umekar

Smt. Kishoritai Bhoyar College of Pharmacy, New Kamptee, Nagpur–441002,India
nazishsohail544@gmail.com

Abstract:

The present research work portrays the formulation of chitosan based pregabalin microsphere (CBPM), with a goal to enhance its *in vitro* mucoadhesion, diffusion and rapid absorption via intranasal route. The CBPM was formulated using ionotropic gelation method, with incorporation of selected studied variables; the best formulation was optimized using box-behnken design. The design-optimized CBPM was characterized for its physico-chemical and functional parameters *viz.,* particle size and zeta potential, scanning electron microscopy (SEM), differential scanning calorimetry (DSC), Fourier transforms infrared spectrophotometry (FTIR) and powder x-ray diffractometry (PXRD), *in vitro* mucoadhesion, diffusion study and *ex-vivo* permeation. The antiepileptic activity of optimized CBPM was also evaluated for its effect on Pentylenetetrazol (PTZ) – induced seizures. Using box-behnken design, the investigated variables were showed to be 150 (X_1), 1000 (X_2) and 1.5 (X_3). The physico-chemical characterization confirmed the formation of microsphere. The obtained microsphere was found to be spherical with smooth surface. The percentage of *in vitro* mucoadhesion of optimized CBPM was found to be 80.53±1.29.The*in vitro* diffusion study of CBPM showed to be enhanced, compared to that of pure pregabalin. The *ex-vivo* permeation of CBPM also exhibited a same release pattern with that of diffusion study. The design-optimized CBPM formulation demonstrated an excellent antiepileptic activity, with significant protection and delayed the production of onset of convulsion in PTZ – induced seizures. The above results and discussion indicates that microsphere formulation with chitosan polymer can be helpful in enhancing *in vitro* mucoadhesion potential as well as rapid absorption of BCS I drug via intranasal route of administration.

Keywords: Chitosan, *In vitro* mucoadhesion, *In vitro* diffusion, Antiepileptic activity, Intranasal route of administration.

C-125

Variation in Secondary Metabolite Content while Change in Seasonal and Geographical Distribution

Garima Mishra and Ashish Sarkar

Department of Pharmaceutical Science Shri Guru Ram Rai University, Dehradun-248001,India
mishragariam420@gmail.com

Abstract:

The aim of this study is to investigate the total phenolic content, concentration of flavonoids and antioxidant activity in extracts of the plants *PA-1, PA-2 and PA-3* .Samples were are collected from deferent geographical condition on deferent time i.e. summer, winter and Monsoon. Three different extracts of the plant materials, for each phase, were obtained by aqueous extraction, hydroalcoholic and petroleum ether extracts. Based on primary phytochemical and Extractive value investigation hydoalcoholic and aqueous extracts are carried forward for further study. The concentration of total phenolic content was determined using the Folin-Ciocalteu´s reagent and obtained values were the highest in the winter season in *PA-1, PA-2* and PA-3. The concentration of flavonoids in hydroalcoholic and aqueous extract were determined by spectrophotometric method using aluminum chloride. The content of flavonoids was expressed in terms of quercetin equivalents. The hydroalcoholic and aqueous extracts of the plants were subjected to in vitro antioxidant an study which concludes highest content in winter during study it was also concluded that geographical distribution having very small and marginal effect on plant metabolites. Traditional medicinal plants are used in treatment of number of diseases, Plant being a vital component in various dosage forms therefore its quality and purity is a prime importance. Therefore this information will give additional benefit during collection and cultivation of these traditional medicinal plants for better therapeutic value.

Keywords:Anti-oxidant, Phenolic content, Seasonal variation, Secondry metabolites

C-126

Comparative Studies of Phytochemical and *In-*

vitro Anti-inflammatory Activity of Leaves and Bark of *Microcos paniculata L.*

MadondoJulian, TE Thilagam and D Raj Kumar

Department of Pharmacognosy,JKKMMRF'S–Annai JKK SampooraniAmmal College of Pharmacy,Tamil Nadu-638183, India
julianmadondo@gmail.com

Abstract:

The aim of the present study was to investigate and compare the phytochemical and *in-vitro* anti-inflammatory activities of ethanol extract of leaves and bark of *Microcos Paniculata L.* belonging to family*Tiliaceae*. Ethanol extracts of the plant parts were prepared at room temperature and the concentrated ethanol extracts used for the phytochemical screenings by using appropriate procedure for the investigation of phytoconstituents. The ethanolic extract was used for the evaluation of *in-vitro* anti-inflammatory activity using albumin denaturation and membrane stabilization at different concentration(100-1600 µg/ml).Aspirin was used as standard drug. Phytochemical study revealed the presence of alkaloids, carbohydrates,terpenoids, tannins for bark and leaves respectively and flavonoids was present in bark but absent in leaves. During the estimation of anti-inflammatory activity using albumin denaturation plant extract for leaves and bark showed inhibition of 56% and 61% at 1600 µg/ml respectively in contrast to standard drug (aspirin)showed 70%.The membrane stabilization percentage inhibition of heamolysis were concentration dependent, with increasing concentration the activity also increased. The plant extracts for leaves and bark showed inhibition of 47% and 50% at 1600µg/ml respectively in contrast to standard drug (aspirin)showed 61%. By considering the result, it can be concluded that *M.paniculata* ethanol extract of bark displayed a higher anti-inflammatory activity than that of leaves may be due to the presence of flavonoids.

Keywords: *Microcos paniculata* **L, Phytochemical, Anti-inflammatory**

C-127

Antiproliferative Activity of Oleanane Saponin from Ethanolic Extract of *Luffa acutangula* Seeds

Ashwini Khubalkar, Kartik Bhagat, Amol Warokar and Rajesh Lohiya

Dept. of Pharmaceutical Chemistry, Smt. Kishoritai Bhoyar College of Pharmacy, Kamptee, Nagpur, Maharashtra-441002, India
ashwinikhubalkar15@gmail.com

Abstract:

The present study was carried out to evaluate the antiproliferatve activity of isolated oleanane saponin from ethanolic extract of *Luffa Acutangula* seeds. The dried seeds of*Luffa acutangula* (LA)were successively extracted with petroleum ether, ethyl acetate, acetone and ethanol. Spectrophotometric standardization of the extracts was done for the assessment of secondary metabolites. Bioactive constituent was isolated by column chromatography and characterized by FTIR, ^{1}HNMR, Mass spectrometric analysis. Isolated Oleanane saponin was subjected to *in vitro* Antimitotic and Antiproliferative assay by *Allium cepa* root inhibition and *yeast* model. Phytochemical screening and HPTLC fingerprinting of extracts of LA reveals the presence of sterols, saponins, triterpenoids, and tannins. Spectroscopic standardization results showed ethanolic extracts of LA contains higher concentration of saponins. Isolation of saponin was achieved by column chromatography and characterized as Oleanane saponin. Antiproliferative activity of oleanane saponin showed significant decrease in length of *Allium cepa* root as well decrease in number of viable cell count in *saccharocymes cerevisiae* model compared standard methotrexate.

Keywords: *Luffa acutangula,* **Antimitotic,** *Allium cepa* **root inhibition, Antiproliferative**

C-128

Phytochemical Screening and Anti Diabetic Activity of Ethanolic Extract of *Achyranthes aspera* Seed in STZ-NC Induced Diabetic Rats

Santhosh Kumar M, Prabhu A, Satheesh Kumar P and Senthil Kumar N

Department of Pharmacognosy
Jkkmmrf's Annai Jkk Sampoorani Ammal College of Pharmacy,Komarapalayam-38183, Namakkal, India
santhoshsandy0204@gmail.com

Abstract

Diabetes mellitus is a major and current epidemic disease of the human race implicated with numerous clinical manifestations. A number of saponin-rich seeds such as that of *Achyranthus aspera* are commonly used in traditional medicine with increasing acclaimed efficacy against diabetes mellitus. In this study the effects of and ethanol extracts of the seeds of *Achyranthus aspera* on blood glucose levels in Streptozocin-Nicotinamide (STZ-NC) induced diabetes in rats have been

investigated. Doses (100 and 200 mg/kg) per oral, of the extracts were separately administered to a group of six diabetic rats in the study. The activity was compared with reference standard glibenclamide (5 mg/kg) and negative control of physiological saline. Treatment of STZ-NC induced diabetic rats with the ethanolic extracts of *Achyranthus aspera* seeds brought down the raised blood glucose levels significantly ($P < 0.01$) in a dose-dependent manner. Phytochemical screening of the seed extracts of *Achyranthus aspera* indicated the presence of carbohydrates, alkaloids, flavonoids, tannins & phenolic compounds and in the ethanol extract.

Key words: *Achyranthus aspera*, **Diabetes mellitus, Rats, STZ-NC, Glibenclamide**

C-129

Antibacterial Activity of *Jasminum grandiflorum* Linn Leaves

BS Hunasagi1, NV Kalyane and EN Gaviraj

Department of Pharmacognosy, B L D E SSM College of pharmacy. Bijapur-586103, India

Abstract:

The study was aimed at evaluating the Anti-microbial activity of different extract of leaves and roots of *Jasminum grandiflorum*. The dried roots and leaves of *Jasminum grandiflorum* were extracted with methanol, petroleum ether, chloroform and aqueous extracts. Extracts of *Jasminum grandiflorum* Linn. (Oleaceae) were screened for their *in vitro* antibacterial activity by agar diffusion method in comparison with standard antibiotic penicillin. The extracts were studied using *Staphylococcus aureus*, *Bacillus subtilis, Escherichia coli* and *Pseudomonas aeruginosa* as test organisms.These results suggest that leaf extracts of petroleum ether, methanol and aqueous extracts were effective against all the four microorganisms.

Keywords: *Jasminum grandiflorum* **Linn.,** *Staphylococcus aureus, Bacillus subtilis, Escherichia coli, Pseudomonas aeruginosa, Invitro,* **Antibacterial activity**

C-130

Hepatoprotective and Antioxidant Activity of Bark of *Ceiba pentandra* Linn

Thilagam E, Saravanakumar S and Rajasekar R

Department of Pharmacognosy, JKKMMRF'S Annai JKK Sampoorani Ammal College of Pharmacy, komarapalayam-638183, Tamil Nadu, India
thilagampharma@gmail.com

Abstract:

Many hepatoprotective herbal preparations have been recommended in alternative system of medicine for the treatment of hepatic disorders. Aim of the study, hepatoprotective activity and antioxidant activity of ethanol extract of bark of *Ceiba pentandra* evaluatedagainst CCl_4-induced liver damage in rats. The ethanol extract (200 and 400mg/kg) was administered orally to the rats with hepatotoxicity induced by CCl_4 (1 ml/kg). Silymarin (100 mg/kg) was used as positive control. Phytochemical studies of ethanol extract of *Ceiba pentandra* (EECP) revealed presence of carbohydrates, glycosides, terpenoids, flavonoids and tannins. Liver damage was evident by elevated levels of biochemical parameters in CCl_4 induced rats. The degree of protection was measured by using biochemical parameters such as serum glutamate oxalate transaminase (SGOT) and serum glutamate pyruvate transaminase (SGPT), alkaline phosphatase (ALP), bilirubin. Further, the antioxidant effects of extract on glutathione (GSH), superoxide dismutase (SOD) and catalase (CAT) and total protein were estimated. The ethanol extract at a dose level of 400 mg/kg produce significant hepatoprotection by decreasing the activity of serum enzymes, bilirubin, while they significantly increased the levels of Glutathione (GSH), superoxide dismutase (SOD) and catalase (CAT) in a dose dependent manner. The effect of extract was comparable to that of standard drug, Silymarin. From this study, it can be concluded that the ethanol extract *Ceiba pentandra* is not only an effective hepatoprotective agent, but also possesses significant antioxidant activity.

Keywords: *Ceiba pentandra*, **Hepatoprotective activity, Antioxidant, CCl_4**

C-131

Enzymatic Targets to Control Obesity and Their Natural Solution

Kaneez Fatima and Munish Garg

Department of Pharmaceutical Sciences, Maharshi Dayanand University, Rohtak-124001, Haryana, India
fatimakaneez177@gmail.com

Abstract:

Obesity is the medical condition in which the body fat accumulates and is stored in peripheral tissues leading to severe medical conditions including type II diabetes. There are several enzymes which play a key role in occurrence and management

of obesity. Hence, there is a wide scope for medical research particularly from natural sources to make these enzymes as a target for anti-obesity activity as they may affect the regulation of these enzymes. For example; the regulation of enzyme AMP-activated protein kinase (a fuel sensor in cell) can be decreased by α-lipoic acid (a cofactor of mitochondrial enzymes), leading to the weight loss in rodents via reducing food intake and enhancing energy expenditure. Similarly, oxytocin increases the expression of sreoryl-coenzyme A desaturase-1 and PPAR-α which represent a promising therapeutic approach for the treatment of human obesity and type-II diabetes. Also, an enzyme lipase (that digests the long chain triglycerides) is inhibited by Orlistat (a product of *Streptomyces toxylcirini).* Likewise, the inhibition of mitochondrial carbonic anhydrases is implicated in the de-novo lipogenesis both in the mitochondria and cytosol. Topiramate and zonisamide showing strong CAs inhibitory properties targeting isoenzymes involved in lipogenesis could be implemented in the treatment of obesity. *S. reticulata* inhibits porcine lipase and glycerol phosphate dehydrogenase (GPDH). Eppigallocatechin-3-gallate (EGCG) inhibits extracellular signal-related kinase, activates AMP-activated protein kinase (AMPK), modulates adipocyte marker proteins, and down regulates lipogenic enzymes as well as other potential targets. Some natural sources which shows anti-obesity effect includes *Nomame herba,* an inhibitor of lipase C-II, a triterpenoid Oleanolic acid, ameliorates visceral obesity. The leaves of *Nelumbo nucifera* show itsantiobesity activity by its action on digestive enzymes, lipid metabolism and thermogenesis. Human originated bacteria i.e. *Lactobacillus rhamnosus PL60,* produce conjugated linoleic acid and show anti-obesity acivity.

Keywords:Obesity, α-lipoic acid, Natural solution, Anti-obesity activity

C-132

GC-MS Analysis of *Asclepias curassavica* L. Ethanolic Extract

Sonia and Anju Dhiman

Department of Pharmaceutical Sciences, Maharshi Dayanand University, Rohtak-124001, Haryana, India
s10656494@gmail.com

Abstract:

The whole plant extract of *Asclepias curassavica* has been used in traditional system of medicine since ancient times for the treatment of a wide variety of ailments. The current study was undertaken to determine valuable phytocomponents present in the ethanolic extract of the whole plant of *A. curassavica* by gas chromatography-mass spectrometry (GC-MS).Screening of the extract was done by GC-MS which is an important technique for the separation and identification of different phytochemicals**.** The cultivated whole plant sample was dried and extracted in ethanol. The ethanolic extract of the whole plant of *Asclepias curassavica* revealed the presence of forty nine diverse phytochemical compounds. The prevailing compounds were henicosane, gamma tocopherol, methyl commate D, cytidine(area%4.60), neophytadiene(area%6.30), 2-hexadecen-1-ol(area%11.14), 9,12,15-octadecatrienoic acid(area%7.45), stigmast-5-en-3-ol (area%4.23), stigmasterol(area%3.21), 1,2-benzenedicarboxylic acid (area % 2.12), n-hexadecanoic acid (area % 14.31), squalene(area % 4.51), vitamin E(area % 3.95) and dotriacontane (area%2.56) in the whole plant extract. Several of these phytoconstituents are reported to possess pharmacological potential.Our results revealed that as per the experiments conducted on whole plant ethanolic extract of *A. curassavica*, several phytocompounds identified by GC-MS analysis were principal factors for significant, antiinflammatory, analgesic, antipyretic, antitumor, hypocholesterolemic, antibacterial, antimicrobial, antioxidant and other prophylactic activities. *A. curassavica* is an excellent source of various secondary metabolites especially steroidal, glycosidal, unsaturated fatty acids, terpenoidal compounds which may be used in formulations, medicines, pharmaceuticals etc. Further investigation may lead to important drug discoveries for individual benefits.

Keywords: *Asclepias curassavica*, **Ethanolic extract, GC-MS, Phyto-compounds**

C-133

Diuretic Activity of Flavonoid Compound Isolated from *Gmelina arborea* Fruits Extract

Bibhu Prasad Moharana and M. Prasant

Jeypore College of Pharmacy Rondapalli, Odisha, India
bibhu2491@gmail.com

Abstract:

The plant *Gmelina arborea* has been traditionally used in India for several medicinal purposes like anthelmintic, diuretic, antibacterial, hepatoprotective, anti-inflammatory, antioxidant and antidiabetic. It contains phytoconstituents like alkaloids, carbohydrates, anthraquinone glycosides, gums, mucilages, tannins, phenolic compounds and flavonoids. The objective of present study is to isolate a compound from ethanolic extract of *G. arborea* and to explore the diuretic

activity of isolated compound. The isolation of compound was done by column and thin layer chromatographic methods. The isolated compound was characterized to elucidate its structure by spectroscopic methods like ultraviolet, infrared, nuclear magnetic resonance and mass spectroscopy. The diuretic activity of isolated compound was evaluated by Lipschitz test methods using Wistar rats as animal model. All data are verified for statistically significant by using one way ANOVA at 5 % level of significance ($p < 0.05$).

A flavonoidal compound was isolated as yellow color crystal with melting point 177±1 °C with molecular formula $C_{16}H_{15}O_5$ and IUPAC name 5,7-dihydroxy-4-methoxy flavone. Urine volume was significantly increased in comparison to normal and standard control groups. The excretion of sodium was also increased by the compound. The diuretic effect of the compound was comparable to that of the reference standard (Furosemide).

It could be concluded that the isolated compound is a flavonoid and it possess diuretic activity.

Keywords: *Gmelina arborea,* **Flavonoid, Diuretic, Lipschitz**

C-134

Antimicrobial Activity of *Amaranthus spinosus* Leaf Extract

Fajge Shrirang Sampatrao, Antara Choudhury and Jando Tevin Mwaponda

Department of Pharmaceutical Sciences, Hillside College of Pharmacy & Research Centre, Bangalore – 560062, Karnataka, India.
shrirangfajge@gmail.com

Abstract:

Amaranthus spinosus Linn.belongs to the family Amaranthaceae and is commonly known as Spiny amaranth. It is an annual or perennial herb, native to Tropical America and found throughout India in backyard gardens, roadsides, waste places and fields. *Amaranthus spinosus* have been used in indigenous medicine for the cure of constipation, as diuretic, antidiabetic, antipyretic, anti-snake venom, antileprotic, anti-gonorrheal, anti-inflammatory, anthelmintic, antiandrogenic and as an immunomodulator. The objective of the present study is antimicrobial activity of *Amaranthus spinosus* leaf extract. The crude extracts (alcoholic, aqueous, and acetone) obtained from the leaves of *Amaranthus spinosus*were tested for antifungal activities against pathogenic fungi *Aspergillus niger, penicillum chrysogenum, Microsporum gypseum, Epidermophyton floccosum*. The screening of anti-fungal activity was done by agar well diffusion method and the results compared with standard Clotrimazole (125µg/ml). All extracts showed potential anti-fungal properties. The anti-fungal properties of extracts were comparable with that of standard Clotrimazole. Thus, it can be concluded that alcoholic extracts of *Amaranthus spinosus* leaves exhibited significant anti-fungal activity while other extracts showed moderate anti-fungal activity. Chemical constituents present in the extracts might be responsible for this activity.

Keywords: *Amaranthus spinosus*, **Amaranthaceae,Clotrimazole, leaves.**

C-135

Herbal Drugs as Powerful Remedeis For Diabetes

Nikhil Kumar andShamsher Singh Bajwa

Department ofPharmacognosy, ISF College of Pharmacy, Moga-142001, India
nikhilkathuria.nk95951@gmail.com

Abstract:

Traditional Medicines derived from medicinal plants are used by about 60% of the world's population. This review focuses on Indian Herbal drugs and plants used in the treatment of diabetes, especially in India. Diabetes is an important human ailment afflicting many from various walks of life in different countries. In India it is proving to be a major health problem, especially in the urban areas. Though there are various approaches to reduce the ill effects of diabetes and its secondary complications, herbal formulations are preferred due to lesser side effects and low cost. A list of medicinal plants with proven antidiabetic and related beneficial effects and of herbal drugs used in treatment of diabetes is compiled. These include,*Allium sativum*, *Eugenia jambolana*, *Momordica charantia, Ocimum sanctum*, *Phyllanthus amarus*, *Pterocarpus marsupium*, *Tinospora cordifolia*, *Trigonella foenum graecum* and *Withania somnifera*. One of the etiologic factors implicated in the development of diabetes and its complications is the damage induced by free radicals and hence an antidiabetic compound with antioxidant properties would be more beneficial. Therefore information on antioxidant effects of these medicinal plants is also included.

Keywords: Medicinal plant, India, Antidiabetic, Antioxidant, Diabetes

C-136

Qualitative And Quantitative Analysis Of

Caffeine In Some Commercial Brands Of Tea Consumed In India

Deepak Pradhan and P. Biswasroy

Guru Gobind Singh College of Pharmacy, Yamuna Nagar-135001,Haryana, India.
100dphoney9@gmail.com

Abstract:

Caffeine is a common organic molecule found in many beverages such as coffee, tea, energy drinks and cola, which make the drinks addictive**.** Caffeine has drawn more attention due to its physiological effects beyond its stimulatory effect on central nervous system, hence it is used both recreationally and medically to reduce physical fatigue and restore mental alertness when unusual weakness or drowsiness occurs. Caffeine content in various energy drinks and beverage varies from 10 to 50 mg of caffeine per serving; however the US Food and Drug Administration (FDA, 2006) limits the maximum amount in carbonated beverages to 6 mg/oz. **Large amount of caffeine consumption can cause physiological and psychiatrically dependence.**The aim of this study is to determine the concentration of caffeine in tea brands available in India to ensure whether the caffeine concentration in the follow tea as per FDA recommendation or not. There are few reputed brands like Taj, Red Label, Agni and other local brands like Mohini, and Krishna Gopal were studied, by using simple and fast standard UV-Visible spectrophotometric method. The minimum caffeine level was observed in the Mohini brand tea, while Taj tea brand sample showed the highest caffeine content.

Key words: Caffeine, Tea, UV-Visible spectrophotometric method

C-137

Quantitative Analysis of Hyoscine in Different Extracts Obtained from The Seeds of *Datura innoxia* By RP- HPLC

Prativa Biswasroyand Deepak Pradhan

Guru Gobind Singh College of Pharmacy, Yamuna Nagar -135001, Haryana, India
100pbdeepa9@gmail

Abstract:

India has a great wealth of various naturally occurring herbal drugs which have great potential pharmacological activities. *Datura inoxia* is one among such ornamental herb belongs to the family Solanaceae, which bears a beautiful white, purple or yellow color, single or double blossoms flower. From ancient times continuing to the present, especially considering the Datura spp., that to be seeds, it was used in shamanistic rituals as a path to enlightenment. Solanaceae family which is of great economic importance, is one of the largest flowering plant families with about 2,300 species. Besides this, the family is also extremely important as a source of drugs in medicine such as in the treatment of skin eruptions, colds, nervous disorders, narcotic for surgical procedures, anti-spasmodic, anti-asthmatic, narcotic, anti-microbial agent and neuro-sedative, but many are poisonous when used in excess. The phytochemical investigation concluded that the leaves are rich in atropane alkaloids such as scopolamine, hyoscyamine, hyoscine, norscopolamine, meteloidine, flavonoids, cardiacs glycosides, essential oils, saponins and phenols. Today, people frequently experiment with it for the hallucinogenic effect, but the results are so unpleasant (dark visions, disorientation, amnesia, blurred vision, dry mouth, and incontinence) that they seldom recommend the experience. So in this context objective of the current review was to investigate the hyoscine content in different extract prepared with chloroform, ethyl acetate and methanol. The quantitative estimation of hyoscine in different extract was measure by RP-HPLC using PDA detector. The experimental report shows documentary evidence that, the concentration of hyoscine is maximum in chloroform and lowers in methanolic extract.

Key words:*Datura inoxia,* **hyoscine, RP-HPLC**

C-138

Comparative Study of *Asparagus gonoclados* Baker and *Streblus asper* Lour for Hepatoprotective Activity using Carbon Tetrachloride-Induced Toxicity in Rats

Price Shukla, Ranajit DT, Beknal A, Mahoorkar N and Vineeth Chandy

Dept. of Pharmacognosy & Phytochemistry, T. John College of Pharmacy, 88 Kammanahali, Gottigere, Bannerghatta road, Bangalore-560083, India
ankit230021@gmail.com

Abstract:

Asparagus gonoclados Baker is commonly called as Shatavari belongs to the family Liliaceae which is the one of the species of *Asparagus racemosus* Wild. Plant materials were collected from the forest area of Western Ghats of Karnataka particularly located near to Madikere and Sakleshpoor district of Karnataka, and further authenticated in RRI, Karnataka. The

ethano-botanical information indicates that the *A. gonoclados* is an effective source for the treatment of the various disorders such as liver disorder, renal impairment and whooping cough etc. The phytochemical examination showed the presence of phenolic compounds, flavonoids, saponins etc. which may be used for hepatoprotective activity, hence the present study was an attempt to prove the same. *Streblus asper* Lour showed flavonoid & phenolic content which may show the synergistic effect with *A. gonoclados,* hence the present study was carried out with same objectivein 50:50 ratio. Studies proved that combination therapy showed the significant hepatoprotective activity as compared to single drug therapy, in carbon tetrachloride induced liver toxicity. Drug was safe up to 4500 mg/kg body weight. Study showed the significant reduction in SGPT, SGOT and bilirubin levels in animals treated with combine dose than the single dose treated animals when in term compared with the negative control animals, with P <0.001. Cholesterol and acyl carrier protein (ACP) levels also reduces in the combined drug treated animals more than the single dose treated animals with P value <0.001. Histopathological investigation showed the normalization of the hepatic cells in comparison to the negative and positive control animals.

Keywords: *Asparagus gonoclados, Streblus asper*, **Hepatoprotective, Shatavari**

C-140

Standardization and Phytochemical Evaluation of *Ficus benjamina* Stem

Ramandeep Kaur, Pritima and Rakesh K Sindhu

Department of Pharmacognosy and Natural Products
Chitkara College of Pharmacy, Chitkara University, Punjab, India-140401
ramanmavi1997@gmail.com

Abstract:

In the presented research, pharmacognostical and phytochemical investigations were done on the stems of *Ficus benjamina*. The study was done in accordance with the WHO guidelines and other standard parameters. The parameters included morphological characters, extractive values, swelling index, foaming index, ash value, loss on drying, crude fibre content, fluoroscence studies and microscopic characters of transverse section of stem and powder. The stems were thin and cylindrical, having milky sap and were grayish brown in color. The extractive values for various extracts including petroleum ether extract, aqueous extract, ethyl acetate extract, ethanol extract, chloroform extract were 4%, 2%, 2%, 1.6% and 8% respectively. The crude fibre content was found to be 25.5%. The foaming index was found to be 100% but it has not showed any significant swelling index. Ash value included total ash, water soluble ash, acid insoluble ash and sulphated ash calculated as 10.2%, 8.50%, 9.5% and 3.9% respectively. The percentage loss on drying was found to be 29%. The fluoroscence study was done with the stem powder under long UV, short UV and visible wavelengths. The phytochemical screening of the plant was done by using aqueous and ethanol extract. The existence of various metabolites like alkaloids, glycosides, carbohydrates, sterols, saponins, tannins, proteins and flavonoids was observed. It is the first research study ever done on the stems of *Ficus benjamina* and therefore, it can be used for future standardization of this plant.

Keywords: Standardization, Phytochemical screening, Extractive value, Ash value, Fluorescence

C-141

Development and Evaluation of Polyherbal Antiageing Cream

Pritima, Ramandeep Kaur and Rakesh K Sindhu

Department of Pharmacognosy and Natural Products,
Chitkara College of Pharmacy, Chitkara University, Punjab, India-140401
dhimanpreetty1705@gmail.com

Abstract:

The present research deals with the development and evaluation of polyherbal antiageing cream. It comprises of papaya(*Carica papaya*),aloe(*Aloe vera*),turmeric(*Curcumalonga*),lemon(*Citrus limon)*. Along with it stearic acid, cetyl alcohol, mineral oil, methyl paraben, propyl paraben and distilled water were utilized. Various types of formulations were forged with variation in concentration of ingredients paticularly from F1 to F5. The planned formulation was subjected to evaluation upon different parameters like pH, viscosity, irritancy, homogeneity, appearance, acid value, after feel, types of smear, saponification value and removal. F4 and F5 formulation showed pH 5-6, there was no change in color and appearance even after standing for days, soft texture, uniform distribution, of cream was felt and seen and was easily removed with water. Acid value was found to be 4.4 and saponification value 33. Viscosity of the cream was 27089 cps. This research suggests that composition of extracts and base of cream of F4 and F5 are more stable and safe, it may produce synergistic action. Papaya works wonderfully due to the presence of enzyme papain, aloe vera contains 18 amino acids and vit B1,B3,B6 and C that fight off free radicals that

causes wrinkling and elasticity in photoaged human skin. The propensity of adoption of polyherbal antiageing cream infused with the natural ingredients is attaining huge acceptance than synthetic products in both younger generation as well as middle age group people.

Keywords: Papain, Viscosity, Saponification, Polyherbal, *Aloe vera*

C-142

Synergistic Phytochemical Investigations of *Calotropis gigantean* & *Achyranthes aspera* Leaf

Rohtash Singh, Vivek Kumar, Deepak, Mangal Sain Hooda,

Janta College of Pharmacy, Butana, Sonipat, Haryana, India
rohtasrajput@gmail.com

Abstract:

Plants used in traditional medicines are potential sources of new biologically active compounds with numerous therapeutic activities. The *Calotropis gigantean* & *Achyranthes aspera* belong to the family *Asclepiadaceae* and *Amaranthaceae* respectively.Theseplants are used in traditional medicines for a number of ailments. The freshly collected leaves of above plants were screened. The leaves were shade dried & at first defatted with petroleum ether & then with ethanol respectively and the leaf extracts were subjected to various physicochemical studies for the identification of different phytoconstituents.

The percentage yield of *Calotropis gigantean* &*Achyranthes aspera* is (5.1 & 5.25 %) with ethanol extract respectively and in preliminary phytochemical screening flavonoids, triterpenoids, tannins, glycosides and alkaloids wereobserved in *Calotropis gigantean* & *Achyranthes aspera.*

Keywords:*Achyranthes aspera, Calotropis gigantean*, **Phytochemical screening**

C-143

Physico-Chemical and Phytochemical Analysis of *Wedelia chinensis* Merrill Leaf

Baldev Singh and Kundan Singh Bora
Department of Pharmacognosy, School of Pharmaceutical Sciences, Sardar Bhagwan Singh Post Graduate Institute of Biomedical Sciences & Research, Balawala, Dehradun, Uttarakhand – 248001, India
kundan1381@gmail.com

Abstarct:

Wedelia chinensis (family: Asteraceae), commonly known as Pilabhangra has been traditionally used for the treatment of various ailments like jaundice, cholagouge, diarrhoea, cephalahagia, respiratory disorders, to reduce the mental tension and in anxiety. Despite a long history of uses, no scientific pharmacognostic standardization has ever been carried out on this plant, hence present attempt was undertaken to investigate physico-chemical and phytochemical analysis of *W. chinensis* leaf. In physico-chemical analysis, ethanol and water soluble extractive value were estimated to be 2%, 7.4%, 2.75% and 4.25% respectively. Moisture content of air dried leaves of *W. chinensis* was found to be 8.25%. The total ash, acid insoluble ash, water soluble ash and sulphated ash was estimated to be 14.66%, 1.32%, 9.79% and 7.18% respectively. Phytochemical screening showed presence of mainly phenolic, flavonoids, saponins and tannin compounds in hydroalcoholic extract of *W. chinensis.* The standardization parameters evaluated in the current study would provide a way for the standardization of raw materials and formulation of herbal origin as well as comply the latest GMP and FDA guidelines on standardization of herbal drugs.

Keywords: *Wedelia chinensis,***Pharmacognostic evaluation, Physico-chemical analysis**

C-144

Pharmacognostic Evaluation of *Wedelia chinensis* Merrill Leaf

Mahamedha and Kundan Singh Bora

Department of Pharmacognosy, School of Pharmaceutical Sciences, Sardar Bhagwan Singh Post Graduate Institute of Biomedical Sciences & Research, Balawala, Dehradun, Uttarakhand, India
kundanresearch1381@gmail.com

Abstarct:

Recently, WHO has suggested the evolution of the effectiveness of plants in condition wherever there is lack of safe synthetic drugs.The plant *Wedelia chinensis* (family: Asteraceae) has been traditionally used for the treatment of various ailments like jaundice, cholagouge, diarrhoea, cephalahagia, respiratory disorders etc. The decoction of plant was extensively used by the tribes of Kolli Hills of Namakkal, Tamil Nadu, India used to induce sleep, reduce the mental tension and in anxiety. Despite a long history of uses, no scientific pharmacognostic evaluation has ever been carried out on this plant, hence present attempt was undertaken to investigate pharmacognostic studies of *W.*

chinensis leaf. Transverse sections of *W. chinensis* leaf under the microscope showed scattered vascular bundles, various types of multicellular covering trichomes, occasional glandular trichomes etc. The powdered drug under the microscope showed various types of multicellular covering and occasional glandular trichomes, uniseriate (collapsed) covering trichome, paracytic stomata, xylem vessels etc. The findings of the current study could serve in the correct identification and preparation of a monograph on this plant.

Keywords: *Wedelia chinensis,* **anxiety, pharmacognostic, monograph**

C-145

Isolation, Characterization and Estimation of Marker Compounds of *Vernonia anthelmintica* Willd.

Karanpreet Kaur, Amanpreet Kaur, Deepak Kumar and Suresh Kumar

Department of Pharmaceutical Sciences and Drug Research, Punjabi University, Patiala-147 002, Punjab, India
thakur_pu@yahoo.com

Abstract:

Standardizationof the plant on the basis of bioactive marker is required to ensure its efficacy and safety. *Vernonia anthelmintica* Willd. (Janglijiri, family – Asteraceae)is one of such traditional plants of Indian system of medicine, which has not been standardized systematically on the basis of main bioactive constituent. Thus, it was envisaged to isolate main chemical constituent(s) from *V. anthelmintica* and to standardize plant material on the basis of isolated constituent(s) by a developed and validated TLC densitometric method. Chloroform and methanol extracts of the plant were prepared successively in a Soxhlet apparatus. Preliminary phytochemical screening of methanol extract showed presence of carbohydrates, proteins, tannins and flavonoids. A standard procedure was adopted to get phenolic compounds and flavonoids rich fraction from crude methanol extract by fractionation with ethyl acetate solvent under standardized conditions. The fraction was subjected to column chromatography with a view to isolate main components. Eight pooled sub fractions (F_1-F_8) were made from above fraction. F_3 yielded yellowish amorphous powder (AK-1). F_4 yielded orange crystalline compound (AK-2). AK-1 was identified as mixture of two isomeric compounds, which were characterized as 3 →*A* →5,6,7 and 3 →*A* →5,7,8 pentahydroxy flavanone on the basis of spectral data. AK-2 was characterized as butein. The available literature reveals that butein, a chalcone derivative, exhibits multifarious pharmacological activities. Therefore, it was taken as a bioactive marker for standardizing *V. anthelmintica* seeds. A TLC densitometric method was developed for quantitative determination of marker compound in *V. anthelmintica* seeds. The content of butein was found to be 0.001252% w/w.

Keywords: Flavonoids, Janglijiri, TLC Densitometer, *Vernonia anthelmintica*

C-146

Neuropharmacological Activityof Azadirachta Indica Leaves on Diabetic Rodunts

Anju Balkrishna Bhandole

Patel College of Pharmacy, PGOI Campus, Ratibad– 462044, Bhopal, Madhyapradesh, India.
bhandoleanuj12@gmail.com

Abstract:

According to the obtained results in the present study, ethyl acetate extract of Azadirachta indica leaves (50, 100 & 200 mg/kg/day, p.o.) can exert positive effects within two weeks in the treatment and decreasing the physiological symptoms of diabetic neuropathy in rats. In the present study, response time to immobility in tail suspension and force swim test showed significant decrease in comparison to the diabetic group.

Keywords: Hyperglycaemia, Endocrine disorder, Insulin, neuropathy

C-147

Picroside-I and II A Possible Therapeutic Agents Against Diabetic Complications; Inhibition of Aldose Reductase and Advanced Glycation End Products Formation

Ajmera Ramarao and Ciddi Veeresham

University College of Pharmaceutical Sciences, Kakatiya University, Warangal-506009, AP, India.
ciddiveeresham@yahoo.co.in

Abstract:

Various mechanisms including polyol pathway along with advanced glycation end products (AGE) formation have been implicated in the pathogenesis of diabetic nephropathy. The present study was aimed at investigating a well known iridoid glycosides, Picroside-I and II for its therapeutic role in streptozotocin-induced diabetic nephropathy in rats. The

effect of Picroside-I and II was investigated by assessing the key markers of kidney function along with the morphological changes in the kidney. Further, the effect of Picroside-I and II on the formation of AGEs, aldose reductase (AR) inhibition and lipid peroxidation was compared with that of a standard AR inhibitor, fidarestat. The results revealed that Picroside-I and II significantly decreased the blood glucose levels, urinary protein excretion, serum creatinine and blood urea nitrogen in diabetic rats. Administration of Picroside-I and II to diabetic rats decreased kidney lipid peroxides and nitrate levels along with decrease in AGEs formation. In addition, Picroside-I and II was found to inhibit kidney AR activity with a decrease in serum TGF β levels. Thus, the results obtained in this study underline the potential of Picroside-I and II as a possible therapeutic agent against diabetic complications such as nephropathy.

Keywords: Picroside-I and II; Diabetic complications; Aldose reductase; Diabetic nephropathy

C-148

Evaluation of *In Vitro* Glycosidase Inhibitory Activity of Alcohol, Hexane and Chloroform Extract of *Achyranthes aspera*

P.Adinarayana, S.Pujitha, P.Niharika and S.Manohar Babu

Department of Pharm D, SIMS College of pharmacy, Mangaldas nagar, Guntur.
pylaadinarayana007@gmail.com

Abstract:

Diabetes mellitus is a chronic metabolic syndrome with life-threatening complications.Despite the enormous progress in conventional medicine and pharmaceutical industry, herbal based medicines are still a common practice for the treatment of diabetes. *Achyranthes aspera* (Uttareni) belongs to the family *Amaranthaceae* is an annual stiff erect herb, about 0.3-0.9m high and found commonly as a weed throughout india. Our present study is focused on evaluating the hypoglycemic activity of *Achyranthes aspera*. This paper explains evidence base information regarding the α-glucosidase inhibitory activity of alcoholic extract and chloroform and hexane extracts of *Achyranthes aspera*. The alcohol, chloroform and hexane extracts found to have phytochemicals such as tannins, phenolic compound, triterpenoids, alkaloids, flavonoids and saponins. Hypoglycemic activity of the three extracts were evaluated by *in vitro* α – glucosidase inhibitory activity using DNS (Method I) and iodine reagents (Method II). Method I inhibitory activity of Alcohol, Hexane extracts were found to be high compared to standard Voglibose, while chloroform and hexane extracts shown good inhibitory activity when evaluated by method II.

Keywords: *Achyranthes aspera*, **α-glucosidase inhibitory activity, Hypoglycemic**

C-149

Analytical Evaluation of Herbal Formulation

Shreya Setiya, Priyanka Badgujar, Tanvi Shah, Sanjay Sharmaand Abhishek Jain

SVKM's NMIMS, School of Pharmacy and Technology Management, Shirpur Campus, Maharashtra. India
shreyajain12317@gmail.com

Abstract:

Herbaceous medications involve herbal formulations,herbs, raw herbs or refined products from herb. Ayurveda mentions the detail use of variety of herbs in treatment of number of diseases. In present scenario larger requisition for medicines of plant origin is observed in all growing countries and these can be utilised in the form of drug or for modifying beauty or in the form of nutraceuticals. To maintain coordination between qualities of processed substances, an unprocessed substances and finished herbal product, augmentation of descent and impressionable quality control procedure is necessary.Evaluation of herbal formulation indicates ratification of its purity and quality. The chromatographic approach and inclusive methods like fingerprints and multicomponent quantification, hyphenated techniques such as HPLC- MS and GC-MS are suggested here.

Keywords : Herbal formulation, Chromatographic technique, Hyphenated techniques

C-150

Preliminary Phytochemical and Pharmacological Activities of Ethanolic Extract of Roots of *H. schulli*

Atul Hemke, Mithun Rangari and Milind Umekar

Department of Pharmaceutical Chemistry, Smt. Kishoritai Bhoyar College of Pharmacy, New Kamptee, Nagpur, Maharashtra, India -441002
atulhemke321@gmail.com

Abstract:

The present investigation deals with phytochemical studies of *H. schulli* root extracts and evaluation of its

pharmacological activities. The dried powder of roots was successively extracted with petroleum ether and ethanol and preliminary phytochemical screening shows the presence of bioactive constituents. Ethanol extract showed significant antibacterial activity at 50µg/mL against *Bacillus subtillus* using dimethylsulfoxide as negative control.Antioxidant activity of extract was evaluated spectrophotometrically by DDPH assay using BHT as standard. The ethanolic extract with IC_{50} 88.06µg/mL compare to IC_{50} of BHT 61.53µg/mL indicates potential antioxidant activity. Cytotoxic activity of extract of *H. schulli* was determined by brine shrimp bioassay technique. The result of cytotoxic activity was found to be promising with LC_{50} of 56.37µg/mL whereas LC_{50} of vincristine sulphate was 31.26µg/mL. The experimental result indicate that ethanoloic extract of *H. schulli* root have phytopharmacological activities, demanding isolation to know the constituents responsible for these bioactivities.

Keywords: *Hygrophila schulli,* **Antibacterial, Antioxidant, Cytotoxic Activity**

C-151

Pharmacognostical Evaluation of the *Prunus persica*. Leaf

Monika Rana, Preeti Avasthi and Deepak Bhagwat

Maharaja Agrasen School of Pharmacy, Baddi, H.P
sairana.rana43@gmail.com

Abstract:

Prunus persica Linn. Batsch (Family: Rosaceae), commonly known as Peach tree in English and Aru in Hindi. The leaves of the plant are used as anthelmintic, insecticidal, laxative, sedative and vermicidal and also in the treatment of piles, leucoderma, and whooping cough.Pharmacognostic studies have not been carried out so far in this plant. So, the present study was undertaken to evaluate. Pharmacognostic characters of leaf of *Prunus persica*. The microscopy, phytochemical screening, physicochemical evaluation and fluorescence analysis of the plant were done according to the standard procedure recommended in the WHO guidelines. Leaves are simple, laneolate, 7-16 cm long, 2-3 cm broad, pinnately veined. Transverse section of leaf showed presence of stoma covered with guard cells followed by epidermal cells. The stomata was found to be anisocytic. The lamina of the leaf was found to be dorsiventral as palisade cells were present below upper epidermis. Ash and extractive values, were estimated. Leaf powder showed fluorescence under the influence of different solvents. Preliminary phytochemical screening of hydro alcoholic extract showed the presence of carbohydrates, tannins, flavonoids, steroids, proteins. The study forms the first report on pharamcognostic characters for *Prunus persica* which could be useful for identification and authentication of the plant.

Keywords:*Prunus persica*, **Microscopy, Physiochemical analysis, Pharmacognostical evaluation**

C-152

Preparation and Evaluation of Poly Herbal Syrup for Cough & Cold

P.Pravalika, V.Nagamani, G.Navya and

R.V.Koteswararao Y.Vamshi Vishnu

Department of Pharmaceutical Sciences, Aurobindo college of Pharmaceutical Sciences, Warangal, Telangana State, India.
venkatakoteswararaorayala@yahoo.com

Abstract:

In recent years there is a spurt in the interest regarding survival of Ayurvedic forms of medication. In the global perspective, there is a shift towards the use of medicine of herbal origin, as the dangers and the shortcoming of modern medicine have started getting more apparent, majority of Ayurvedic formulation are prepared from herbs. Syrup is very popular dosage form of cough and cold, ease of patient compliance. The objective of this study is to develop a polyherbal cough syrup and evaluate the physicochemical parameter along with turbidity/ homogeneity were compared with the changes in accelerated stability testing. Quality of final herbal syrup was evaluated with the parameters: pH, density, total solid content. Three batches were formulated with simple syrup 40%, 50%, 60% w/v .as sugar base. All the batches were evaluated for physicochemical parameters, colour, odour, taste, spec. gravity, pH, total solid content. i.e. Specific gravity (1.24 – 1.36), pH (4.8-5.0), solid content (37- 56.75%). The formulated batches under gone stability studies and microbial test, no turbidity were observed for three months studies and no microbial growth were seen. All the batches assure the reproducibility and each parameter were complying with specifications.

Keywords: Poly herbal formulation, Liquid dosage form, Syrup, Physico-chemical parameter, Accelerated stability studies

C-153

Isolation and Characterization of Oleonolic Acid

and Lupeol from *Vitex negundo* Leaves

Zohra Khatoon, Jyotiram Sawale, Rajkumari Thagele and Mohan Lal Kori

Vedica College of B.Pharmacy:A constituent Institute of RKDF University,Bhopal, M.P. India
mohanlalkori@gmail.com

Abstract:

Vitex negundo is commonly known as nirgundi belonging to family Verbanaceae and is found throughout India. Ithas been traditionally reported for the treatment of depression, malaria, venereal diseases, asthma, wounds, skin diseases, anti-inflammatory, analgesic, ulcers and snake bite. The secondary metabolites in a pure form such as flavonoids, iridoids,sesquiterpene, diterpenes, lignans and plant steroids have been isolated and identified previously. In the present research work a triterpenoids i.e. oleonolic acid and lupeol isolated and characterized for the first time from *Vitex negundo* leaves.

Keywords: Triterpene, Lupeol, Nirgundi, Vitex

C-154

Antidiabetic Examination in the Crude Drug of *Cassia auriculata*

Divya P, Pushpaveni.c, Ranjith and Vineeth Chandy

T.John College of Pharmacy, Bangalore, Karnataka,India
divyapriya12196@gmail.com

Abstract:

Cassia auriculata /Senna auriculata commonly known as (AVARAM) in tamil. It is widely used in India for folk medicine. It has a various pharmacological actions like anti-inflammatory, antipyretic, antibacterial, antioxidant and anti-diabetic etc. Cassia flowers of plant is widely used to treat various skin disorder, reduction of body heat. In India this disorder is an alarming condition as compared to most of the developed countries. The cassia auriculata is easily available in river sides such as Tamilnadu, Karnataka, India .The powderd drug were extracted with ethanol and aqueous of leaves . The albino rats were treated with ethanolic extract it showed a significant reduce ($p<0.001$) in blood glucose level in diabetic rats. From this the present was concluded that ethanolic extract of cassia auriculata had showed a more reduction in blood glucose level than aqueous extract.

Keywords: *Cassia auriculata*, **Anti diabetic, Tamil nadu**

C-155

Pharmacognostical Studies and Isolation of Plant *Sorghum halepense* (L). Pers Extracts

Pooja Upapdhyay, Nitin Kumar and Anupama Singh

Department of Pharmaceutical Sciences, Branch – Pharmacognosy – Sardar Bhagwan Post Graduate Institute of Biomedical Sciences & Research, Balawala, Dehradun, Uttarakhand, India
poojaupapdhyayuk@gmail.com

Abstract:

Extraction is the crucial step for the analysis of medicinal plants, because it is necessary to extract the desired chemical components from the plant materials for further separation and characterization. Poaceae comprises of about 10,000 species and 793 genera (Watson and dllwiz 1994). The ecological diversity of the grass is largest complemented by the great genetic diversity. Plan of work divide into six major steps, standardization parameters for *Sorghum halepense* (L) .Pers. Identification and estimation of phyto constituents and isolation of potential extract. For the standardization of *Sorghum halepense* (L). Pers different parameters was performed (Microscopy, Ash value, Extractive value, Loss on drying, Forigen organic matter, Swelling index, Crude fibre content and foaming index). After the standardization of *Sorghum halepense* (L).Pers, extract was collected and chemo profiling (Phyto chemical screening, TLC, etc) for the identification of constituents and quantitative estimation was done (Determination of Total phenolic content and determination of total flavonoid content).After the chemo profiling Isolation of different extract was collected in column chromatography for chloroform and ethanolic extract of *Sorghum halepense* (L).Pers leaves. We were collected the 120 fraction of chloroform extract and 119 fraction of ethanolic extracts. They were sent to IIT Roorkiee for further characterization such IR, NMR, GCMS. And chloroform extract fraction range between 52-70 show the report of all analysis data match with mandelic acid; and after the structure elucidation confirm that fraction was mandelic acid.

Keywords: Extraction, chromatography, GCMS, mass spectroscopy

C-157

Elemental Analysis of *Elaeocarpus ganitrus* Fruit by Wavelength Dispersive X-Ray Fluorescence Spectrometer

Sunil Jawla[1], D.V. Rai[2], Ramesh Sharma[3]

[1]Adarsh Vijendra Institute of Pharmaceutical Sciences, Shobhit University, Gangoh, Saharanpur, UP, India 247341
[2]Center for Biological Engineering, Shobhit University, Gangoh, Saharanpur, UP, India 247341
[3]Sophisticated Analytical Instrumentation Facility (SAIF), CIL and UCIM, Panjab University, Chandigarh, 160014

Abstract:

Elaeocarpus ganitrus (Rudraksh) is an important medicinal and devotional plant in Indian sub-continent. Medicinal and healing properties of this plant are reported in ancient literature. Consumption of fruits by animals and birds indicates the nutritional importance of plant as reported by various researchers. Fruit was collected from Dehradun, India, and studied for mineral analysis by using wavelength dispersive X-Ray fluorescence spectrometer.

The mineral concentrations (mg/100 g) were significantly ($P < 0.05$) varied and ranged in fruit pulp: magnesium (80.23-83.69), calcium (50.11–61.95), Iron (21.36–26.64), potassium (147.85–154.20), zinc (4.76–5.92), phosphorus (130.62–135.32), and sodium (3.33–8.31) on dry weight bases. The above study reveals that consumption of these nutrient-rich fruit pulp may help to supplement/formulate the diets and alleviate the problems associated with malnutrition in the developing countries.

Keywords: Nutritional analysis, Rudraksh, fruit pulp, *Elaeocarpus ganitrus*, nutritional value

C-158

Antioxidant activity of Methanol extract of Banafsha and its Ethyl acetate fraction by DPPH method

Pooja Singh, Reecha Madaan and Rajni Bala

Chitkara College of Pharmacy Chitkara University, Rajpura, Punjab, India
reecha.madan@chitkara.edu.in

Abstract:

Marketed sample sold under the name of *Banafsha* were investigated for phytochemical constituents and Antioxidant activity. Traditionally plant is very much effective in jaundice, anti-inflammatory, anti-pyretic, anti bacterial, cough suppression and hepatoprotective activity. Banafsha is one of the ingredients in "Joshanda" which is used in form of decoction for cough & colds. Banafsha was purchased from the local market of Ambala and authenticated. The plant was extracted in soxhlet apparatus with methanol and its Ethyl acetate fraction was prepared by partitioning methanol extract. Phytochemical screening of methanol extract showed the presence of Alkaloids, Tannins, Flavonoids, Cardiac glycosides and reducing sugar. *In vitro* Antioxidant activity of methanol extract and its ethyl acetate fraction was calculated in terms of percentage inhibition of DPPH scavenging power and IC_{50} value using standard curve of Rutin. The linearity of the calibration curve was achieved between 2-10 µg/ml concentration for rutin (R^2=0.993). Ethyl acetate fraction of Banafsha possessed higher antioxidant activity than methanol extract. IC_{50} value of methanol extract and its ethyl acetate fraction of Banafsha was found to be 274.32 and 183.75 respectively. These findings suggest that the rich polyphenol content of *Banafsha* and its good antioxidant activity may be responsible for its popular and wide traditional use.

Keywords: Banafsha, *Viola odorata*, Antioxidant activity

C-159

Preparation and Evaluation of Face Wash Containing Poly Herbals

V.Nagamani, R.Koteswararao, G.Navya and Y.Vamshi Vishnu

Department of Pharmaceutical Sciences, Aurobindo College of Pharmaceutical Sciences, Warangal, Telangana State, India
mccosmoceuticals@gmail.com

Abstract:

The aim of the present study is to evaluate the enhancement of beauty by a herbal face wash which may play a important role into day's cosmetic world. skin consist of amino acids, lipids and carbohydrates etc, so that a balanced nutrition is acquired for the skin to keep it clear, glossy and healthy, Present research article deals with the formulation and characterization of cosmetic herbal face wash preparation. In ancient times women are very conscious about their beauty and started to dress themselves because they wanted to increase their own beauty. Now a days, it comes with great effort to protect the skin from external dirt and pollution. Chemicals used in the cosmetics also tends to effect the skin in many ways. It is a very good attempt to establish the herbal face wash containing herbal powder of neem leaves powder, turmeric rhizomes powder, orange peel powder, lemon peel powder, aloevera, tulsi powder which are natural & harmless to the skin. It comes with great potential in the cosmetic world.

Keywords: Herbal Cosmetics, Neem, *Aloevera*, Turmeric rhizomes, Face wash

C-160

Investigation of Phytochemical Screening and In-Vitro Anthelmintic Activity of *Zaleya decandra*(L)

P.Bhavana, K.Suresh, M.Srishailam, K.Ramanjaneyulu and D.Santosha

Department of Pharmacognosy
Vishnu Institute of Pharmaceutical Education and Research, Narsapur, Vishnupur, Medak dist, Telangana, India

Abstract:

The aim of the present study was to explore the phytochemical screening and *in vitro* anthelmitic activity of *Zaleya decandra*(L). Extract of *Zaleya decandra* was taken for anthelmintic activity against Indian earthworm *Pheretima posthuma*.Various concentrations of aqueous extract was evaluated(20,30,40,50mg/ml). Albendazole drug was used as standard drug. Albendazole causes death of the parasite. The results were expressed in terms of time taken for paralysis as well as death of *Pheretima posthuma.* At 50mg/ml the extract exbhitted maximum potential when compared to albendazole.

Keywords: *Zaleya decandra,***Phytochemical screening,Aqueous extract, Anthelmintic activity, Albendazole**

C-162

Formulation, Evaluation and Standardization of *H. isora* Extract

Snehal Gaikwad, Chandrashekhar Bhingare, Prasad Kadam and Manohar Patil

Department of Quality Assurance Techniques, Marathwada Mitra Mandal's College of Pharmacy, Thergaon, Pune, India
Gaikwad.snehal251994@gmail.com

Abstract:

In the indigenous system, *Helicteres isora* Linn is widely prescribed for colic pain, griping of bowels and flatulence. The fruits are claimed to possess very good antispasmodic activity. Hence it was thought to investigate and to validate the claims made in Indian traditional system of medicine. According to World Health Organization (WHO) the macroscopic and microscopic description of a medicinal plant is the first step towards establishing the identity and purity of drug, it should be carried out before performing any other tests. Syrup formulation was prepared because it is easy to administer and bitter taste of extract can be easily masked by use of sucrose. Syrup was evaluated for different parameters which showed the value within the limit. Therefore syrup is good as compared to marketed syrup. Chick ileum was used for in-vitro evaluation of antispasmodic activity because one of the study showed that the chicken ileum may be one of the best, cheapest and easily available non mammalian tissues for experimentation on isolated organs and amongst various solutions Ringer Lock is the most suitable physiological solution. Since the drug inhibited acetylcholine spasms, it could be concluded that the extract inhibited muscarinic receptors. HP-TLC is most commonly used in standardization of herbals and herbal products. HPTLC study showed that the band at Rf 0.3 showed approximate equal area in extract as well as formulation. Hence this method can be used as standardization method.

Keywords: *Helicteres isora* **Linn, anti-spasmodic activity.**

C-163

Formulation, Characterization &*In Vitro - In Vivo* Evaluation of Pippali Lozenges for the Treatment of Cold & Cough

P.Pavani, R.Nainetha, R.V.Koteswararao and Y.Vamshi Vishnu

Department of Pharmaceutical Sciences, Aurobindo College of Pharmaceutical Sciences, Warangal, Telangana State, India

Abstract:

Development of new dosage forms without disturbing the basic principles of Ayurveda is a need for the global acceptance. Herbal lozenge prepared from Pippali (*Pipper longum* Linn.) is a well known preparation mentioned in Ayurvedic pharmacopeia. Powder form has few difficulties in the pharmaceutical processing such as taste, problems in administration difficulties etc. Present study is an attempt made to overcome the problems by developing new dosage form of Pippali powder into herbal lozenges.and their pharmaceutical standardization. Herbal lozenges were prepared by using Jaggery & milk powder as a base along with Xanthan gum (binder), Tartaric acid, Malic acid. During developing lozenge different concentration i.e. Jaggery & Milk powder were taken in 2:1.2 to 2:1.5. Jaggery & Milk powder ratio was optimized (2:1.5). Evaluation studies (weight variation, hardness, thickness, Disintegration, Mouth residence time) were also done to the prepared formulations. JL4 Herbal lozenge is more stable, palatable dosage form, superior for commercial purpose and can be administered at fixed unit dose. Stability studies were also performed as per ICH guidelines, observed considerable changes in the formulations.

Keywords: Pippali (*Pipper longum* Linn.), Milk powder, Jaggery, Ayurvedic pharmacopeia, Herbal lozenges.

C-164

Herbal Renaissance for the Treatment of Osteoarthritis: Need of Hour

Priyanka Kriplani, Kumar Guarveand Uttam Singh Baghael

Guru Gobind Singh College of Pharmacy, Yamuna Nagar-135001, Haryana, India.
Khalsa college of Pharmacy, Amritsar-143001, Punjab, India.
priyanka15n@gmail.com

Abstract:

Osteoarthritis (OA) is a degenerative joint disorder is the most frequent causes of pain and disability in old age and middle aged people. Increasing age and obesity are the major reasons behind prevalence of OA. Every year in India, OA affects over 15million Indians each year and is the leading cause of disability. Orthopedicians are increasingly diagnosing younger people in the age group of 35 – 55 suffering with this disease. Treatment of OA rests on nonsteroidal anti-inflammatory drugs (NSAIDs), intraarticular corticosteroid injection, oral acetaminophen and capsaicin. However, long term utilization of these synthetic drugs has led to various adverse effects like gastrointestinal damage, liver injury, infections and heart failure. Before chemists designed these synthetic bullets, the future of medicine is rooted in the past. Herbs are again staging a comeback; herbal 'renaissance' is occurring all over the globe. Aloe vera, boswellia, cat's claw, eucalyptus, ginger, punarnava, curcumin and arnica etc are the various herbs used against arthritis. However these herbs suffer from various problems like instability, low aqueous solubility, toxicity etc. Novel drug delivery system has opened new means for delivery and administration of herbal drugs; by increasing their solubility, enhancing stability, protection from toxicity, enhancing pharmacological activity, sustained delivery and providing protection from chemical and physical degradation. Various novel drug delivery systems are reported in the literature such as liposomes, niosomes, microspheres and phytosomes for the delivery of herbal drugs.

Keywords: Osteoarthritis, Herbs, Novel Drug Delivery

C-165

Sphagnum: Natural Drug Discovery with Formulation Prospective

Priyanka Bhosale, Ankita Chavare, Prasad Kadam and Manohar Patil

Department of Pharmacognosy, Marathwada Mitra Mandal's College of Pharmacy
Thergaon, Pune, India
priyanka.bhosaleagcop@gmail.com

Abstract:

Herbal formulations are continuously gaining attention as the therapy for many of the ailments in the Modern era; hence it becomes the prime responsibility of the herbal product manufacture to use standardize raw material in the formulations. It will provide adequate quality, efficacy, safety and satiability to finished product. The current project involved a multidisciplinary approach consisting of, Pharmacognostic Approach, Phytochemistry and New Drug Discovery, Applied Medicinal Chemistry Approach, Formulation and Quality Assurance Technique Approach, Pharmacology Approach and Analytical Chemistry Approach. In the present study, Analytical Pharmacognosy, Extraction was performed by using sophisticated techniques like Digital Microscopy and Lyophilization etc.; respectively. The extracts and novel isolated compounds were screened for molecular docking and used as Analytical marker/Chemical markers in the Conventional and Novel formulations which were standardized by different analytical methods using sophisticated instruments. The Project exploring untapped flora like *Sphagnum* as a medicinal agent in Phytochemistry, Pharmacology point of view and formulate and evaluate conventional formulations including analytical method development using spectroscopy and Chromatography. Conventional formulations prepared in present study were fully standardized and found to be stable in analytical point of view and moreover possess prominent *in vivo* anti-inflammatory activity. So it can be proved the leading step towards milestone in the world of herbal industries and establish the regulatory standards for herbal products.

Keywords: Anti-inflammatory, Quality Assurance Techniques, *Sphagnum*

C-166

Preliminary Phytochemical Screening and Evalution of Antimicrobial Activity of *Prosopis juliflora*(Sw.) Dc. Stem Bark

P.Senniappan[1], B.R.Balakrishanan[1], B.S.Venkateshwarlu[1] and K.Srinivas[2]

[1] Department of Pharmacognosy, Vinayaka Mission's College of

Pharmacy,
Vinayaka Missions Univarsity, Salem, Tamilnadu, India
[2] Sri Vasavi Institute Pharmaceutical Sciences, Tadepalligudem, W.G. Dist,
Andhra Pradesh, India
senniappan1979@yahoo.co.in

Abstract:

Prosopis juliflora (SW.) DC is a thorny shrub or small tree in Fabaceae family, a kind of mesquite native to tropical America. In India these plants all over prevalence as exhausting weed.The plant is used in folk remedies for catarrh, cold, diarrhoea, dysentery, excrescences eyes, flu, hoarseness, inflammation, itch, measles, pinkeye, stomach ache, sore throat, and wounds. The present study was aimed to perform preliminary phytochemical screening, and *in vitro* antimicrobial study of the stem bark of *Prosopis juliflora*. The study revealed that the appropriate solvent extracts showed the presence of sterols, alkaloids, terpenoids, flavonoids (mesquitol), saponins, resins, carbohydrates and proteins. The quantification of phytocompounds is analyzed with the stem bark powder of the plant,were results shows that the bark contains flavonoids as major content followed by alkaloids, total phenols and tannins. Antimicrobial study revealed that, the ethanol extract (200µg/ml) showed significant inhibitory activity against microorganisms such as *Staphylococcus aureus, Bacillus subtilis, Escherichia coli* and *Pseudomonas aeruginosa*. These studies provide a scientific support to the selected medicinal plant which claims its use in folklore medicine.

Keywords: *Prosopis juliflora,* **Mesquite, Mesquitol, Antimicrobial activity.**

C-167

Formulation Development and Evaluation of Polyherbal Toothpaste

Rakesh K Sindhu[1], Divya Sharma[1], Gagandeep Kaur[1] and Mansi Chitkara[2]

[1]Department of Pharmacognosy and Natural Products, Chitkara College of Pharmacy, Chitkara University, Chandigarh Patiala NH-64, Rajpura, Patiala, Punjab, India
[2]Nanomaterials Research Laboratory, Chitkara University, Chandigarh Patiala NH-64, Rajpura, Patiala, Punjab, India
rakeshsindhu16@gmail.com

Abstract:

Herbal products have emergent demand in the global market. People believed using product made up of natural sources ingredient are safe, effective and less toxicity than the synthetic chemicals. The aim of the present study was to prepare and evaluate polyherbal toothpaste. The polyherbal toothpaste was formulated using extracts of neem leaves, papaya leaves, haldi and lemon peel. The formulations were subjected to various evaluation tests like pH, spread ability, abrasiveness, foaming and cleaning ability, fineness, moisture and volatile content, tube inertness, stability studies along with antimicrobial activity. The formulated toothpaste showed acceptable physiochemical results as per standard guidelines and potent inhibition against tested microbes. It is a good attempt to establish such polyherbal toothpaste of good quality, which helps in decreasing growth of microbes in the mouth.

Keywords: Toothpaste, Polyherbal, Neem leaves, Papaya, Antimicrobial

C-168

Preliminary Phytochemical Investigation and Anti-oxidant Activity of *Mangifera indica* leaves

Monika Saini, Samrat Chauhan and Himanshu

Guru Gobind Singh College of Pharmacy, Yamunanagar, Haryana, India-135001
Monika210692@gmail.com

Abstract:

Mangifera indica belonging to the family Anacardiaceae commonly found in tropical and subtropical regions is the one of the edible fruits trough out the world. The extracts from the stem bark and fruits are known to contain vitamins, polyphenols, terpenoids, steroids, fatty acids and trace elements and reported to possess various biological activities. In folk medicine, the leaves of the plant had been widely used to several ailments, but there is paucity of scientific evidence for active phytoconstituents, anti-oxidants of leaves. With this background, the present study was aimed to reveal active phytochemicals, and to evaluate the anti-oxidant activity of different extracts of leaves. The powder of dried leave was successively extracted with ethyl acetate and hydro alcohol (60:40, ethanol: water) solvents by soxhlet apparatus for 72 hrs. The extracts were subjected to preliminary phytochemical analysis such as detection of terpenoids, Flavonoids, Phenols, Tannins, Alkaloids, Glycosides, and Saponins.

Key words: Antioxidant, Mangifera indica, Poyphenols, phytochemical.

C-169

Isolation of Pectin from *Emblica officinalis&Linum unitatissimum* Using Microwave Assisted Extraction Technique and Compare with Conventional Extraction Method

Praveen Goyal

Alwar Pharmacy College, Alwar, Rajasthan, India
goyalprvn09@gmail.com

Abstract:

Recent studies indicate that microwave assisted extraction for extraction of constituents from plant material is good alternative to conventional extraction method. A microwave assisted extraction technique was developed to optimize the extraction and isolation of pectin from several commonly used plant sources. Aqueous extract from two plant containing pectin like *Emblica officinalis* and *Linum unitatissimum* were prepared by using conventional and microwave method. The yields obtained by microwave extraction were found to be higher than conventional extraction method. Microwave extraction at 140w intensity and 10 minute heating period produces higher yield of pectin when compared to 1hr conventional heating in both two plant sources used. The yield of pectin from *Emblica officinalis* and *Linum unitatissimum* by microwave method was found to be 8.88% and 1.49% more than obtained by conventional method, respectively at 140w intensity for 10 minute. Product obtained by both methods was similar nature in physical and chemical properties. The developed microwave procedure can be used successfully in commercial and routine laboratory for the isolation of pectin.

Keywords: *Emblica officinalis*, *Linum unitatissimum*, **Microwave assisted extraction (MAE), Pectin.**

C-170

In- Vitro Free Radical Scavenging Activity, Pharmcacognostic Standardization &Phytochemical Evaluation of *Machilus macrantha* Ness. Root

Vishal G Beldar, Dr. Anilkumar U Tatiya and Dr. Malleshappa N Noolvi

Department of Pharmacognosy, Shree Dhanavantary Pharamcy Collage, Kim, Surat, Gujarat, India.
vishalbeldar1994@gmail.com

Abstract:

In the current research, *In-vitro* antioxidant activity, pharmcacognostic standardization & phytochemical evaluation of *Machilus macrantha* Ness. Root was performed. Previous studies has been reported for pharmacognostic studies of root but those studies are not fulfill the standardization criteria therefore, the objective behind the study to establish the standardization parameters for complete pharmacognostic evaluation of root of *Machilus macrantha* Ness (Lauraceae), an important traditional medicinal plant utilized for management of asthma, rheumatism, tuberculosis, ulcerations, bone fracture and weakness. Systematic pharmacognostical evaluation of root of the plant has been carried out with respect to macroscopy, microscopy, physicochemical parameters, florescence analysis, TLC profiles, phytochemical standards and GC-MS analysis ofroot bark. Preliminary phytochemical analysis revealed presence of alkaloids, carbohydrates, tannins and phytosteroids. Eleven bioactive compounds present in methanolic extract of root bark of *M. macrantha*, were identified by using GC-MS analysis. Various extract of root were studied for its possible antioxidant potential using standard in vitro test methods including, 1, 1-diphenyl-2-picryl-hydrazyl (DPPH) radical scavenging activity&ferric reducing ability power.However, the activity of extract was found to be more than the standard, Gallic acid used as standard. Total phenolic content, total flavonoid, total tannins content & available crude fiber content were also performed. Various pharmacognostic parameters evaluated in this study help in proper identification and standardization of *Machilus macrantha* Ness root in crude form. This study also helpful for preparation of a monograph on *Machilus macrantha* Nees root.

Keywords:Lauraceae, *Machilus macrantha,* **Pharmacognosy, Phytochemical, Antioxidant**

C-171

Evaluation of *In Vitro* Anti Urolithic Activity of Alcohol,Hexane, Chloroform and Aqueous extracts of *Achyranthes aspera*

Ch.Mallikharjun, Sk.Hazaruddin, P.Niharika and Dr.S.Manohar Babu

Department of Pharm D, SIMS College of Pharmacy, Mangaldas Nagar, Guntur, A.P, India
challamallikharjun28@gmail.com

Abstract:

Urolithiasis,formation of kidney stone presence of one or more caliculi in any location within the urinary tract. This is one of the oldest and widespread diseases known to man. It is a serious, debilitating problem in all societies throughout the world, affecting approximately 12% of the population &men

are three times more prone than women. It is more prevalent between the ages of 20 and 40 in both sexes. Our present study is focused on evaluating the anti urolithitic activity of *Achyranthes aspera*. *Achyranthes aspera* (uttareni)belongs to the family Amaranthaceae is an annual stiff erect herb, about 0.3m-0.9m high and found commonly as a weed throughout India. This study explains evidence base information regarding the anti urolithic activity of alcohol, chloroform, hexane and aqueous extracts of *Achyranthes aspera*.The alcohol, chloroform, hexane and aqueous extracts found to have phytochemicals such as tannins, phenolic compounds, triterpenoids, alkaloids, flavonides and saponins. Anti urolithic activity of these extracts were evaluated by using turbidimetric method(Method- I)and thickness measurement(Method-II).In method-I we measure the turbidity by the inhibition of stone formation(Nucleation) while in Method- II decrease in stone thickness by activity of extracts of *Achyranthes aspera*. Inhibitory activity in the stone formation of alcoholic extract was high compared to other extracts and low compared with standard cystone.

Keywords: *Achyranthes aspera,* **Anti urolithic activity, Turbidity, Thickness**

C-172

Wound Healing Effects of Ethanolic Extract of Leaves of *Melia azedarach*on Healthy Male Albino Rats

Prashant Kumar[1], *Raghuveer Irchhiaya*[2], *Amita Verma*[3]

[1]Vaish Institute of Pharmaceutical Education & Research, Rohtak, Haryana, India
[2]Institute of Pharmacy, Bundelkhand University, Jhansi, U.P. India
[3] Department of Pharmaceutical Sciences, SHUATS, Allahabad, U.P. India
araoraprashant34@gmail.com

Abstract:

Being a rich heritage of medicinal plants in India there is always a hope for the valued medicinal plants for curing some of the untreated ailments. For the treatment of wounds, so many medicinal plants has been studied since yet. In the continuation of the same the present study is a step towards the healing of wounds by using the leaves of *Melia azedarach*. The efficacy of ethanolic extract of leaves of *Melia azedarach* evaluated in excision and incision wounds models and it was found that the extract showed marked effect in wound contraction, epithelization time in excision wound model and tensile strength in incision wound model with 5 % and 10% ointment of plant extract for 16 days. Povidone-iodine ointment (10%) was used as a standard and Student's t test was used for analyzing the data obtained from the study and the value of $P < 0.0001$ when compared with control was considered to be significant. The effects obtained from ethanolic extract of *Melia azedarach* was compared with control and it was found significant

Keywords: *Melia azedarach,* **Excision wound model, Incision wounds model, Epithelization time, Ethanolic extract, Povidone-iodine ointment**

C-173

Bacteriostatic and Fungistatic Activities of *Oreganum vulgare*Extract and Volatile Oil and Interaction Studies in Combination with Antibiotics and Antifungal Agents Against Food Poisoning Pathogens

Mukesh Kumar Gupta

Alwar Pharmacy College, Alwar, Rajasthan, India
mukesh_pharmacy@yahoo.co.in

Abstract:

The use of food preservatives to prevent spoilage of the product during transportation and shelf life by food manufacturers is common. Artificial preservatives added may prevent the food but they may be carcinogenic and may harm the consumer's health. In food producing animals also, due to misuse of antimicrobials, antibiotic resistance have been developed which is affecting food industry. The present study was done to find out *Oreganum vulgare,* the most common food herb's antimicrobial potential against food poisoning organisms. The volatile oil was analysed by GC-MS and chloroform extract was fractionated into phenolic and non-phenolic part. The fractions and volatile oil were used alone and in combination with standard antimicrobials to evaluate the interaction effect. Volatile oil consisted of mainly carvacrol (86.5%), p-cymene (7.2%) followed by bornyl acetate. The Minimum Inhibitory Concentration (MIC) was found to be lowest for volatile oil followed by phenolic fraction when used alone and both in combination against *Shigella flexneri, Aspergillus flavus* and *Salmonella typhi*. Synergism was shown by volatile oil with a FICI of 0.265, 0.187, 0.280 when combined with ciprofloxacin and fluconazole respectively against *S.flexneri*, *S.typhi* and *A.flavus* Obtained data suggest the potential use of volatile oil and phenolic fraction of chloroform extract as alongwith standard antimicrobials as more effective combination with lesser side effects. The demonstrated antimicrobial activity of

phenolic fraction and volatile oil when used alone suggests their use in food industry as preservatives without any toxicity. The interaction studies data with standard antimicrobials indicates the use of these combinations to infected food producing animals and humans; hence may solve the problem of antibiotic resistance in future.

Keywords: preservatives, antibiotic resistance, food poisoning. Minimum inhibitory concentration, Fractional inhibitory concentration, food herb

C-174

Phytochemical evaluation of petroleum ether and chloroform extract of *Zanthosylum tetraspermum* wight & Arn, (Rutaceae)

V.R. Ravikumar,S.Vijayalakshmi and V.Ganesan

Department of Pharmacognosy, The Erode College of Pharmacy, Erode,Tamilnadu, India.
raviskumar@yahoo.com

Abstract:

Nature provides a complete storehouse of remedies to cure all ailments of mankind. *Zanthosylum tetraspermum* Wight and Arn stem bark known as veerasingam pattai is traditionally used by the tribals for treating tooth ache and microbial infection. It is a thorny, stout, aromatic, climbing shrub with brown bark having short recurved prickles belong to the family rutaceae. The present study reveals the Phytochemical Evaluation of Tribal Drug Veerasingam pattai by LC-MS/MS. The dried coarsely powdered bark was subjected to soxlet extraction with petroleum ether and chloroform as solvent. The preliminary phytochemical screening and HPTLC profile for secondary metabolites from the stem bark of *Zanthosylum tetraspermm* Wight and Arn have shown the presence of various important secondary metabolites such as alkaloids, flavonoids, glycosides, phenols, saponin, sterols, tannins and triterpenoids. Petroleum ether and chloroform extracts were used for LC-MS/MS analysis. In the LC-MS/MS analysis, bioactive Phytochemical compounds like Sanguinarine , Dihydro acicine, Oxyavicine were identified in the Petroleum ether and Dihydro nitidine, Dihydro avicine, Camptothecin, Fagaridine, Tetrahydropalmatine, acetonyl dihydro avicine, Savinin, Oxyavicine and Sanguinarine were identified from the chloroform extract of Veerasingam pattai. The generated data has been provided the basis for its therapeutic value and can be used as therapeutant.

Keywords:Tribal drug, *Zanthosylum tetraspermm,* **Phytochemical, HPTLC, LC-MS/MS.**

C-175

Preliminary Phytochemical Investigation and*In–vitro* Antioxidant Activity of *Annona squamosa Linn*. and *Bougainvillea glabra* Choicy

Ankit Sharma, Vandana Narvariya, S.S.Sisodia and R.S.Tomar

Department of Pharmacology, Bhupal Nobles' College Of Pharmacy,
Udaipur, Rajasthan, India.
rasthehearts@gmail.com

Abstract:

Antioxidant are the inhibitor of process of oxidation even at relatively small concentration and thus have diverse physiological role. . The present study was carried out to identify the phytochemicals and evaluate antioxidant activity of *Annona Squamosa and Bougainvillea glabra* Choicy the total phenols content was determined by "Folin Ciocalteau Method". Total flavonoid content was determined by "$AlCl_3$ method". The antioxidant activity was determined by the "The Ferric Reducing power assay". They contain significant amount of flavonoids and phenolic compounds that are responsible for the antioxidant activity of *Annona squamosa*Linn.and*Bougainvillea glabra* choicy leaves.

Keyword:*Annona squamosa, Bougainvillea glabra*, **Antioxidant, Ferric Reducing Power Assay.**

C-177

Formulation and Evaluation of Herbal

Anti- Acne Cream

Sehgal Ekta, Joshi Ankur, Malviya Sapna and Kharia Anil

Modern Institute of Pharmaceutical Sciences, Indore, India
sehgal25ekta@gmail.com

Abstract:

Pimple, acne, sunburn mark and pigmentation are issues that affected every individual at least once during life time. Consumers have begun to search for a product that can cure the skin issue and grant them with a good and healthy skin such as anti-acne cream. Nevertheless, most of the anti-acne creams available in the market contain lots of chemicals that may have some kinds of side effects to the consumers. The present study was conducted to formulate and evaluate

the anti-acne cream containing *Solanum lycopersicum* seeds, *Tamarindus indica* leaves and *vinca rosea leaves* extract. The antibacterial activity of the cream prepared by combination of extract in different concentrations were investigated using two gram-positive bacteria (*Staphylococcus aureus* and *Bacillus cereus*) two gram-negative bacteria (*Escherichia coli* and *Salmonella enterica*) through disc diffusion method. The extract showed significant antibacterial activity against all the tested organisms. The formulated cream was also stable after two months. This formulated creams can be successfully used for skin infections which including acne vulgaris, after the confirmation of clinical and toxicity studies in future.

Keywords: *Solanum lycopersicum* **seeds,** *Tamarindus indica* **leaves,** *Vinca rosea* **leaves Acne vulgaris and antibacterial activity**

C-178

Anti-Acne Effect of *Capparis spinosa* Seed Oil Loaded Solid Lipid Nanoparticles

Gazala Parveen[1], *G. Jeyabalan*[2], *Mujeeb Ur Rahman*[2]

[1]Department of Pharmacognosy & Phytochemsitry, SunRise University, Alwar, Rajasthan, India.
[2]Alwar Pharmacy College, Alwar, Rajasthan, India.
15.gazala@gmail.com.

Abstract:

The dual antimicrobial and antioxidant effects of *Capparis spinosa* seed oil prompted us to formulate the solid lipid nanoparticles of aforesaid oil and evaluate their antiacne effect against P. acne using erythromycin as standard. *Capparis spinosa* seed oil loaded solid lipid nanoparticles were prepared using w/o/w type double emulsification method & its drug polymer compatibility was analyzed by FT-IR & HPLC. Surface morphology (by TET) showed that the particles has evident round and homogeneous shading, the particle size of *Capparis spinosa* seed oil loaded SLNs ranging approximately from 290-697nm. Zeta potential of -32mV also confirmed the stability of colloidal dispersion. The G4 formulation of SLN showed maximum entrapment (83%) due to high affinity of drug with lipid matrix. During the period of storage, the formulation showed no change in colour, creaming and phase separation. The G4 formulations showed significantly less drug release over other formulations & showed significant activity at concentration of 50 µg/mL&100 µg/mL but on further increase no significant change in zone of inhibition was observed. Formulation of *Capparis spinosa* seed oil loaded solid lipid nanoparticles has good stability, no drug polymer interaction; nanoparticles size approximately 290-697nm (spherical). Test sample G4 showed sustained drug release and significant anti-acne activity against P. acne using cup-plate method.

Keywords:*P. acne*, **Oil loaded solid lipid nanoparticles,** *Capparis spinosa* **seed, Erythromycin.**

C-179

Effectiveness And Therapeutic Use of *Allium sativum*

Muhammed Hisham B , Ateendra jha

Department of Pharmacy Practice, Srinivas College of Pharmacy, Mangalore, Karnataka, India
hishambtcbtc@gmail.com

Abstract:

Garlic is the one of the most utilized supplements, used for its various properties. The main active constituents include the allicin, a thiosulphinate presented in crushed garlic bulb. The pure allicin has anti-bacterial properties; also include slightly anti-fungal, anti-parasite and anti-viral activity. The anti-microbial of allicin was confirmed by MIC and minimum bactericidal concentration .Garlic can be used for hypertension and also be investigated for treatment of the cardiovascular disease due to vasodilating effect. Moreover, it can be also used for cancer, Diabetes mellitus and hyperlipidemia .In the olden days indigenous medicine had attained a very high standard, and we have stalwarts in Ayurveda, Siddha, Unani, Allopathic and Homeopathy. The survey was done through various online services and it was done over 163 members and this paper is reviewed to inspire and impress the young researchers about the medicinal value of garlic.

Keywords: Garlic,*Allium sativum***, allicin**

C-180

Development and Evaluation of Self Emulsified Drug Delivery System of Embelin for the Treatment of Amoebiasis

Bharat Lal

IIMT University, Ganga Nagar, Meerut, Uttar Pradesh, India
bharatlal049@gmail.com

Abstract:

Extracted embelin was characterized by using FT-IR, NMR, Mass Spectroscopy, TLC, Partition coefficient, Solubility, and Melting point. IC_{50} of isolated embelin, standard embelin,

metronidazole and embelin loaded SEDDS powder are 1.519 µmol, 1.354µmol, 1.84µmol and 1.35µmol respectively. Preparation andOptimization of self emulsifying drug delivery system containing embelin was done on the basis of emulsification time, size, PDI, zeta potential and precipitation of drugs. Optimize formulation comes F7 (70% Smix and 30% oil).Characterization of embelin loaded self emulsifying drug delivery system include dilution test (no sign of precipitation), centrifugation test (no sign of phase separation), globule size (Dia 217.5 nm) and PDI (.108), zeta potential determination (-31.60 mV), viscosity (17.12 cps), test to verify type of emulsion by Eosin red (O/W).Preparation and characterization of self emulsifying powder by using avicel 200 and characterization are proceed by measuring angle of repose (***Θ***=27.474 ,flow of powder is good), drug content (92.7 %), SEM image and in vitro drugs release (99.3% in 120 minute). Cytotoxicity study (MTT assay) shows the Plain Drug Suspension, Embelin loaded SEDDS powder and Metronidazole exhibited 100% viability at the concentration range of 1.56-100 mM. Bioavailability Study was done in guinea pigs ,it show relative bioavailability of Embelin loaded SEDDS as comparison to plain drug is 198.63 % and Cmax , Tmax , AUC, $T_{1/2}$ of Embelin loaded SEDDS are 6.33 µg/ml, 2 h , 42.062 µg-h/ml, 5.29 h respectively. In vivo antiamoebic activity showno sign of ulceration.

Keywords: Amoebiasis, Embelin, Metronidazole, SEDDS

C-181

Isolation, Characterization and aphrodisiac activity of bark of *Ficus arnottiana*Miq. (M)

Ramandeep Singh[1],*Aseesh Kumar Gupta*[2]

[1]Department of Pharmacy, Himachal Institute of Pharmacy, Paonta Sahib (H.P), India.
[2] Department of Pharmacy,DBIT, Dehradun, Uttarakhand, India
ramandeeppharmacologist@gmail.com

Abstract:

The plant *Ficus arnottiana*is widely distributed in the Himalayan and sub-Himalayan regions of India. Based on preliminary reports, there is a lot of interest in using the bark of this plant for treating sexual disorders**.** Bark of *Ficus arnottiana* Miq. were successively extracted by using various solvents petroleum ether, Chloroform, acetone and methanol and aqueous extracts were screened for Phytochemical constituents. Male rats were orally dose 150 mg/kg body weight, of all the extracts at 24 hrs interval and their sexual behavior parameter were evaluated at 0,7 14 21 and 28 th and serum testosterone, LH, FSH & Prolactin concentration were evaluated at 28th day. The active extracts of bark of the plant were subjected to isolation of compound by column chromatography. Phytochemical screening revealed that PEE showed positive results for Steroids, terpens & fixed oil. The PEE revealed with significant increase in male sexual behavior and serum testosterone level in male rats. Isolated compound was characterized by using FTIR, ^{1}H NMR, ^{13}C NMR and Mass spectroscopy. The present investigation revealed that PEE of *Ficus arnottiana* Miq. bark increases Male sexual behavior and blood testosterone concentration and this mechanism may be responsible for its aphrodisiac effects and various masculine behaviors. It may be used to modify impaired sexual function in animals, especially those arising from hypotestostronemia. This could provide a rationale for the use of this plant as aphrodisiac in folk medicine.

Keywords: Aphrodisiac, Sexual behavior, Testosterone, Potency; *Ficus arnottiana* Miq.

C-182

Fungal Infection Control by Garlic Extracts

Kanika Arora, Shikha, Shakshi, Sweta Kamboj

Guru Gobind Singh College of Pharmacy, Yamuna Nagar – 135001, Haryana, India
kanika28arora1997@gmail.com

Abstract:

Allium sativum is grown all over the world as seasoning and medicinal vegetable. Allicin is main component of garlic, being attributed to it the most of its biological activities, such as bactericidal, antifungal and antiviral actions. However, other compounds of garlic present antioxidant, hypocholesterolemic, vasodilator activities, protective action against different types of cancer, and immunomodulatory. Fungal infections are important causes of morbidity and mortality in people mainly in immunosuppressed ones. *Sporothrix schenckii,* the causing agent of Sporotrichosis. Main aim of this work was to evaluate the influence of garlic consuming on immune modulation of healthy and infected Swiss mice in induced way by *S. schenckii*, since these animals functioning of peritoneal macrophages as well as the nitric oxide and cytokines' production and to evaluate antifungal potential of garlic with *S. schenckii* through minimum inhibitory concentration test and colony-forming units. Results showed that garlic offers antifungal potential with *S. schenckii.* Oral taking of garlic extracts influences the releasing of cytokines by macrophages, regular consuming shows anti-inflammatory effect, and its acute use may take to an inflammatory response. Mice that consumed garlic responded

more effectively to fight against the infection. Nutrition plays an important role in modulating the immune and inflammatory response, as the nutrients regulate cellular and humoral defensing systems, by changing in the formation of mediators or by interfering with transduction pathways of cellular signals, altering the balance between cytokines, and lessen depletion of tissue nutrients.

Keywords: Garlic, Macrophage, *Sporothrix Schenckii*, **Sporotrichosis, Interleukin.**

C-183

Pharmacognostical standardisation of *Tribulus terrestris* L. fruits

Sonia, Sumitra Singh and Shailendra Kumar Singh

Department of Pharmaceutical Sciences, Guru Jambheshwer University Science and Technology, Hisar, India
sonia.prajapat3@gmail.com

Abstract:

Tribulus terrestris L.the 'puncture vine' is reported in Ayurveda, is a yellow floweringnatural herb belonging to family Zygophyllaceae used for its medicinal effects around the world. *Tribulus terrestris* L. variety is also known as *mitha* (sweet) *gokhru*. It is native to warm temperate, tropical and subtropical regions such as Southern Europe, Vietnam, Middle East, South Africa, India, China, Pakistan and Sri Lanka. *Tribulus* is a Latin word for "three-pointed a caltrop," the shape of which is suggested by the three-pronged. *T. terrestris* fruit, referring to the caltrop, a military weapon, an iron ball with projecting spikes. Pharamacognostical standardization of *Tribulus terrestris* fruits was carried out by using different extracts for pharmacognostical studies such as physico-chemical parameters and preliminary phytochemical screening. The macroscopical and microscopical characteristics of drug powder were studied. The physico-chemical parameters like ash values, loss on drying, extractive values, foaming index and swelling index etc. were performed. These studies will be helpful to establish standards for quality, purity and sample identification of *Tribulus terrestris* L. fruits.

Keywords: Standardization, puncture vine and *Tribulus terrestris***L.**

C-184

Formulation and Evaluation of Antimicrobial Activity of Marine Red Algae *Gracilaria corticata*

Vithyasagar.C[1], Prakash. R[1] andPurushoth Prabhu. T[2]

[1]Department of Pharmacology
[1]K. K College of Pharmacy, Gerugambakkam, Chennai, India
[2]C. L Baid Metha College of Pharmacy, Thoripakkam, Chennai,India
vithyasagar.chandru28@gmail.com

Abstract:

The present was carried out to investigate the antimicrobial activity of formulated gel containing marine red algae *Gracilaria corticata*belonging to the family Rhodophyta by disc diffusion assay method against bacterial and fungal organisms. The ethanolic extract of *Gracilaria corticata*were subjected to phytochemical and physiochemical analysis and then gel is prepared using ethanolic extract of *Gracilariacorticata*were divided into two different concentration such as 250 and 500 µg. The formulated gel were investigated for antimicrobial activity by disc diffusion assay method against *S. aureus, P. aeruginosa and Candida albicans* and compared with standard drug ketoconazole(30µg) and amikacin (30µg). The zones of inhibition formed for the compounds against organisms were calculated. In present study the formulated gel showed moderately potent antimicrobial activity. The zone of inhibition of *S. aureus, P. aeruginosa* was found to be 12 and 10 mm respectively. The zone of inhibition of candida albicans was found to be 12 mm. And the phytochemical analysis shows the presence of active constituents such as flavonoids, sugar, phenol and quinones and physiochemical analysis shows that the antimicrobial activity is due to the presence of active constituents and evaluation of gel proves the stability of the formulation.The present study shows that the *invitro* anti-microbial activity of the dose of 500 was higher inhibitory against virulent bacteria which cause various infection. From the above studies it confirms the formulated gel exhibit moderately potent antimicrobial activity**.**

Keywords: Antimicrobial activity, Amikacin, Ketoconazole, Zone of inhibition, *Gracilaria corticata*

C-185

Evaluation of Antiulcer Activity of Ethanol Root Extrsct of *Desmodium triangulare (Retz) Merr*

Ragavaprasath C, Thamotharan G, Suresh V and Jagadheish P

Department Of Pharmacology
Jkkmmrf's Annai Jkk Sampoorani Ammal College Of Pharmacy, B.Komarapalayam, Tamilnadu, India
ragavaprasath786@gmail.com

Abstract:

The study was designed to investigate the antiulcer activity of ethanol extract of the *Desmodium triangulare*using different models of gastric and duodenal ulceration in albino rats. Ulcers were induced by oral administration of ethanol. The extract was administered at a dose of 200 and 400 mg/kg orally 2 hours prior to ulcer induction. Omeprazole (20 mg/kg) was used as a reference standard. The antiulcer activity was accessed by determining and comparing the ulcer index in the test group with that of the standard drug treated group. Gastric volume, total acid and free acid were estimated in the male albino rats.EEDT showed significant antiulcer effect at the dose of 200 mg/kg and 400mg/kg (p.o) dose. The doses of 200mg/kg and 400mg/kg produced an ulcer index of (2.23±0.044) and (1.66±0.48) and % protection (88.11) and (91.53). This shows the decreased in ulcer index and increased in % ulcer protection. It was compared with the standard drug Omeprazole ($p<0.01$). The results suggest that EEDT possesses significant antiulcer property which could be due to Anti secretary and also cyto protective action of the drug or strengthening of gastric and duodenal mucosa with the enhancement of mucosal defence.

Keywords: EEDT(Ethanol extract of *Desmodium triangulare)***, Anti-ulcer, Ulcer index, Omeprazole.**

C-186

Caesalpinia bonducella: A Pharmacological Important Plant

Desh Deepak Pandey and Dr. Alok Pal Jain

S.R.K University, Bhopal, M.P, India
deshdeepakpandey1782@gmail.com

Abstract:

Many herbal remedies have been employed in various medical systems for the treatment andmanagement of different diseases. *Caesalpinia bonducella*is classified under the family of Caesalpiniaceae. It is also known as *C. bonducella*Flem and *C. crista* Linn.The plant isfound in thetropical and the subtropical partsof Asia. It is also found in Andaman, Nicobar islands and in all over India. *Caesalpinia bonducella*(roxb.) shows antipyretic, anti-inflammatory, anthelmintic, antimalarial, antioxidant, antibacterial, antitumor and antidiabetic activities. The Phytochemical screening of *C.bonducella*shows the existence of different bioactive compounds like sterols, oils, alkaloids, saponins, phenols, glycosides, tannins, amino acids, proteins, cardiac glycosides, alkaloids, terpenoids, carbohydrates, flavanoids and resins.Therefore, this information will be helpful to create interesttowards the plant and may be useful in developing new formulations.

Keywords: Herbal remedies, *Caesalpinia bonducella,* **Pharmacological activity.**

C-187

Steriod, Saponin and Terpenoid Constituents From Roots of *Clerodendrum Serratum*

M. Swapna Reddy and B.Ramya Kuber

1. Sri Padmavathi Mahila Visvavidyalayam, Tirupathi, India
Swapnareddy81mpharm@gmail.com

Abstract:

In this study three compounds steroid, saponin and terpenoid were isolated from the roots of*Clerodendrum serratum*. Dried roots (1.2 kg) were cut then extracted with ethylacetate (4 × 2 L). The ethylacetate extract was evaporated and concentrated under reduced pressure to afford a dark brown residue (14.1 g).

Freshly prepared extract was subjected to standard phytochemical screening to ensure the presence of the following phytoconstituents: terpenoids, steriods, saponins, fixed oils, fats, and carbohydrates. Column chromatographic separations were performed on silica gel 60 (0.04–0.063 mm, Merck). TLC was performed on precoated TLC plates with silica gel 60 (layer thickness 0.2 mm, Merck). TLC spots were visualized by exposure to iodine vapours and UV radiation.

The column was eluted with mixture of petroleum ether: ethylacetate. Various fractions were collected separately and matched by TLC to check homogeneity. Similar fractions having the same R_f values were combined and crystallized. The greenish brown compounds were eluted by column chromatography in the fractions of ethylacetate extract (petroleum ether : ethylacetate) (80:20), (60:40), (30:70). The structures of isolated compounds were elucidated on the basis of its IR, 1D, 2D, NMR and MASS spectral data.

Keywords:*Clerodendrum serratum, characterization, spectral data.*

C-188

A Review on Bael Tree: Its Medicinal Importance

Rajeev Ranjan, Maneesh Kumar Mishra, Rajkumari Thagele and Mohan Lal Kori

Vedica College of B.Pharmacy:A constituent Institute of RKDF University Bhopal, M.P, India
rrahulkr084@gmail.com

Abstract:

With the ever increasing interest of today's population towards natural products, *Aegle marmelos* (L.) Corr. emerged out to be one of the most eyes catching plant that nature has endowed us with, bearing multiple medicinal properties, belonging to family Rutaceae. This plant has tremendous uses listed in Ayurvedic and Unani and Siddha Systems of medicine. Almost every part of this plant bears one or more of the medicinal properties utilized through preparation of different formulation either alone or in combination with other herbal plants. This review majorly deals with the traditional and recent pharmacological activities of different parts of *Aegle marmelos* which have helped it to earn the title of Mahaphala or Great fruit.

Keywords: *Aegle marmelos*, **Medicinal plant, Pharmacological activity.**

C-189

Evaluation of Sun Protection Factor of *Viola odorata* Extract and its Gel Formulation by UV Spectroscopic Method

Anuja Verma, Reecha Madaan, Rajni Bala and Sandeep Arora

Chitkara College of Pharmacy Chitkara University, Rajpura Punjab 140401

Abstract:

The purpose of present study was to evaluate the sun protection factor (SPF) of ethanolic extract of *Viola odorata* (Violaceae) commonly called as banafsha and its gel formulation by ultraviolet spectroscopy method. Due to the high concentration of flavonoids and phenolic compounds, this plant may be used to prevent UV-induced oxygen free radical generation. *Viola odorata* aerial parts were powdered and extracted with ethanol in soxhlet apparatus. Three gels (F1-F3) were formulated using Carabopol 934, Methyl Paraben (0.5%), Propyl paraben (0.2%), Propylene glycol 400, Triethanolamine and 1ml, 2ml and 4ml of ethanolic extract (200µg/ml) of *Viola odorata* respectively. The *in vitro* SPF of the *Viola odorata* ethanolic extract (200µg/ml) and its gel formulation (F1-F3) were determined according to the UV spectrophotometric method of Mansur *et al*. Formulated gels were also evaluated for physical parameters.

Ethanolic extract of *Viola odorata* (200µg/ml) have SPF value about 11.88±0.059 and its gel formulations (F1-F3) have SPF values about 2.89±0.003, 4.09±0.078 and 5.90±0.049 respectively. The result obtained have showed the ability of gels to absorb UV radiation and hence proved its UV protection ability. *Viola odorata* will be a better, cheaper and safe alternative to harmful chemical sunscreens that are used now days in the industry and in future active components may be isolated from plant for better protection against sun rays.

Keywords:*Viola odorata*, **SPF, herbal gels**

C-190

In Vitro Anti-Diabetic Activity of Different Extract of the Medicinal Plants *Ecbolium Viride* (Forsk) Alston

Prabhu.A, Venkatachalam.T, Somasutharam.S and Ziyad.AKP

Department Of Pharmaceutical Chemistry,
Jkkmmrf's Annai Jkk Sampoorani Ammal College Of Pharmacy,
Komarapalayam, Tamilnadu, India
Prabhukuttybpharm33@gmail.Com

Abstract:

Diabetes is a clinical syndrome characterized by hyperglycemia due to absolute or relative deficiency of insulin. Recent decades have experienced a sharp increase in the incidence and prevalence of diabetes mellitus. One antidiabetic therapeutic approach is to reduce gastrointestinal glucose production and absorption through the inhibition of carbohydrate digesting enzymes such as α-amylase and α-glucosidase. Inhibition of amylase and glycosidase enzymes involved in digestion of carbohydrates can significantly decrease the post prandial increase blood glucose after a mixed carbohydrate diet and therefore can be an important strategy in management of blood glucose. The aim of the current study was to screen the different extract of petroleum ether, ethyl acetate and methanol for its in vitro antidiabetic activity. Our assay result suggests that different extract of *Ecbolium viride* (forsk) Alston exhibit dose dependent increase in percentage inhibitory activity on petroleum ether (IC_{50} value 30.92 ± 2.050 µg/ml), ethyl acetate (IC_{50} value 29.02 ± 2.301 µg/ml), methanol (IC_{50} value 26.82 ± 1.601 µg/ml). Acarbose was used as a standard drug IC_{50} value 95.59 ± 2.820 µg/ml.

Keywords: Ecbolium viride, acarbose, invitro, antidiabetic, methanol.

C-192

Phytochemical investigation and Anti-mitotic potential of Poly-herbal drug extracts by using Onion Root Tip: A simple *in vitro* anticancer

model

Folitartha Roy., Ranajit DT., Chandyn V., Nitin M. and Beknal A.

T. John College of Pharmacy, Dept. of Pharmacognosy and Phytochemistry,
Gottigere, Bannerughatta Road, Bangalore,India
folitartha.roy@gmail.com

Abstract:

Cancer is one of the leading causes of mortality worldwide. Many of the plants traditionally reported to possess antitumor activity. The present study was carried out to evaluate the anticancer activity of different plant extracts in combination, which will be an attempt to prove the poly-herbal combination for *in- vitro* anticancer property. In present study different plant extracts such as *Withania somnifera*, *Asparagus gonoclados, Azardiracta indica*, and *Streblus asper*were used to prepare the combined extract in 1: 1 ratio. The present research work had carried out on laboratory level assay to avoid the use of different animal models. Preliminary phyto-chemical tests of successive solvent extracts powder had performed to find out the different chemical moieties as per standard procedures. Preliminary anticancer screening by exposure of different extracts on Onion Root model was carried out to find out the lead extract which showed the promising cell growth inhibitory activity. The anti-mitotic assay by onion root method was selected because this is easy to done and give fastest promising results. Onion was selected for the anti-mitotic assay which shows mitotic index inhibition that compared with standard anti-mitotic drug (Vincristin). The attempt was taken to determine the stage at which drugs stops the cell division. The Alcohol extract of all plant drugs in combination shows most promising anticancer activity in comparison to standard and control used. Further present result will be helpful to screen the drug for in vivo anticancer activity and related pharmacological properties in combination.

Keywords:*Withania Somnifera*, *Azardiracta Indica*, **Polyherbal extracts.**

C-193

Preliminary Photochemical Screening and Isolation of Some Compounds from *Malva sylvestris* Linn. (Mallow)

Somezeet Panda, Punam Agrawal, Goutam Kumar Jana and Manas Ranjan Mishra

Department of Pharmacognosy, Gayatri College of Pharmacy, Sambalpur, Odisha, India
Somezeet@gmail.com

Abstract:

The phytochemical screening of three extracts (etheric, ethanol and aqueous) of *Malva sylvestris* Linn revealed that the seed contain alkaloids, sterols and steroids, reducing sugars, tannins, emodols, starch, coumarins and the stem contain flavonoids, saponins and anthocyanosids along with the compounds found in seeds, which give several healing properties. The separation of the bioactive compounds from the two parts of the plant extracts was carried out using thin layer chromatography (TLC). However; the aqueous acetone extract of the seed and the stem acknowledged the phenolic compound such as phenolic acid. The aim of this work is to carry out a phytochemical screening of some extracts of *Malva sylvestris* Linn seeds and stems in order to know the composition of secondary metabolites in relation to the structure of their phenolic compounds and to understand better the pharmacodynamic properties. The separation of the bioactive compounds from two parts of plant extracts was carried out using thin layer chromatography (TLC). The TLC analysis in UV light, allowed the identification of a pattern of phenolic acid (blue fluorescent). Thus, this study can be concluded for the seed and stem of *Malva sylvestris* Linn have a various chemical groups as secondary metabolite. It revealed some differences in the constituents of the two parts of the plant tested.

Keywords:*Malva sylvestris* **Linn, Plant extracts, Phytochemical screening, TLC, Alkaloïds.**

C-194

Antimicrobial Activity of the Leaf Extract of *Mirabilis jalapa* against Pathogenic Microorganisms

Siraj M.P, A.Chitra, V.Sasikumar and V.Karthick

JKKMMRFS College of Pharmacy, Komarapalayam, Erode, Tamilnadu, India
sonymone168@gmail.com

Abstract:

Investigation of the photochemical constituents and antimicrobial activity of the leaf extracts of Mirabilis Jalapa were carried out using acetone, chloroform, ethanol and methanol. These extracts were subjected to screening of preliminary photochemical tests. Phytochemical analysis showed the presence of alkaloids, flavonoids, phenols, glycosides, tannins, saponins and lignins. The methanol extract exhibited the

largest zone of inhibition (21mm in dia with 500 mu g/disc extract) against Staphylococcus aureus and the highest inhibition of fungal radial mycelial growth (97.5% with 500 mu g/ml medium) against *Aspergillus flavus*. The methanol extract exhibited the lowest MIC against Staphylococcus aureus (39 mu g/ml) and Aspergillus flavus (45 mu g/ml). It appeared that *M. jalapa* could be a potential natural source of new antimicrobial agent.

Keywords:Antimicrobial Activity, Leaf Extract, Micro Organism, Phytochemical Analysis

C-195

Benzophenanthridine Alkaloids from Callus Cultures of *Zanthoxylum rhetsa*.

Perala Kavitha Rao and Ciddi Veeresham

University Collage of Pharmaceutical Sciences, Kakatiya University, Warangal, Telangana, India
kavitharao356@gmail.com

Abstract:

Plant cell and tissue cultures hold great promise for controlled production of myriad of useful secondary metabolites. These are attractive alternatives for secondary metabolite biosynthesis and they ensure continuous production with uniform quality and yield. Production of Benzophenenathridine alkaloids namely nitidine, chelerythrine and sanguinarine from callus cultures of *Zanthoxylum rhetsa* was investigated. Callus cultures were initiated on Murashige and Skoogs medium fortified with phyto hormonal combination of 2,4 Di Chloro phenoxy acetic acid (2 mg/l) + Kinetin (1 mg/l). After development of callus, Callus cultures were extracted by using 70% methanol and they were analysed by RP-HPLC at 296 nm. Peaks of Nitidine, Chelerythrine and Sanguinarine were observed at 8.07, 10.17 and 6.91min respectively. Production of secondary metabolites through callus cultures may serve as a best alternate system and optimization of media will result in improved yield of secondary metabolites.

Keywords:*Zanthoxylum rhetsa*, **2, 4 Di Chloro phenoxy acetic acid, and Kinetin.**

C-196

Preparation and Evaluation of Poly Herbals Face Pack

V.Nagamani, Rayala Venkatakoteswararao and Y.Vamshi Vishnu

Aurobindo College of Pharmaceutical Sciences, Department of Pharmaceutical Sciences, Warangal, Telangana State, India
venkatakoteswararaorayala@gmail.com

Abstract:

The main objective of present work is to formulate and evaluate a polyhedral face pack for cosmetic purpose from herbal ingredients. Multani mitti, Tulsi powder, Haridra, Orange peel powder, Lemon peel powder, Alovera powder were procured from the local market and were dried, passed through sieve # 100, fine powder were mixed geometrically and evaluated for its Organoleptic and Physico-chemical, general powder microscopical characteristics and chemical evaluation. The mixed powders have passable flow property which is suitable for a face pack. Particle size of the powder was found in between 20 -25µm. The poly herbal mixture is used to stimulate blood circulation rejuvenates the muscles and help to maintain the elasticity of the skin and remove dirt from skin pores. The advantage of herbal cosmetics is their non toxic nature, its efficacy in reducing the allergic reactions and time tested usefulness of many ingredients. Thus in the present work, we found good properties for the face packs and that showed good result from poly herbal mixture.

Keywords: Multani mitti, Tulsi powder, Aloe Vera powder, Orange peel powder, Lemon peel powder, Turmeric powder.

C-197

Preliminary Screening of Phytochemical Components and Physico-Chemical Parameters of Root of *Parthenium Hysterophorus* L.

Joginder Sangwan, Mahesh, Susheel and Mangal Sain Hooda

Janta College of Pharmacy, Butana, Sonepat-131302, Haryana, India
Joginder.sangwan85@gmail.com

Abstract:

India possesses a rich biodiversity of the medicinal plants that were still not explored completely. There is an increased use of herbal medicines all over the world and now there is need to study herbal drugs on scientific basis to develop useful medicine from them. The *Parthenium hysterophorus* L. is commonly known as carrot grass and it belongs to family asteraceae also called compositae. The present research work carried out on different extracts of rootsof *Parthenium hysterophorus* L. were screened for their phytochemical screening, loss on drying,

ash value, acid insoluble ash, water soluble ash, extractives values, according to the guidelines of WHO. The phytochemical screening revealed the presence of alkaloids, cardiac glycosides, Flavonoids, Proteins and Steroids. The present studies help us to set the parameters for standardization of root of *Parthenium hysterophorus* L.

Keywords:*Parthenium hysterophorus*, **Carrot grass, Phytochemical screening, Asteraceae**

C-198

Therapeutic Potentials of *Carica papaya* plant in the Management of Dengue Fever

Sharib Raza Khan, Rohit Bhatia and Goutam Rath

ISF College of Pharmacy, Moga, Punjab, India
srkhjp96@gmail.com

Abstract:

Dengue has become a global problem since the Second World War and is common in more than 110 countries.Each year between 50 and 528 million people are infected and approximately 10,000 to 20,000 die due to dengue.There is a continuous research in progress to develop newer medicinal agents for treatment of dengue fever. Many drugs are available in market already but many are associated with side effects and economic problems. It is reported in literature that *Carica papaya* exhibits sufficient haemostatic and many other important biological activities. Moreover, it is cheap and easily available plant, so researchers have paid their keen interest towards exploration of therapeutic efficacy of *Carica papaya* in the treatment of dengue fever. It exhibits a strong capacity to increase the platelet count in dengue patients. Papaya extracts and papaya juice have maximum therapeutic efficacy. In the present review, authors have summarized a detailed description about *Carica papaya* plant including its chemical constituents from different parts of it. The current article summarizes a comprehensive review on mechanism followed and therapeutic applications of *Carica papaya in* Dengue.

Keywords:*Carica papaya*, **Haemostatic, Platelet count.**

C-199

Significance of Natural Plants Having Insect Repellent Activity

D.Monika, Mukesh sharma, Ajazuddin, Amit Alexander

Rungta College of Pharmaceutical Sciences and Research, Kurud, Bhilai-490026 (C.G.) India
monika.dovulary100@gmail.com

Abstract:

Plant-based repellents have been used for generations in traditional practice as a personal protection measure against host-seeking insect. Recently, commercial repellent products containing plant-based ingredients have gained increasing popularity among consumers, as these are commonly perceived as "safe" in comparison to long-established synthetic repellents. There is a need for further standardized studies in order to better evaluate repellent compounds and develop new products that offer high repellency as well as good consumer safety. How often have we tried to enjoy the great outdoors or a restful night sleep only to be bothered by what seems like an army of insects attacking us? What is it that attracts insects to humans? Are some individuals more attractive to insects than other individuals? Since insects are vectors for many debilitating human diseases, understanding insect attraction to humans is very important. Study has shown that insects associate with humans at multiple stages in their life cycle. The mechanism of this attraction, i.e. CO_2, sweat, ABO blood type, chemicals, body temperature, body humidity etc. For example, scabies mite, Sarcoptes scabiei, which can cause intense skin irritation, has been found to be attracted by host odor, body temperature. CO_2 plays a significant role in attraction for numerous insects especially mosquitoes. Other examples of insect attraction to humans include: kissing bugs and sandflies.

Keywords: Insect repellent plant,Mosquitoes, Kissing bugs, Sandflies

C-200

Comparative Studies on various parts of *Amaranthus spinosus* for Antidiabetic activity

Jando Tevin Mwaponda, Antara Choudhury, Fajge Shrirang Sampatrao

Department of Pharmaceutical Sciences, Hillside College of Pharmacy & Research Centre, Bangalore – 560062, Karnataka, India.
tevinmwapi@gmail.com

Abstract:

Amaranthus spinosus Linn. (Amaranthaceae) is commonly known as Spiny amaranth. It is an annual or perennial herb, native to Tropical America and found throughout India in roadsides, waste places and fields. *Amaranthus spinosus* have

been used in indigenous medicine for the cure of constipation, as diuretic, antidiabetic, antipyretic, anti-snake venom, antileprotic, anti-gonorrheal, anti-inflammatory, anthelmintic, antiandrogenic and as an immunomodulator. The objective of the present study was to compare the antidiabetic activity of *Amaranthus spinosus* leaves, flowers and stems. The antidiabetic activity of the alcoholic extracts of *Amaranthus spinosus* leaves, flowers and stems were evaluated in alloxan induced diabetic rats. It has been observed that all the three extracts of *Amaranthus spinosus* exhibited antidiabetic activity. Alcoholic extracts of flowers and stems showed mild antidiabetic activity but alcoholic extract of the leaves at dose 400mg/kg has shown significant decrease of blood glucose level (BGL) at 4th and 7th day of the study period. The results suggested that the alcoholic extract of the leaves at dose 400mg/kg possess potent anti-diabetic activity. Thus, it can be concluded that alcoholic extracts of *Amaranthus spinosus* leaves is having potent anti-diabetic activity and alcoholic extracts of flowers and stems has mild antidiabetic activity. Chemical constituents present in the extracts might be responsible for this activity.

Keywords:*Amaranthus spinosus*, **Amaranthaceae, Alloxan, Leaves**

C-201

The Study of the Hematopoietic Property of *Hygrophilaspinosa*

Priyanka Chandra,Gautam Kumar Bagchi, Debasmita Mukherjee, Apurbaa Acharya and Riya Sen

M. Pharm , Birla Institute of Technology – Mesra , Ranchi, Jharkhand , India
kalidasacharya2@gmail.com

Abstract:

The role of traditional medicines in resolving health problems is invaluable on a global level. Medicinal plants continue to provide valuable therapeutic agents, in both modern and traditional medicine. The ethnobotanical herb *Hygrophila spinosa* T. Anders belonging to the family Acanthaceae is native to India, is a medicinally very important herb. It has a variety of pharmacologic functions, which indicate its usefulness in the treatment of different types of diseases and disorders. In the present study, *Hygrophila spinosa* leaf extracts were obtained through decoction in water and analysis of the hemoglobin levels was performed on test animals-Mice. The results were compared with the results obtained by using a standard drug, keeping the experimental conditions on mice same as that of the herb extract. The water extract was analyzed by TLC method to identify the phytoconstituent responsible for increasing the hemoglobin content.The main aim was to see whether the leaves can really increase hemoglobin content and, what might be the reason behind their activity. We tried to find out the probable mechanism behind its such activity, so we performed the tests for the presence of vitamin B_{12} or folic acid and iron.

Keywords: *Hygrophila spinosa,***Hemoglobin,Folic acid**

C-202

Phytochemical and antiasthmatic study of *Myrica nagi* bark

Rinu Rana

Department of Pharmacognosy, Laureate Institute of Pharmacy, Kathog, H.P, India
rinupharma@gmail.com

Abstract:

The *Myrica nagi*(Family: Myricaceae) is a known drug of the Ayurveda system having antiseptic, antiulcer, expectorant, anti-inflammatory, anti-tussive, bronchodilator, hepatoprotective, antipyretic and anti asthmatic properties. The present study explores the morphological, microscopical, phytochemical and pharmacological characteristics of *Myrica nagi* bark. The extracts obtained from successive solvent extraction were subjected to various qualitative chemical tests to determine the presence of various phytoconstituents using reported methods. The investigation also includes estimation of total tannin, total phenolics, total flavonoids and total phytosterols content in bark extracts. Antiasthmatic activity of selected extracts of *Myrica nagi* bark powder were evaluated by using suitable animal models: Acetylcholine induced bronchospasm in conscious guinea pigs, Acetylcholine induced contraction on isolated guinea pig tracheal chain preparation, Studies on compound 48/80 induced mast cell degranulation using ratandTrypsin and egg albumin induced bronchospasm in conscious rats. Qualitative analysis of the bark revealed the presence of steroids, reducing sugars, glycosides, saponins, tannins and volatile oils. The antiasthmatic study has indicated that *M.nagi* is effective in various models of asthma. These activities are probably attributed to the presence of glycosides and phenolic compounds in the bark. Further studies are suggested to establish molecular mechanism and also to isolate and characterize the active principles responsible for the action.

Keywords: *Myrica nagi*, **Glycosides, Asthma**

C-203

Evaluation of Anti-asthmatic property of *Euphorbia neriifolia*

Jyotiram Sawale, Lipi Purwal, Rajkumari Thagele and Mohan Lal Kori

Vedica College of B.Pharmacy:A constituent Institute of RKDF University Bhopal, M.P, India
jyotiramsawale@gmail.com

Abstract:

Euphorbia neriifolia belongs to family euphorbiaceae is being used in traditional medicine for the treatment of severe bronchitis and asthma. So the aim of study was to evaluate anti-asthmatic activity of ethanol extract and its various fractions such as chloroform and ethyl acetate. In the present study ethanol extract and its chloroform and ethyl acetate fractions of *Euphorbia neriifolia* leaves was evaluated for acute toxicity studies, preliminary phytochemical screening, and anti-asthmatic activity using histamine induced contraction on isolated guinea pig ileum and isolated guinea pig tracheal chain at doses (10mg/mL), histamine and acetylcholine induced bronchospasm in guinea pig and milk induced eusinopphilia in mice, at doses (150–600mg/kg p.o.). Present investigation showed that ethanolic extract has showed no toxicity at dose 2000mg/kg p.o. Phytochemical studies indicated the presence of steroids, phenolic compounds saponin, flavonoids and glycosides.

The present study concludes that the anti-asthmatic activity of ethyl acetate fraction may be due to the presence of flavonoids or saponins.

Keywords: *Euphorbia neriifolia*, **Anti-asthmatic, Flavonoids**

C-204

A Comparative Study of Clomiphene Citrate, *Cissampelospareira* L. Stem and *Thevetiaperuviana* K (Schum) Leaves for Antifertility Potential

Samanta Jhuma, Bhattacharya S, Rana AC and Hari Kumar

University School of Pharmaceutical Sciences, Rayat Bahra University, Sahauran, Kharar, Mohali, Punjab, India
Samanta_j17@yahoo.com

Abstract:

Themethanolic extracts of*Cissampelospareira* L. stem and *Thevetiaperuviana* K (Schum) leaves have significant ($p<0.001$) antifertility potency as compared to control group by virtue of decreasing the progesterone level. The present study is aimed to compare the antifertility activity of methanolic extract of*Cissampelospareira* L. stem and *Thevetiaperuviana* K (Schum.) leaves with a standard drug Clomiphene citrate on female rat model.Clomiphene citrate (1mg/kg) (CC) was examined in female sprauge dawley (SD) rats for their effect on estrus cycle for 21 days. It was further studied for their effect on implantation and reproductive hormones. ELISA method was employed to estimate serum estradiol and progesterone level after collecting the blood sample on 12th, 19th, and 21st dayof pregnancy. Results were compared with results of methanolic extract of*Cissampelospareira* L. stem [CPS-Me] and *Thevetiaperuviana* K (Schum) leaves [TPL-Me-G] obtained using same parameters. Prolongation in duration of estrus cycle and diestrus phase and decrease in mean no. of implants and decreased progesterone level in TPL-Me-G treated group were in higher extent than CPS-Me treated group but lesser extent as compared to CC treated group. It is concluded that TPL-Me-G is stronger antifertility agent than CPS-Me but weaker than CC.

Keywords: Antifertility agent, Clomiphene citrate, *Cissampelospareira* **L. stems,** *Thevetiaperuviana* **K (Schum.) leaves**

C-205

Formulation, Characterization &*In vitro - In vivo* Evaluation of Pippali Lozenges for the Treatment of Cold & Cough.

R.Nainetha, A.Pavani,G.Navya, R.V.Koteswararao and Y.Vamshi Vishnu

Department of pharmaceutical sciences, Aurobindo college of pharmaceutical sciences, Warangal, Telangana State, India
pharmvishnu77@yahoo.co.in

Abstract:

Development of new dosage forms without disturbing the basic principles of Ayurveda is a need for the global acceptance. Herbal lozenges prepared from Adhatoda Vasica & Tanikaya are a well known preparation mentioned in Ayurvedic pharmacopeia. Powder form has few difficulties in the pharmaceutical processing problems in administration difficulties etc. Present study is an attempt made to overcome the problems by developing new dosage form of Vasaka powder & Tanikaya into herbal lozenges.and their pharmaceutical standardization. Herbal lozenges were prepared by using

Jaggery & liquid glucose as a base along with Xanthan gum (binder), tartaric acid, Malic acid. During developing lozenge different concentration i.e. Jaggery & Liquid glucose were taken in1.06 to 1:1. Jaggery & Liquid glucose ratio was optimized (1:1). Evaluation studies (weight variation, hardness, thickness, disintegration, Mouth residence time) were also done to the prepared formulations. JL4 Herbal lozenge is more stable, palatable dosage form, superior for commercial purpose and can be administered at fixed unit dose. Stability studies were also performed as per ICH guidelines, observed considerable changes in the formulations.

Keywords: Vasaka (*Adhatoda vasica*),Tanikaya powder, Liquid glucose, Jaggery, Ayurvedic pharmacopeia, Herbal lozenges

C-206

In-vitro Anti-urolithiatic Activity of Alcoholic and Hydroalcoholic Extracts of *Kalanchoe pinnata* Leaves

Abu Sufiyan Chhipa, Amardeep Ankalgi, Priyanka Soni and Vishal soni

BN college of pharmacy, Udaipur, Rajasthan, India
asufiyanchhipa@gmail.com

Abstract:

Objective: The objective of this research was to find the efficiency of alcoholic and hydroalcoholic extracts of *Kalanchoe pinnata* leaves in dissolution of calcium oxalate crystals by using *in-vitro* dissolution model. Methods: *In-vitro* dissolution model was prepared by using semipermeable membranes obtained from eggs that served as dissolution bags for the investigation. Dissolution bags containing calcium oxalate and different extracts were suspended in conical flasks containing TRIS buffer. Percentage dissolution of calcium oxalate by different extracts was evaluated by titrimetry. Results: Hydroalcoholic extract of leaves of *Kalanchoe pinnata* showed more dissolution of calcium oxalate as compared to alcoholic extract. Although the dissolution of calcium oxalate by hydroalcoholic extract was less than that of standard drug. Conclusion: Results obtained from this research work indicated promising effects of *Kalanchoe pinnata* leaves in dissolution of calcium oxalate. Extracts of *Kalanchoe pinnata* leaves can be used for the effective treatment of urolithiasis.

Keywords: *Kalanchoe pinnata*, **Antiurolithiatic Activity, Calcium Oxalate, Hydroalcoholic Extract, Alcoholic Extract, Cystone**

C-207

A Novel Suspending Agents Used in the Preparation of Paracetamol Suspension, *In-vitro* Characterization

T.Sai, R.V.Koteswararao, G.Navya and Y.Vamshi Vishnu

Department of pharmaceutical sciences, Aurobindo college of pharmaceutical sciences, Warangal, Telangana State, India
Saithota3@gmail.com

Abstract:

The aim of present study is to search for cheap and effective natural Excipients those can be used as an effective alternative for the formulation of pharmaceutical suspensions. The study was aimed with to compare between the flocculating behaviour of peels of onion(*Allium cepa*), green gram (*Vigna radiate*) and tragacanth, & comparison between their suspending properties. For this all the four suspending agent were subjected to physicochemical study and evaluated for its flocculating and suspending properties. Suspensions of Paracetamol were prepared and compared with different concentrations (0.5%, 1%, 1.5% and 2% w/v) of onion(*Allium cepa*), green gram (*Vigna radiate*),and tragacanth gum. Their sedimentation profile, pH, and rheological behaviour were compared. The green gram peel powder was found to be a superior suspending agent than Onion peel powder and is comparable to tragacanth. Studies indicate that the green gram peel powder may be used as a pharmaceutical adjuvant and as a suspending agent at 2%w/v, depending on its suspending ability and the stability of the resultingsuspension.

Keywords: Paracetamol, onion(*Allium cepa*), green gram (*Vigna radiate*),HPMC.

C-208

Determination of Total Phenolic Content of Different Phyllanthus Species

Pragya Soni , Rakhi Khabiya, Akanksha Dwivedi and GN Darwheker

Acropolis Institute of Pharmaceutical Education and Research, Indore, M.P, India
pragyasoni285@gmail.com

Abstract:

The present work includes the determination of the phenolic content in different nine phyllanthus species, using folin coicalteu's reagent with the help of UV spectrophotometer

1800. For the determination of phenolic content, gallic acid was used as standard and from that calibration curve was prepared and concentration of the drug was determined and resented as gm GAE/gm, and among all of them phyllanthus urinaria was found to have highest phenolic content i.e, 87.542 mg GAE/gm. The antioxidant activity of these species is directly proportional to the phenolic content.

Keywords: Phyllanthus species, gallic acid, phenolic content, Folin Ciocalteu's reagent

C-209

A Review on Herbal Medicine Research and Global Health

Samikhya Jena and Lingaraj Nayak

Jeypore College of Pharmacy,Rondapalli,Jeypore,Odisha, India
ln4uonly@gmail.com

Abstract:

Governments, international agencies and corporations are increasingly investing in traditional herbal medicine research. Yet little literature addresses ethical challenges in this research. In this paper, we apply concepts in a comprehensive ethical framework for clinical research to international traditional herbal medicine research. We examine in detail three key, underappreciated dimensions of the ethical framework in which particularly difficult questions arise for international herbal medicine research: social value, scientific validity and favourable risk-benefit ratio. Significant challenges exist in determining shared concepts of social value, scientific validity and favourable risk-benefit ratio across international research collaborations. However, we argue that collaborative partnership, including democratic deliberation, offers the context and process by which many of the ethical challenges in international herbal medicine research can, and should be, resolved. By "cross-training" investigators, and investing in safety-monitoring infrastructure, the issues identified by this comprehensive framework can promote ethically sound international herbal medicine research that contributes to global health.

Keywords: Ethical framework, cross-training, herbal medicine

C-210

Formulation and Evaluation of Contraceptive Herbal Gel

Nitin Kumar, Gaurav Saxena and Pooja Upapdhyay

1 College of Pharmacy (Harlal Institute of management and technology)
Greater Noida, UP, India
2 School of Pharmacy (Sardar Bhagwan Singh Post Graduate biomedical college and research science) Dehradun, Uttarakhand, India
Nitiniftmu94@gmail.com

Abstract:

The vagina has been used as a mucosal drug delivery route for a long time. Gels are semi solid, three dimensional and polymeric comprising the small amount of solid and dispersed large amount of liquid these systems have been used and are receiving a great deal of interested as vaginal drug delivery system. *Gossypium hirsutum* seeds (Gossypieae), *Azadirachta indica* seeds (Meliaceae), *Hibiscus rosa-sinensis* roots (Malvaceae) and *Trigonellafoenum graecum* seed (Fabaceae) extracts were formulated in an aqueous based carbopol-934(1%w/w) gel system. Six formulations of the gel were prepared by varying the proportions of polymers and preformulation studies on solubility, partition co-efficient, viscosity and bioadhesion were determined along with compatibility studies using a validated HPLC method. Based on these tests, formulation AA-6 was selected as best formulation and i*n-vitro* drug dissolution studies were carried out .Overall curve fitting demonstration that the drug liberation from mucoadhesive gels AA6 followed zero-order model (R2 = 0.9929) for burst release during first hour and followed Korsmeyer–Peppas model (R2 = 0.9976) for sustained release phase during later 23 hours suggesting non-Fickian diffusion. It could be concluded from the study that aqueous extract of herbs can be developed as a gel system topical contraceptive.

Keywords: Formulation; Poly herbal gels; Topical contraceptive; Vaginal drug

C-211

Evaluation of Antidiabetic Activity of Medicinal Plant Extracts Used By Tribal Communities in Rural Areas of East Godavari District, Andhra Pradesh, India

Ch. Lakshmi Prasanna and M. Chandra Lekha

Department of Pharmacognacy, Vikas Institute of Pharmaceutical Sciences, Rajahmundry,Andhra Pradesh, India, 533102.
Prasannachikkala1998@gmail.com

Abstract:

The prevalence of diabetes mellitus is increasing with ageing of the population and life style changes associated with rapid urbanization and westernization. *Physalis minima* is widely used in Indian medicine by the tribal communities to treat various diseases including diabetes. The present study was aimed at assessing the hypoglycaemic effects of extracts from *P. minima* in alloxan-induced diabetic rats. The powdered plant parts were successfully extracted with boiling water using soxhlet extractor. The Wister strains of male albino rats were used for the present study. The antihyperglycemic activity of the crude aqueous extracts of *P. minima* different parts were studied in alloxan-induced diabetic rat.The toxicity study results showed that the medium lethal dose (LD50) of the extracts is higher than 1g/kg body weight and hence, in a single dose administration, the plant extracts had no adverse effects. There is no significant level of reduction in fasting blood glucose level was noticed for the aqueous extracts of root and stem of P. minima.These findings clearly established that the ant diabetic efficacy of the flower and leaf extract of p. minima are almost equal and both activity by reducing the blood glucose level significantly than all other root and stem extracts.

Keywords: Diabetes mellitus; *Physalis minima*; hypoglycaemic; east Godavari; India

C-212

Simultaneous Estimation of Coumarins Present In Traditional Formulation Using High Performance Thin Layer Chromatography

Ezhilarasan.J, G.Syamala

PSG College of Pharmacy, Peelamedu, Coimbatore, India
jjezhilarasan96@gmail.com

Abstract:

In this study, we have attempted to scientifically validate the marketed formulation named as "Jeeva lehyam" used as an immuno modulator. This formuation contains "*Citrus aurantifolia*" as one of the major crude drug. The literature and the preliminary screening on this crude drug indicate the presence of coumarins as its major constituents. Hence, we have selected the p-coumaric acid (I) and umbelliferone (II) as standards to validate the lehya by the process of High Performance Thin Layer Chromatography (HPTLC). The different aliquots of standards I & II were applied along with the methanolic fractions of lehya on Silica gel 60F 254 plates using Linomat V applicator. Ascending development of chromatogram using n-hexane: ethyl acetate: glacial acetic acid (31:15:5 v/v/v) as mobile phase were performed. The resultant spots were detected in UV and scanned using the software Wincats 1.4.10 version. The Limit of detection for standard I & II were found to be 100 ng per spot and 20 ng per spot. The LOQ for standard one were 200-1000 ng per spot and the standard II were 40-200 ng per spot. Further quantification of the lehya was found to contain the p-coumaric acid 110.24 ± 1.07 ng/g at Rf 0.47 and the umbelliferone was reported as 54.4 ± 0.68ng/g at Rf 0.37. This study leads to the further development of entire validation protocol for the phytoconstituents present in the formulation.

Keywords: Lehya, p-coumaric acid, umbelliferone, HPTLC

C-213

Design, Development and Evaluation of Ready to use Tea formulations

S. A. Polshettiwar, S. R. Adsul and A. M. Baheti

Department of Pharmaceutics, MAEER's, Maharashtra Institute of Pharmacy, MIT Campus, Pune, Maharashtra, India
satishmip@gmail.com

Abstract:

Tea is one of the most popular beverages in the world. Enormous amount of green tea, oolong tea & black tea are consumed all over the world, because tea relieves drowsiness, stress or neuralgia in humans. Traditionally Tea is prepared by brewing Tea leaves in hot water. But due to fast lifestyle, many peoples are not able to enjoy their tea as a beverage and people when are travelling, did not get good quality tea or get adulterated tea. Therefore present investigation has prepared tea which contains all the ingredients which are require to make a tea. The methodology involves extraction, Spray drying/ Freeze drying and preparation of formulation. This formulation are further evaluated for Organoleptic tests, tannin content, flavone content, caffeine contents & Quality control test of tablets. This formulation was also given to the students and their opinions are recorded.

Keywords: Tea, Freeze drying, Spray drying, Extraction

C-214

Calotropis gigantea: A magical herb of the nature

Kumar Arpit

Guru Gobind Singh College of Pharmacy Yamunanagar, Haryana, India

Abstract:

The use of herbs and medicinal plants as the first medicines is a universal phenomenon. Herbalism is the study of botany and use of plants intended for medicinal purposes. *Calotropis gigantea* linn commonly known as mudar or yercum belongs to the family asclepiadaceae. Herbal plants are effective source of traditional and modern medicines, useful for primary health care. Plants are richest source of bioactive organic chemicals on earths. The active metabolites like phytochemicals from the medicinal plants work under exploration for the development of novel and biodegadable effective drugs as an alternative to the ineffective cntemporary medicines. This magical herb has great medicinal importance to treat fever, indigestion, cold, cough, cardio tonic, asthma, spleen, scabies etc. The leaves of this contained various secondary metabolites such as cardenolides, flavonoids, terpenes, pregnanes and a non protein amino acid, carbohydrates, saponins, alkaloids, sterols. Evaluated *Calotropis gigantea* ethanolic extract was agreed oraly in incision and dead freedom wound healing models. Some herbal formulations serve as detoxification agents, antioxidant, and anti-cancer therapies.

Keywords: Anti-cancer, ***Calotropis gigantean*****, Herb**

C-215

A Comprehensive Review on Recent Herbs Having Anticancer Potential

Shubham Garg, Mohit Manchanda and Manju Nagpal

Chitkara College of Pharmacy, Chitkara University, Chandigarh-Patiala Highway, Rajpura- 140401, Punjab, India
shubhamgarg891995@gmail.com

Abstract:

Cancer is a frightful disease and any practical solution in fighting this disease is of paramount importance to public health. Besides the rationalized allopathic drugs, it is worth to evaluate traditional folk medicines i.e. a plant based therapy. There are tremendous reserves of organic compounds found in many plants on Earth that only a very small amount of which as an **anti-cancer compounds**. Worldwide endeavors are underway to discover new anti-cancer drugs. Nowadays, there is increasing tendency to the use of traditional and herbal medicines in **cancer treatment due to severe side effects of allopathic drugs used** to arrest the insidious nature of the disease. Many herbs have been evaluated in clinical studies and are currently being investigated phytochemically to understand their anti-tumour actions against various cancers. Thus, cancer patients who are burdened by drug induced toxic side effects, have now turned to hunt for help from the complementary and alternative medicine hoping for a better cure. The oversight of this paper aimed to investigate various medicinal plants which are widespread in many parts of the world and have been used for the treatment of cancer.

Keywords:Anti-cancer, Tumor, Public health

C-217

Evaluation Of Membrane Stabilizing Activity With Phytochemical Screening Of Methanolic Extract Of Neolamarckia Cadamba (Roxb.) Leaves

Debiparna Biswas

Delhi Pharmaceutical Science and Research University, India
biswas.debiparna6@gmail.com

Abstract:

As there is not enough evidence for detailed physicochemical and phytochemical evaluation on leaf of *Neolamarckia cadamba* is reported. Therefore present work is taken up in the view to completely standardize the herb in accordance to parameters of world health organization (WHO) Guidelines and standard laboratory procedures. In the present study Phytochemical Constituents and Physicochemical Properties of leaf of *Neolamarckia cadamba* was thoroughly investigated for their physicochemical characters and major active constituents to analyze their quality, safety and standardization for their safe use. The generated information of the present study will provide data which is helpful in the correct identification and authentication of this medicinal plant. The leaf of *Neolamarckia cadamba* has been known to be used as anti-diabetic, anti-diuretic, anti-pyretic, in the treatment of anemia, tumor as well as for the improvement of the semen quality. The present study showed that the leaf of *Neolamarckia cadamba* have pharmacologically important chemical compounds such as saponin &tannins, alkaloids, phenolic compounds, terpenoids and flavonoids.

C-218

Pharmacognostical Studies on A Tropical Plant, *Syzygium cumini* Linn from Jodhpur District, Rajasthan

P.K Goyal

Alwar Pharmacy College, Alwar, Rajasthan, India
goyalmonu1986@gmail.com

Abstract:

The developing countries mostly rely on traditional medicines. These traditional medicines involve the use of different plant extracts or the bioactive constituents. This study such as ethno medicine keenly represents one of the best avenues in searching new economic plants for medicine. In keeping this view in mind, the present investigation is carried out on *Syzygium cumini* seeds of Jodhpur District, Rajasthan, North -West India.In present investigation, the detailed pharmacognostic study of *Syzygium cumini* seed is carried out to lay down the standards which could be useful in future experimental studies. The study includes macroscopy, microscopy, preliminary phytochemical screening and physicochemical evaluation. Morphological and anatomical studies of the seed will enable to identify the crude drug. Preliminary phytochemical screening will be useful in finding out the genuineness of the drug. Ash value, extractive value can be used as reliable aid for detecting adulteration.These simple but reliable standards will be useful to a lay person in using the drug as a home remedy. Also the manufacturers can utilize them for identification and selection of the raw material for drug production. These standards are of upmost importance not only in finding out genuineness, but also in detection of adulterants in marketed drug and as well in formulation. The results suggest that the phytochemical properties of the seed for curing various ailments.

Keywords:*Syzygium cumini,* **Pharmacognostical, Microscopy, Phytochemical, Traditional Medicines**

C-219

Cinnamon –A Magical Drug

Mohit Saini, Nitin Singla and Pradeep Kamboj

Jan Nayak Ch. Devi Lal College of Pharmacy, Sirsa, Haryana, India
mohitsaini8264@gmail.com

Abstract:

Cinnamon (*Cinnamomum zeylanicum*) is a spice which is obtained from the internal bark of the genus cinnamomum tree species. Cinnamon is mainly used as an aromatic spice and tastes different type of recipes, sweets and dishes, cereals, snacks and traditional foods. Cinnamon's aroma and flavor is derived from its essentials oils and principal component cinnamaldehyde and other components such as eugenol. It has been acquainted as one of the healthiest spices and has diverse medicinal activities. Bark has phenolic flavonoids, carotenoids contents and rich amount of polyphenols as powerful antioxidants. It inhibits the growth of certain bacteria and fungi and also reduces the blood glucose by increasing the secretion of insulin in the body. Cinnamon was considered very valuable in the ancient nations that it was considered as a gift to emperors and to god. Its source was kept confidential in the Mediterranean world, for century the masala was kept by the intermediaries handling the business for the protection of its monopoly as suppliers. Now a day's cinnamon is produced in India, Sri Lanka, Bangladesh and Myanmar. It interferes with carbohydrates digesting enzyme and reduce degradation of carbohydrates as a result it decreases the entry of glucose from intestine to blood stream. It reduces the growth of cancer cells. Therefore, this review has been undertaken to highlight the medicinal importance of the drug.

Keywords: Cinnamon, Eugenol, Sri Lanka

C-220

Trichosanthes diocia : Boon of Traditional Medicine

Rashmi Arora and Naresh Singh Gill

Department of Pharmaceutical Chemistry, Rayat Institute of Pharmacy, Railmajra, SBS Nagar, Punjab, India
rashmiarora80@gmail.com

Abstract:

Trichosanthes dioica Roxb. (Pointed gourd) genus of cucurbit holds a coveted position in Indian market. Its fruit, leaves and tender shoots are used in medicine and food system. The crop is of Indo-Malayan origin is extensively grown in eastern India as compared to South Asia. Propagation is through fresh vine cutting and root suckers. Phytochemical investigation revealed groups like alkaloids, glycosides, flavonoids, steroids, tannins and phenols. Various chemical constituents present in it are tetra and pentacyclic triterpe, cucurbitacins, peptides, riboflavin, vitamins, 24α and β-ethylcholest-7-enol, 5-hydroxytryptamine, colocynthin, trichosanthin, galactose and hentriacontane. As all parts of this plant have been traditionally whole plant is having medicinal properties like chemo-preventive, diuretic, expectorant, anti-HIV, anxiolytic, analgesic, anti-diarrheal, anti-pyretic, antioxidant, anti-diabetic, anti-microbial, abortifacient, anti-tubercular, wound healing, anti-inflammatory, cholesterol-lowering and cardiotonic agent. The fruits and leaves are the edible parts of the plant which are cooked in various ways either alone or in combination with other vegetables or meats. The fruits are easily digestible, diuretic having anti-ulcerous effects.Juice of leaves is used as tonic, febrifuge and in acute cases of enlargement of liver and spleen. They are also edema and alopecia. Root is a drastic

purgative and useful in jaundice, anasarca and ascites. Leaves are cholagogue, aperient, tonic, febrifuge, expectorant and anti-haemorrhoidal. Having promising uses in large therapeutic areas, this little exploited planthas immense potential for drug research.

Keywords: *Trichosanthes dioica,* **Cucurbitacin, Antitumor, Anti-diabetic, Hepatoprotective**

C-221

Physico-Chemical Parameters and Phytochemical Screening of Different Extracts of Leaf of *Parthenium hysterophorus* L.

Karnail Singh, Kavita Gahlot, Gaurav and Mangal Sain Hooda

Janta College of Pharmacy, Butana, Sonepat-131302, Haryana, India
Karnail_dalal@yahoo.co.in

Abstract:

From last few decades there is an increased use of herbal medicines all over the world and now there is need to study herbal drugs on scientific basis to develop their monographs. The *Parthenium hysterophorus* L. is commonly known as carrot grass and it belongs to family asteraceae also called compositae. The present research work carried out on different extracts of leavesof *Parthenium hysterophorus* L. were screened for their phytochemical screening, ash value, acid insoluble ash, water soluble ash, loss on drying, extractive values according to the guidelines of WHO. The phytochemical screening revealed the presence of alkaloids, glycosides, flavonoids, saponins, steroids, proteins and amino acid. The present study will provide useful information for its identification and physiochemical standards discussed here can be considered as the identifying parameters to substantiate and authenticate the drug.

Keywords:*Parthenium hysterophorus*, **phytochemical screening, physicochemical parameter, asteraceae**

C-222

Design and Evaluation of Anti- Parkinson's Drug loaded Solid-Lipid Nanoparticles for Brain Targeted Delivery

Sivakumar Kannan and Jawahar Natrajan

Department of Pharmaceutics, JSS College of pharmacy, Ooty, India
sivapahramasiva@gmail.com

Abstract:

The project establishes that dopamine receptor agonists, bromocriptine can be produced as solid-lipid nanoparticles using glyceryltrimyristate to treat parkinson's more effectively. This drug belongs to the category of BCS class II drugs which are basically classified as low solubility and high permeability drugs. The primary plan of the study was to develop the drug loaded as solid-lipid nanoparticles by Microemulsion technique. Characterization of the SLN was done by determining the zeta potential, particle size and polydispersity index, where the optimized formulation was found to possess a zeta potential of -1.10 mV and particle size and PDI of 68.83 nm and 1.000, respectively. Surface morphology of the SLN was investigated by Scanning Electron Microscopy (SEM), where the particles were found to be spherical in shape and have a particle size under 100 nm. Encapsulation efficiency of the optimized SLN was found to be 85%. From the *in vitro*release (Diffusion) study which was conducted, it was found that the optimized SLN showed sustained release of drug in comparison with pure drug. The best fitted model gives the highest R2 value and least slope value. Thus, korsemayer-peppas model fits best for the dissolution data of the optimized batch as it showed the highest value for R2. (0.968). Cytotoxicity Studies (Cell-line study) of nanoparticles and placebo were haemocompatible and did not produce any toxic effects. In-vivo Brain distribution studies (Brain bioavailability in animals) indicate that there was more than 3-fold increase SLN formulation concentration in Brain compared to Bromocriptine suspension.

Keywords: Bromocriptine,Gleceryltrimyristate, Microemulsion Technique, Solid-Lipid Nanoparticles, Brain Targeting

C-223

Effect of garlic on blood glucose level in patient with diabetes mellitus

Shakti Sharma, Pardeep Kamboj, Deepti Pandita and Vinay lather

Department of Pharmaceutical Sciences, JCDM College of pharmacy Sirsa-125055, Haryana India
dr.shaktisharma101@gmail.com

Abstract:

Diabetes mellitus is a group of metabolic diseases in which a person experiences high blood glucose level either because the body produces inadequate insulin or the body

cells do not respond properly to the insulin produce by the body. Glucose is the primary source of energy in the cell and is essential for life. An adequate supply of glucose is necessary for normal function of the brain, muscles and several other body organs. Low blood glucose (hypoglycaemia) is therefore associated with loss of consciousness, seizures and in the most severe cases – death. Garlic has a potential role in controlling blood glucose levels. The principle active agent in garlic is allicin, a sulphur containing compound that with its break down product gives garlic its characteristic odour. Allicin is formed enzymatically from an odourless precursor, allin, when garlic cloves are mechanically disrupted. The probable mechanism underlying garlic hypoglycaemic effect most likely is increased insulin secretion and sensitivity. The efficacy and possible role of garlic in the management of diabetic patient has been justified and confirmed in clinical studies.

Keywords: Garlic, Diabetes, Allicin

C-225

Natural Pigments in Pharmceuticals

Akshita, Bhawna Chopra

Guru Gobind Singh College of Pharmacy, Yamuna Nagar-135001, Haryana, India
Akshi13.sasouli@gmail.com

Abstract:

Natural pigments have great interest with in the market now a day's particularly microbial pigments. Color is the most vital attribute of any article particularly food. Biocolour word consists of two words bio and colour that means something natural used for coloring purpose. There are different sources of natural pigments. Some of these have been summarized in later sections. These have been extracted from fruits, vegetables, seeds roots and even microorganisms. There are various applications of colorants in pharma, food, textile, printing industries etc. In pharmaceutical industry, most of the microorganisms has shown the efficiency in potential clinical applications of secondary metabolites (pigmented) for treating various diseases. These have many properties like antibiotic, anticancer and immune-suppressive properties. A red pigment, astaxanthin is important carotenoids which has great commercial value, and is also used as pharmaceuticals feed. A strong therapeutics molecules prodigiosins are known for their immune suppressive anticancer properties. Further, they also produces immune suppressant and antitumor properties

Keywords: Colorants, Plants, Microbial sources

C-226

The Anti-Oxidative and Anti-Diabetic Activities of *Chlorophytum boriviliuanumIn vitro*

Hemlata Rathore

School of pharmacy cec Bilaspur, Chhattisgarh, India
Khushi2027rathore@gmail.com

Abstract:

This investigational research has summarized the current development of *Chlorophytum borivilianum* for potential use as antidiabetic agent. *Chlorophytum borivilianum* have been reported to have hypoglycemic activity. These activities of Chlorophytum borivilianum regulate plasma glucose level and prevent diabetic complications due to their antioxidant activity. The hypotriglyceridemic and hypocholesterolemic actions of *Chlorophytum borivilianum* will help diabetic patients in reducing the risk of atherosclerosis. Also conventional antidiabetic drugs have side effect like weight gain. *Chlorophytum borivilianum* reduces body fat thereby making them excellent for treatment of diabetes. This research showed the potent evidence that the *Chlorophytum borivilianum* have the effective therapeutic value as a anti-diabetic effect. The research investigation showed how the aqueous root extract of *Chlorophytum borivilianum* have the potent inhibitory action on α- glucosidase and α-amylase in invitro study. This inhibitor action showed that the *Chlorophytum borivilianum*can effectively used as antidiabetic purpose.

The selected enzymes (α- glucosidase and α- amylase), which regulate the diabetic factor where if body function not working properly this may led to the person as a diabetic patient. So that it is necessary to control which cause diabetic, however these enzymes were selected as target in order to control the diabetic factor. The selection of herbal drug would be the more convent relative to other chemical based molecules because herbal drug produce less side effect than any other chemical based molecules. Though various study showed that long term use of insulin may led to cause other various disease and one of them are kidney failure and diabetic foot disorder, vision problem and many more. To conclude, the tuber of *C. borivillianum* has excellent antioxidant potential and is antihyperglycemic and antihyperlipidemic. The antidiabetic effect produced by the tuber of *C. borivillianum* is more effective than the drug glibenclamide.However, more research is needed with respect to toxicological evaluation of these *Chlorophytum borivilianum*.

Keywords:Hypoglycemic activity, Hypotriglyceridemic, Hypocholesterolemic, α- glucosidase, α- amylase

C-227

Comparison of Acid Neutralizing Capacity of Herbal Juices over an Antacid

Ankit Bajpai, Vikas Kumar Pal, Yogendra Pal and Ashish Srivastava

Institute of Pharmacy, Pranveer Singh Institute of Technology, Kanpur - Agra - Delhi National Highway - 2 , Bhauti - Kanpur , Uttar Pradesh, India.
Ankitb819@gmail.com

Abstract:

Heartburn, a **very common symptom created by acid refluxisasituationwheresomeofthestomachcontents(food and stomach acid) are forced back up into the oesophagus with burning sensation**. There are various therapies available to treat heart burn like- Empirical therapy, Ambulatory pH monitoring, Medical therapy and Surgical therapy. Available remedies in allopathy are antacids, proton pump inhibitors (e.g. Rabeprazole), H2 blockers (e.g. Cimetidine) etc. Along with it many herbal preparations having history of traditional use are also widely applied specially in Indian Scenario due to easy availability as well as consideration of having minimal side effects and negative feedback mechanism in comparison to allopathic medicines. Cold milk, coconut water, banana shake etc. are the most common herbal or home remedies. In the present work, we have made a comparison of acid neutralising capacities (ANC) of herbal juices with a commonly used antacid where we found that some of the herbal remedies are better in the terms of ANC.

Keywords: Heartburn, Acid reflux, Anta acid, Acid neutralising capacity, Herbal remedies

C-228

Standardization and Development of Quality Control Parameters for Herbal Juices

Ritika[1], Dharmendra Kumar[2], Preet Amol Singh[1] and Ashish Baldi[1]

[1]Department of Pharmaceutical Sciences and Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda-151001, Punjab, India.
[2] ISF College of Pharmacy, Ghal Kalan, Moga, Punjab, India.
ritikadigra@gmail.com

Abstract:

Quality of herbal products has always been a major problem for herbal industries worldwide due to serious concern about safety, efficacy and purity. As these products are claimed for the health benefits but are used as therapeutic agent. In this regard, regulatory agencies across the globe need to implement stringent guidelines to ensure production of herbal products with assured quality. The objective of the present study was to establish quality control parameters for herbal juices as one of the major selling product in the market, by performing a representative study on amla juice. Different brands of amla juice were procured form the market and were tested for stability studies at various conditions for the period of three months. Results obtained after one and two months were stable but the results obtained after 3 month were unstable as the juices got degraded and showed negative results for all the three selected marketed formulations. A comparison has been established between the extracted fresh Amla juice and three marketed formulations, by performing phytochemical screening. Presence of ascorbic acid, gallic acid and ellagic acid in amla gives it good antioxidant property. All the three marketed formulation were tested for the presence of antioxidants by HPTLC analysis but it was found that ellagic acid was devoid in all the formulations. This shows that the juices available in the market were of compromised quality. As they are directly linked to the patients, there is no standardized procedure to check the quality of these products. So there is need to establish the standardized procedure and guidelines to regulate the quality of these products.

Keywords: Standardization, Herbal juices, Anti-Oxidants, Ellagic Acid, Gallic Acid, Ascorbic Acid

C-229

Phytochemical Investigation and Evaluation of Anthelmintic Activity of Various Leaf Extracts of *Melia azedaracha L.*

Manoj kumar sahu , Sangram .K. Panda and Nakshetra.B.Nayak

Jeypore College of Pharmacy, Rondapalli, Jeypore -764002, Koraput, Odisha, India
manojkumarsahu707@gmail.com

Abstract:

Medicinal plants are widely used by the traditional medicinal practitioners to cure various diseases due to their world-wide availability and less side effect. The present study is to examine the anthelminitic activityof various leaf extracts such as ethyl acetate, ethanol, n- butanol and pet. ether of *Melia azedarach*. Phytochemical investigation is done by

using various chemical analysis and standard methods.The anthelmintic activity is evaluated by using Indian earthworms Pheretimaposthuma as test worm, Albendazole. (60mg/ml) was used as a reference standard Phytochemical study showed presence of alkaloids,flavonoids ,steroids ,terpinoids , anthraquinones , tannins . saponins , acids . Among all the extract, ethanol and petroleum ether showed dose dependant & significant anthelminitic activity, petroleum ether showed better activity as compared to reference drug albendazole.

Keywords:*Melia azedarach,* **albendazole, Pheretimaposthuma, Phytochemical**

C-230

An Overview on Chemical constituents and Pharmacological effects of *Citrus aurantium* species

Syed Tazib Rahaman

Gitam Institute of Pharmacy, Gitam university, Visakhapatnam, Andhra Pradesh, India
tazib.research@gmail.com

Abstract:

Nature has provided almost each and every valuable resource which all the living organism are in need of. There have been many medicinal plants which have been possessing various medicinal and pharmacological properties which can cure several diseases which effect living organisms most importantly humans. One of those vital plants are*Citrus aurantium* species. With this review we would able to identify different chemicals such as Linalool, Bergamot, Farnesol, D-Limonene in higher concentrations and a-thujene, apinene, Camphene, Sabinene, b-pinene, b-Myrcene, p-Cymene, Ocimene (E), Linalool oxide (Trans), Linalool oxide (Cis), Terpinen-4-ol, Terpineol, Nerol (Or) Cis-Geraniol, Neral, Geranial, Neryl acetate, Geranyl acetate, Nerolidol, Farnesal, Eicosane, Tetracosane, Pentacosane in lower concentrations which in total constitute the volatile oil isolated from this plant and we would also discuss about several pharmacological effects possessed by this plant such as Analgesic, Anti- cancer, Anti-diabetic, Anti Bacterial, Anti oxidant, Anxiolytic, Hypoglycemic and Hypolipidemic properties which makes *Citrus aurantium* the most Valuable medicinal plant for Medical and Allied Health Sciences.

Keywords: Hypoglycemic, *Citrus aurantium*, **Pharmacology**

C-231

Different Extraction Methods Employed for the Isolation of Secondary Metabolites from Plants

S. Sharma and S. Tyagi

Guru Gobind Singh College of Pharmacy, Yamunanagar, Haryana, India

Abstract:

Pharmaceutical and scientific communities have recently received the attention of the medicinal plants have been documented the therapeutic potential of natural compounds to analyze their biological activity. Plants are recognized in the pharmaceutical industry due to their broad spectrum of structural diversity and their wide range of pharmacological activities. The chemically active compounds that are present in plants referred as secondary metabolites such as tannins, saponins, alkaloids, flavonoids etc derived from different parts of plants. These secondary metabolites are of prime medicinal usage but their extraction as part of phytochemical or biological agents presents specific challenges that must be addressed throughout the solvent extraction process. Successful extraction begins with careful selection and preparation of plant samples, suitable for a particular class of compounds or plant species. This review article intends to give an overview of the significance of different extraction processes to isolate secondary metabolites from plant material with a choice of solvent to bring out the secondary metabolites from the plants.

Keywords: Plants, secondary metabolites, phytochemical, extraction, medicinal.

C-232

Assessment of Total Phenolic,Total Flavanoid and Total Tannin Contents of Various Extracts of Prickles of *Bombax ceiba*.

SunnyBhalodiya, Nikunja Bavishi and Jigna Vadalia

Department of Pharmaceutical Sciences, Saurashtra University, Rajkot -360005, Gujarat, India
sunnybhalodiya97@gmail.com

Abstract:

*Bombax ceiba*is deciduous tree found throughout India and other tropical countries mentioned as a traditional drug and is official in ayurvedic pharmacopeia. The present study wasaimed for quantitative estimation of phenols, flavonoids and tannins for various extracts using methods described in Folin-ciocalteu, Hajimahmoodiet al and Folin-denis method

respectively. The prickles were collected and authentified by the botanist and then dried, powdered and extracted using various solvents like petroleum ether, chloroform, ethyl acetate, methanol, hydroalcoholic mixture. All extracts at various concentrations were determined for phenols, flavonoids and tannins for quantitative assessment using UV-visible spectrophotometer and pyrogallol as standard for phenol and tannin estimation and quercetin as standard for flavanoid. From all extracts ethyl acetate extract was found to have highest phenolic, flavonoid and tannin content (in µg/ml of equivalent to standard used) which is responsible for scavenging power and stabilizing lipid peroxidation and plays a crucial role in antioxidant activity of herbal drug.

Keywords: *Bombax ceiba,* **Quercetin, Pyrogallol, Flavanoids, Phenols and Tannins.**

C-233

Phytochemical analysis, Isolation, Characterization and Antimicrobial Activity of *Flemingia strobilifera* (Linn) R.Br.

Swati Madan and Ramanpreet Walia

Department of Pharmacognosy & Phytochemistry, Amity Institute of Pharmacy, Amity University, Noida – 201303, Uttar Pradesh, India
smadan3@amity.edu

Abstract:

Flemingia strobilifera (R.Br.), an important medicinal plant, commonly known as Kusrunt and belongs to the *Leguminosae* family. The plant is found in Sind, Rajputana, Bengal, South India and Andamans. The roots of this plant have been indigenously used in epilepsy and hysteria and the leaves are reported to be used as vermifuge. Previous phytochemical investigations reported various chalkones, flavonoid glycosides, aurone glycosides and epoxy chromenes. The root of *F. strobilifera* was extracted with methanol, butanol and dichloromethane. Antimicrobial activity of the extracts was determined against both bacteria and fungi while the isolation and characterization of compounds of the extracts was done by column chromatography, 2D spectroscopic studies and spectral data (U.V, I.R, NMR and MS).Flemingiaflavanone (8, 3′-diprenyl-5, 7, 4′-trihydroxy flavanone), Genistin (5, 4′- dihydroxy isoflavone 7-O-glucoside) and β - sitosterol-D glucoside were isolated from the

extracts. Flemingiaflavanone showed significant antimicrobial activity against Gram-positive (*S. aureus*, *S. epidermidis*, MRSA), Gram-negative bacteria (*Ps. aeruginosa*, *E. coli*) and fungi (*C. albicans*). Genistin showed moderate activity against Gram-positive, Gram-negative bacteria and fungi.

Keywords: *Flemingia strobilifera*, **Flemingiaflavanone (8, 3′-diprenyl-5, 7, 4′-trihydroxy**

flavanone), Genistin (5, 4′-dihydroxy isoflavone 7-O-glucoside), MeOH (Methanol), BuOH

(Butanol), Antimicrobial activity, MIC (Minimum inhibitory concentration).

C-234

Development of Fingerprinting Method for Piperine content in 'Navasaya Churna' an Ayurvedic Formulation

Nirmal Dongre, Pankaj Sharma, Birendra Shrivastava and PK Dubey

Indore Institute of Pharmacy, Indore, Rajiv Gandhi Prodyogiki University, Bhopal, Madhya Pradesh, India
dongrenirmal@gmail.com

Abstract:

Navayasa Churna is oldest and important ayurvedic formulation,is described in Bhaishajyaratnavali in Pandu roga chikitsa[1]is combination of Nine Plantsi.e. Amlaki, Bibhitaka,Haritaki,MaricaPippali,Sunth,Chitraka,Musta,Vidanga andLauha bhasma. The formulation is used for the treatment of pandu, Hepatoprotective properties and Liver disorders. The present study is an attempt to develop the fingerprinting method for Navasaya Churna by UV Spectrophotometer and simple high-performance liquid chromatography using Piperine as a standard, which is as an important and major content in formulation. The method for spectrophotometric determination of piperine from the fruits of *Piper longum, Piper nigrum* and Navasaya Churna has been developed at absorption maxima 342.7nm and in RP- HPLC methods for determination of Piperine have been developed, with mobile phase methanol at flow rate of 1.0ml/min, and effluent was monitored at 342.7 nm. Method was Validated.The concentration of piperine in raw material was found to be 2.981 ± 0.38 % (w/w) in marica and 0.981 ± 0.047 % (w/w) in pippali and in three lab. batch of Navasaya churna name NY-I, NY-II, and NY-III, was 0.223 ± 0.34, 0.219 ± 0.42, 0.215 ± 0.43 % (w/w), respectively in UV and2.98± 0.37%w/w in marica,1.08 ± 0.41%w/w in pippali and in threelab. batch of Navasaya Churna NY-I, NY-II, NY-III,was 0.225 ±0.61, 0.223±0.49, 0.219 ±0.53%w/wrespectively in HPLC.

The Piperine content of all three batches is found to be in close proximate. Obtained results were compared with marketed formulation.

Keywords: Fingerprinting, Piperine, Navasaya churna.

C-235

Stability Testing of Constituents of Triphala by HPTLC Method

Sara Usmani, S.H.Ansari and Sayeed ahmad

B.S. Anangpuria Institute of Pharmacy, Ballabgarh-Sohna Road, Faridabad, Haryana, India - 121004
sarausmani192@gmail.com

Abstract:

The study was performed to scientifically evaluate the quality and stability of Gallic acid, Tannic acid and quercetin in coarse powder of Terminalia Chebula, Terminalia belerica, and Embelica officinalis respectively in various conditions. The drugs werewere analyzed for Stress stability testing, Real-timestability testing and Accelerated stability testing. The drugs were firstly kept in stability chamber for 6 months under the conditions of 45°C/75%RH in Accelerated stability study. Under the Stress conditions, the drugs were treated with different conditions such as, acidic, basic, wet heat, dry heat, freeze, stock solution etc. For real-time stability studies, the drugs were kept for6 months on room temperature i.e., 15-35°C/50%RH. The samples were evaluated by HPTLC which was performed after 18hrs of sample preparation in all the three mentioned studies.

Keywords: HPTLC, stability study, evaluation.

C-236

Clinical Pharmacognosy: Roaring the Contribution of Naturals in Pharmaceutical Sciences

Sudhir Kumar, Ashish Baldi and Dinesh Kumar Sharma

Research Scholar, Uttarakhand Technical University, Dehradun, Uttarakhand & ISF College of Pharmacy, Moga, Punjab, India-142001
sudhirkumarthukral@rediffmail.com

Abstract:

Clinical pharmacognosy validates the traditional knowledge, therapeutic uses, clinical evaluation and therapeutic monitoring of drugs derived from natural sources. It seems an urgent global need to identify perception towards the value and scope of clinical pharmacognosy in natural drug industries. Clinical pharmacognosy significantly filled a gap between the clinical validation and therapeutic implication of plant derived and other natural drugs. Several potential problems associated with herbal remedies like lacking of systematic reviews and evidence based data about their therapeutic efficacies are one of the reasons behind the belief that they have lower toxicities. Clinical validation can describe complete document based evidence regarding therapeutic indications, clinical studies, pharmacological investigations, adverse reactions, drug interactions, contraindications, precautions and toxicities with a practical perspective. The resurgence of natural products in the world creates a demand for clinical studies in the field of natural medicine. There are huge capacities of research in the field of herbal and traditional medicine and this new streamline discipline may extend the scope of clinical aspects of pharmacognosy and play a progressive role in the safe, rational and efficient use of traditional medicine. It seems that in this millennium, role of clinical pharmacognosists is extremely important for providing data regarding different aspects of clinical applications of natural based drugs. The rational study of herbals and traditional medicines will add standard clinical values to them, with a focus to establish clinical pharmacognosy features and imparting health to all.

Keywords: Clinical pharmacognosy, scope, herbal medicine.

C-237

Evaluation of Genetic Diversity of *Spilanthes acmella* (L.) Murray using Molecular Markers

Veenu Joshi and S.K. Jadhav

Center for Basic Science, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India

Abstract:

Spilanthes acmella (L.) Murray is a multipurpose miraculous medicinal plant of Asteraceae family possessing antiplasmodial, insecticidal and larvicidal properties that makes it a potent source of antimalarial drug. Genetic diversity studies are necessary for sustainable management and designing conservation strategies for the plant. Genetic diversity was assessed in 25 genotypes collected from different regions of Chhattisgarh, India using Combined RAPD and ISSR markers. From 30 markers total 231 bands were scored and percent polymorphism of 89.17% was obtained. Dendrogram was constructed on the basis of the similarity matrix data which divides the accessions into two major clusters at 21% similarity

which divides plant genotypes from different regions into different clusters showing high genetic variability.

Keywords: Larvicidal, Asteraceae, Diversity, Molecular markers, Genetic Variability

C-239

Recent Advancements in the Field of Colon Cancer with Special Reference to Phytomedicine

Rohit Kumar and Reena Gupta

Lovely School of Pharmaceutical Sciences, Lovely Professional University, Phagwara - 144411, Punjab, India
rohit.kumarr88701@gmail.com

Abstract:

Introduction: Colon Cancer is the third most common cancer in men and the second in women. At present first line colon cancer therapy involves invasive processes such as catheters to permit chemotherapy to shrink any tumour present and surgical removal of tumour followed by a regimen of chemotherapy and radiation therapy. The main goal of chemotherapy agent and radiation therapy is destroy the cells of cancer. The main goal of chemotherapeutic agent and radiation therapy is to destroy the cells of cancer. In this, the usefulness of the therapy is directly associated to the treatment capacity to target and kill the tumour cells without effecting the healthy cells .Unfortunately ,This strategy often fails because of recurrence of metastatic or recurrent disease. In some cases, patients discontinue the chemotherapy before the drug has a chance to eradicate the tumour because of its intense side effects. That why there is need to find the efficacy of various medicinal plants having anticancer potential with no side effects. Objective- Phytomedicines ,a new therapeutic approach for the treatment of Colon Cancer along with the chemotherapy to complexly eradicate the colon cancer. Materials and Methods- In present study an exhaustive literature has been carried using the various keywords in different scientific search engine(Scifinder, Scopus,Hinari,Ebseco,Google Scholar). Results and Discussion- Recent review of literature suggested that various chemotherapeutic drugs that are used in the treatment of colon cancer are associated with serious side effects which necessitate the need to find new chemotherapeutic agent with less side effects. Herbal and medicinal plants are used in the treatment of severe ailments. Herbal medicines have wide potential to in area of research guiding control and treatment of colon cancer along with the chemotherapy to eradicate the colon cancer.

Keywords: Chemotherapy, Colon Cancer, metastatic.

C-240

Green Tea Polyphenols as a Natural Antioxidants having Role in Prevention of

Inflammatory Bowel Disease

Diksha and Sazal Patyar
Lovely School for Pharmaceutical Sciences, Lovely Professional University
Phagwara – 144411, Punjab, India
diksha306557@gmail.coms

Abstract:

Introduction – Inflammatory bowel disease (IBD) is a chronic inflammation of the gastrointestinal tract without a specific cause or pathogen and affects millions of people worldwide. It is characterized by oxidative and nitrosamine stress, leukocyte infiltration, and up-regulation of intercellular adhesion molecule 1 (ICAM-1) expression in the colon. Green tea (Camellia sinensis) is rich in catechins, of which epigallocatechin-3-gallate (EGCG) is the most abundant. Catechins are chemical antioxidants that show their action in IBD by quenching free radical species and inhibit the oxidative stress. By reducing the level of reactive oxygen species and nitric oxide, green tea helps in the recovery of tissue injury and destruction. **Objectives-** Green tea polyphenols as a natural antioxidants having role in prevention of IBD. Antioxidant efficacy of green tea can be measured by evaluating the various pathological markers involved in the IBD. **Material and Methods**- Literature review was carried out from pubmed and science direct articles, year 2010-2017 and data was analyzed. **Results and Conclusion**- By reviewing the literature, current scenario of deaths due to IBD was studied. Currently, there is no curative treatment and the available treatments has very severe side effect. So, new therapies such as the nutritional ones, especially those with antioxidant properties having no side effects are suggested for the treatment of IBD.

Keywords: Inflammatory bowel disease, antioxidant, catechins, nitrosamine, leukocyte.

C-241

Stevia rebaudiana Bertoni Leaves – A potent Radical Scavenger from Different Geographical Sources

Ramanpreet Walia and Swati Madan

rwalia@amity.edu
Department of Pharmaceutical Chemistry & Phytochemistry, Amity Institute of Pharmacy, Amity University, Noida – 201303,

Uttar Pradesh, India

Abstract:

S. rebaudiana,a natural sweetner, the crude aqueous extracts of which have a potential cellular scavenging activity against free radicals. The leaves of the plant S. rebaudianaplay a potential antioxidant role that certainly invites further consideration. Due to their antioxidant activities,stevia leaves or crude extracts thereof might be considered notonly as natural sweeteners but also resources for foodpreservation. Health concerns related to oxidation in the body is a major concern among other ailments which damages cell membranes and other structures including cellular proteins, lipids and DNA in the human body through free radicals that are produced during this process. Control and cure of these health conditions require a source that can overcome these health concerns and that has a minimal potential to cause adverse effects. *Stevia rebaudiana*Bertoni, the nature's sweetener, is one of the effective sources to combat the damage related to oxidative reactions in the human body. The present study involves comparative evaluation of antioxidant activities of the dried leaves of five varieties of *Stevia rebaudiana*procured from five different geographical locations of India viz., Delhi, Surat, Kangra, Bangalore and Indore using DPPH radicalscavenging assay. Total phenolic and total flavonoid content were also determined using Folin-Ciocalteu reagent method and aluminum chloride colorimetric method respectively. A comparative HPTLC fingerprinting of the methanolic extracts of all the varieties was carried out using CAMAG system consisting of Linomat 5 spotting device and Scanner 3 and the content of rebaudioside A was also compared among the different varieties with respect to standard rebaudioside A. The content of rebaudioside A was found to be the highest in the variety procured from Delhi i.e., 1.63% w/w as compared to other varieties. The variety from Kangra showed the most potent antioxidant activity with $IC_{50}$of 54 µg/ml among all the varieties.

Keywords: Antioxidant, HPTLC, fingerprinting, total phenolics, total flavonoid.

D-1

Evaluation of Antihyperlipidemic Activity of Different Extracts from Aerial Parts of Pavetta Indica (Linn) In Rat Fed with High Fat Diet

Abdul Hameed Thayyil, Arumugam Kottai Muthu and Mohammed Ibrahim

Nizam Institute of Pharmacy & Research centre, Near Ramoji Film City, Deshmukhi, Hyderabad, Telugana – 508284, India
arthik03@yahoo.com

Abstract:

The present study was designed to investigate the hypolipidemic effect of different extracts from aerial parts of *Pavetta indica* in rats fed with high fat diet.The acute toxicity study was found that all the extracts are safe up to 2000mg/kg, so one tenth of this dose was consider as evaluation dose. Different extracts (Petroleum ether, Ethyl acetate and Methanol) of *Pavetta indica* were administered in dose of 200mg/kg/day to rats fed with high fat diet to assess its possible lipid-lowering potential.There was a noticed increase in the body weight in HFD fed group ($p<0.001$), which was reduced by the administration of methanolic extract of *Pavetta indica* (200mg/kg). The elevated levels of total cholesterol, triglycerides, phospholipids, LDL-C and VLDL-C were observed in rats fed with high fat diet (group II). After treatment of methanolic extract of *Pavetta indica* (200mg/kg/day) showed a significant ($p<0.001$) decrement in body weight, plasma and tissue total cholesterol, triglycerides, phospholipids, plasma LDL-C and VLDL-C along with an increase in plasma HDL-C when compared to HFD rats (group II). The similar result was not found in other two extract treatment groups. The methanolic extract of *Pavetta indica*could protect against atherosclerosis and decrease the atherogenic index than that of other extract treatment groups. This finding provides some biochemical basis for the use of methanolic extract of whole plant of *Pavetta indica* could protect against atherosclerosis and decrease the atherogenic index, thereby supporting the local use of *P.indica* in the management of atherosclerosis .

D-2

Screening of Aerial Parts of *Beta Vulgaris* for its Antihypertensive Activity on Rat Models

Singhal Aditi, Tyagi Swati, Mazumder Avijit and Mazumder Rupa

Noida Institute of Engineering & Technology (Pharmacy Institute), 19, Knowledge Park II, Greater Noida – 201306, Uttar Pradesh, India
singhal28aditi@gmail.com

Abstract:

Herbal plants serve as a potential source of remedy for various ailments. Herbal medicine sometimes includes plants, fungal, bee products, as well as minerals, shells and certain parts of animal. The objective of this study was to determine the anti-hypertensive activity of aerial parts of the *Beta vulgaris*. Further on the basis of preliminary phytochemical analysis the activity was correlated with the possible active constituents responsible for the biological activity and its mechanism. Wistar albino rats of either sex weighing between 150–180 gm were used for the study. Six rats were taken for each group. They were housed in propylene cages at 25± 20C with 12 hrs light and 12 hrs dark cycle respectively. Amaday (5mg/kg) was selected as standard and was given to the rats according to the body weight. All the standard drug, extract (300mg/kg), saline solutions were given to the rats by oral route to determine the antihypertensive activity of the plant. The values were expressed as mean ± SEM and analyzed by using ANOVA followed by Dunnett's t-test. It was observed that the plant produced significant antihypertensive activity and it was well correlated with the presence of phytoconstituent (flavonoids). Thus the results justified the traditional claim and further suggested that excess sodium can be dangerous in diets of individuals who were already overweight or hypertensive. Increased salt intake places stress on an already overworked cardiovascular system. Thus, a simple decrease in overall sodium intake would be very beneficial for antihypertensive patients.

D-3

Screening of Leaves of *Neolamarckia Cadamba* for Antimicrobial Potentiality

Rani Ketki, Singh Pragya, Mazumder Avijit, Mazumder Rupa and Salahuddin

Noida Institute of Engineering & Technology (Pharmacy Institute), 19, Knowledge Park II, Greater Noida – 201306, Uttar Pradesh, India
ketkigarg_sh@yahoo.in

Abstract:

Neolamarckia cadamba (Roxb.) Bosser, (syn: Anthocephalus cadamba) Family: Rubiaceae is widely distributed throughout India mainly in most warm type of deciduous and evergreen forests. The plant parts have traditional uses as an antimicrobial, wound healing and antioxidant activity. We carried out the antimicrobial potential of *N. cadamba* against a wide range of micro organism to justify the traditional claim.

The methanolic extract of *Neolamarckia cadamba* was screened for antimicrobial activity by both serial dilution and disc dilution technique. The extract was found to be very active against E.coli and Vibrio spp and comparatively resistant against Shigella spp tested. The methanolic extract of leaves of *Neolamarckia Cadamba* was highly active against various fungal strains of *Candida* including *Candida albicans*. The result showed that the methanolic extract from leaves of plant exhibited significant antibacterial activity against *V.Cholerae* The study also revealed that the fungal strain of *Candida* spp and Aspergillus *niger* were more sensitive to the plant extract as it also revealed greater zone of inhibition when tested by disc diffusion technique. The effect was quite comparable to standard drug ciprofloxacin and griseofulvin.

D-4

Nephroprotective Activity of Acetone Extract of *Macrotyloma Uniflorum* Seed Extract against Cisplatin Induced Renal Failure

Puranam Sridatha

Raghavendra Institute of Pharmaceutical Education & Research, 1-145, Mylasamudram, Bukkapatnam (Via), Anantapuramu - 515144, Andhra Pradesh, India
puranamdatha@gmail.com

Abstract:

Cancer is the one the life threatening syndrome characterized by uncontrolled proliferation of abnormal cells which have properties like loss of apoptosis, invasion and metastasis The present study was undertaken to evaluate the Nephroprotective activity of *Macrotyloma uniflorum* seeds extract using rat model of Cisplatin induced nephrotoxicity. **Objective** To investigate the Nephroprotective activity of acetone extract of *Macrotyloma uniflorum* seed extract against Cisplatin induced renal failure caused by the cluster of factors like oxidative stress, inflammation, apoptosis and necrosis.

Experimental Methods: Preparation of seed extracts

Powdered black seed samples were defatted using petroleum ether with the ratio of sample to solvent being 1/10 w/v with occasional shaking at room temperature for 24 h. The extract was filtered through Whatman filter paper and air-dried. The residue was extracted again with 70%acetone for 24 h, filtered and re-extracted with an additional quantity of acetone for 3 h. The combined AE were evaporated under reduced pressure using a rotary vacuum evaporator. The extracts AE thus obtained were used for qualitative phytochemical analysis and estimation of antioxidant and total flavonoid content estimation.

Experimental Design and Protocol

A total of 30 Male Wistar rats were randomized into 5 groups with 6 rats in each group.

Group I: Rats served as the Vehicle Control (0.9%saline).

Group II: Rats were treated with Cisplatin (7 mg/kg bw i.p., injection on 3 day) alone.

Group III: Rats were orally administered with Vitamin E 100mg/kg bw for 10 days and injected intraperitonial with cisplatin (7 mg/kg bw on 3 day)

Group IV and V: Rats were orally administered with Macrotyloma uniflorum seeds Extract (MUSE) (250 mg/kg; 500 mg/kg, bw, po, respectively) daily for 10 days and were injected intraperitonially with Cisplatin (7 mg/kg bw on 3 day).Following the last dose of treatment, animals were housed individually in separate metabolic cage to collect the 24h urine. On 11 th under light ether anesthesia collect the blood samples from retrorbital sinus and subjected to centrifugation at 3000rpm serum was for 15 minutes by using cooling remi centrifuge. Separated serum was stored in refrigerator until further usage. Rats are anesthetized with ketamine and sacrificed.Immediatly both kidneys were collected and washed with ice cold buffer and blotting with tissue paper. One kidney was preserved in 10% formalin for Histopathological examination and other kidney was cut in to small pieces and homogenized. Homogenization was performed at 5000 rpm in potassium–phosphate buffer (pH 7.36, 0.1M) under cold conditions and the separated supernatant used for evaluation of oxidative stress and antioxidant activity. For the estimation of reduced glutathione (GSH), 1ml of homogenate of each rat as such was stored separately. All the samples were labeled properly and stored at -20°C for further analysis. Effect of Macrotyloma uniflorum seeds Extract (MUSE) on CP induced nephrotoxicity in serum and urinary parameters: Administration of single injection of CIS (7 mg/kg, i.p.) caused a marked reduction in renal function, as characterized by significant ($P < 0.001$) increase in BUN, Serum creatinine, Serum Urea and a significant ($P < 0.001$) decrease serum albumin levels when compared to Normal group [Table 5]. In addition CIS injection significantly increases urine volume and decrease the creatinine clearance [Table 6]. Thus, these data indicate that a single intraperitoneally injection of 7 mg/kg CIS impairs kidney functions. The treatment with MUSE showed significant decrease in BUN ($P < 0.01$), urea ($P < 0.01$), and creatinine ($P < 0.05$) and a significant increase in albumin ($P < 0.01$) as compared to CIS-treated group and also significantly decreases urine volume and increases the creatinine clearance as compared to CIS-treated group. This indicates that kidney injury was decreased with acetone extract of Macrotyloma uniflorum seeds treatment.

Results and Discussion

The results demonstrate that daily Macrotyloma uniflorum seeds extract treatment markedly ameliorate CIS-

induced kidney damage as shown in microscopic examination and biochemical parameters. CIS is one of the widely used cytotoxic agents in the treatment of several forms of cancers. In spite of its clinical usefulness, there are constraints in using this drug as it causes nephrotoxicity and neurotoxicity. Other less frequent toxic effects like hepatotoxicity, which are generally observed after administration of high doses of CIS, can also alter the clinical situation in patients. It is recognized that oxidative stress acts as an important Pathogenic factor in causing Cisplatin-induced acute kidney injury.

Conclusion

These results indicate that high dose of Macrotyloma uniflorum seeds extract shows more significant renoprotective effect than lower dose of Macrotyloma uniflorum seeds extract. Mechanisms of this renoprotective effect mainly include amelioration of lipid peroxidation induced by CIS as well as activation of defense mechanisms.

D-5

Identification of Light Receptor from Skin

Bhargavi Thangellapally and K.V. Subrahmanyam

B. Pharm Scholar, Samskruti College of Pharmacy, Ghatkesar - 500021, Hyderabad, Andhra Pradesh, India
bhargavithangellapally@gmail.com

Abstract:

Solar UV is the single most common carcinogenic environmental factor to which humans are constantly exposed. Our lab seeks to uncover the molecular mechanisms and signaling events underlying the UV transduction cascade that leads to the macroscopic effects on skin. One of our main goals was to identify the photo sensing protein responsible for reacting to UV radiation. The results of our study will significantly enhance understanding of skin function and may revolutionize the prevention and treatment of skin cancer, pigmentation disorders, and photo aging.There are two types of known non-visual photoreceptors expressed in plants and animals – opsins and crypto chromes. A: We ran our PCR using two different polymerases, PicoMaxx and Taq. We used a touchdown PCR protocol, which incrementally decreases the annealing temperature, thereby increasing the specificity of the amplified bands. B: To increase the yield, we re-amplified the DNA bands in A by running another PCR, using some of the product in A as template for the reaction in B. We hypothesize that human skin utilizes a similar non-visual photoreceptor to react with UV. We designed degenerate primers based on conserved regions of cDNA sequences of mammalian photoreceptors.PCR products are isolated according to size and are cloned into a plasmid vector, TOPO. An analytical digest is run to check for positive inserts into the vector prior to sequencing of the DNA.In order to test the role of the newly identified proteins in UV signal transduction in skin cells, we will PCR the full length cDNA and clone it into a mammalian expression vector. We will then assay the UV response in cells expressing the photoreceptors compared to wild type cells.

Keywords: Human skin, Endocrinology, Hormone synthesis, Hormone receptors, Hormone metabolism, Hormone activity.

D-6

Molecular Testing of Brain Tumor

P. Sai Mohana, G. Jyothi and K.V. Subrahmanyam

Department Of Pharmacology, Samskruti College of Pharmacy, Kondapur, Gatkesar, Hyderabad - 500016, Andhra Pradesh, India
mohanaparavastu@gmail.com

Abstract:

The World Health Organization (WHO) classification of central nervous system (CNS) tumors was revised in 2016 with a basis on the integrated diagnosis of molecular genetics. We herein provide the guidelines for using molecular genetic tests in routine pathological practice for an accurate diagnosis and appropriate management. While astrocytomas and IDH-mutant (secondary) Glioblastomas are characterized by the mutational status of IDH, TP53, and ATRX, oligodendrogliomas have a 1p/19q codeletion and mutations in IDH, CIC, FUBP1, and the Spromoter region of telomerase reverse transcriptase (TERTp). IDH-wildtype (primary) glioblastomas typically lack mutations in IDH, but are characterized by copy number variations of EGFR, PTEN, CDKN2A/B, PDGFRA, and NF1 as well as mutations of TERTp. High-grade pediatric gliomas differ from those of adult gliomas, consisting of mutations in H3F3A, ATRX, and DAXX, but not in IDH genes. In contrast, well-circumscribed low-grade neuroepithelial tumors in children, such as pilocytic astrocytoma, pleomorphic xanthoastrocytoma, and ganglioglioma, often have mutations or activating rearrangements in the BRAF, FGFR1, and MYB genes. Other CNS tumors, such as ependymomas, neuronal and glioneuronal tumors, embryonal tumors, meningothelial, and other mesenchymal tumors have important genetic alterations, many of which are diagnostic, prognostic, and predictive markers and therapeutic targets. Therefore, the neuropathological evaluation of brain tumors is increasingly dependent on molecular genetic tests for proper classification, prediction of biological behavior and patient management. Identifying these gene abnormalities requires

cost-effective and high-throughput testing, such as next-generation sequencing. Overall, this paper reviews the global guidelines and diagnostic algorithms for molecular genetic testing of brain tumors.

Keywords: Brain neoplasms, Molecular biology, Next generation sequencing, Pathological diagnosis.

D-7

Evaluation of *in-vitro* Anthelmintic Activity of Fruit Hydro-ethanolic Extract of *Sapindus trifoliatus*

Shantirmaya Mohapatra, Debasish Pradhan and Subhrajit Biswal

UDPS, Utkal University, Bhubaneswar - 751004, Odisha, India
pupunu9439@gmail.com

Abstract:

Helminthiasis is a critical serious problem in the tropical regions including the Asian countries. Variety of several clinical complications arises due to this infection include dysentery, diarrhea, nausea-vomiting, loss of appetite and weight, acidity and sometimes anemia. A wide variety of anthelmintic is used for the treatment of helminthiasis in animals. Moreover, synthetic drugs used in helminthiasis treatment have some potential side effects like alopecia and liver dysfunction. These drugs are also contraindicated in pregnancy and liver disease. So, there is a need for development of anthelmintic drugs from natural origin with a very low side effects, cost effective & toxicity as well. Keeping in mind such astounding properties exhibited by the plant *Sapindus trifoliatus* (Fam-Sapindacea), the present study is intended to investigate anthelmintic activity of hydro-ethanolic fruit extract of *Sapindus trifoliates* in Indian earthworm. For the 100 mg/ml concentration, albendazole showed the least death time of (73.83 ± 4.167) min, and fruit extracts of *Sapindus trifoliatus* plant showed a death time of (76.2 ± 1.75) min. In the anthelmintic study it was found that the *Sapindus trifoliatus* fruits extract paralyzed and killed the Indian earth worm *(Pheretima posthuma)* in dose dependent manner. So it is concluded that the *Sapindus trifoliatus* fruits extract have potential anthelmintic activity.

Keywords: Albendazole, *Sapindus trifoliatus*, **Hydro-ethanolic extract, Indian earth worm (** *Pheretima posthuma*).

D-8

Evaluation of Anticonvulsant Activity of Poly Herbal Formulation of Leaves of *Basella Alba* and Flower of *Rosa damascene* in Rats

Swathi Baswa, Koteshwara Rao Rayala and Vamshi Vishnu Yamsani

Department of Pharmacology, Aurobindo College of Pharmaceutical Sciences, Gangadevipally, Warangal - 506330, Telangana State, India
basvaswathi@gmail.com

Abstract:

Traditional therapeutic herbal strategy exploits the combining of several medicinal herbs to achieve extra therapeutic effectiveness. Even though the active phytochemical constituents of individual plants have been well established, they usually present in minute amount and always, they are insufficient to achieve the desirable therapeutic effects. In the present study, a poly herbal extract comprising of flower of *Rosa damascene (Rosaceae)*, a medicinal plant used in many neurological disorders. *Basella alba* leaves have anti fungal, anti convulsant and analgesic activity. The aim of present study was to develop a poly herbal formulation for epilepsy, leaves of *Basella alba* (Basellaceae) along with flower petals of *Rosa damascene* evaluated for its protective effect against maximal electro shock and pentylene tetrazole induced convulsions. A daily dose of 250 and 500 mg/kg of the poly herbal extract was administered to the animals for 15 days. On the 15th day, seizures were induced to all the groups of animals using electro convulsometer. A 60 Hz alternating current of 150 milliamps intensity elicited maximal electro shock (MES) seizures for 0.2 second. The duration of various phases of epileptic attacks were recorded and compared with the control animals. A significant reduction ($P < 0.05$) in the time required for the recovery (righting reflex) was observed in this study, which proves that PHE was providing a beneficial effect in controlling MES induced seizures. The PHE extract showed comparable activity with that of diazepam in PTZ test which may suggests the involvement of GABAergic pathway.

Keywords: Maximal electro shock, *Rosa damascenes, Basella alba,* **Poly herbal extract.**

D-9

Evaluation of Anti-Inflammatory Activity of Methanolic Leaf Extracts of *Achyranthes aspera* and *Pandanus fascicularis in* Rats

Mahendar Surakanti, Swathi Baswa and Vamshi Vishnu Yamsani

Department of Pharmacology, Aurobindo College of Pharmaceutical Sciences, Gangadevipally, Warangal - 506330, Telangana, India
basvaswathi@gmail.com

Abstract:

Achyranthes aspera Linn. (Amaranthaceae) used as purgative, diuretic, antimalarial, antihyperlipidemic, estrogenic, antileprotic, antispasmodic, cardiotonic, antibacterial, and antiviral agents in traditional systems of medicine. It is also used as antiasthmatic antitussive and in the treatment of snakebite, hydrophobia, urinary calculi, rabies, influenza, otorrhoea, piles, bronchitis, diarrhea, renal dropsies, gonorrhea, and abdominal pain. The leaves of *Pandanus fascicularis (*Pandanaceae*)* are thought to be useful in leprosy, smallpox, scabies and diseases of the heart and brain. The present study is the anti-inflammatory activity of the polyherbal formulation of methanolic leaf extract of *Achyranthes aspera and* methanolic leaf extract of *Pandanus fascicularis* in rats by using carrageenan-induced rat paw edema method at a dose of 250 mg/kg and 500 mg/kg administered orally. The formulation in doses of 250 mg/kg and 500 mg/kg showed 54.78% and 57.10% inhibition of carrageenan induced paw edema, respectively at the end of 6th hr. The formulation showed a significant anti-inflammatory activity in both the experimental models (carrageenan and formaldehyde induced paw edema methods) and the activity is comparable to that of the standard drug, Diclofenac sodium.

Keywords: Polyherbal, Anti-inflammatory, *Achyranthes aspera* and *Pandanus fascicularis*.

D-10

Bipolar Disorder

Fouzia Afreen, G. Jyothi and KV Subramanyam

B.Pharm Scholar, Samskruti College of Pharmacy, Ghatkesar, Hyderabad - 500040, Andhra Pradesh, India
affufouzia9@gmail.com

Abstract:

Bipolar disorder is a chronic illness, which may require life-long treatment. Patients will spend 3-5 times more days in the depressed episode then in the manic phase. Due to this variability in episodes, polypharmacy is used quite frequently in practice, though the evidence to do this remains quite limited. Many positive and negative outcomes can occur from this practice. ASHP as an organization strives to increase the extent to which pharmacists help individual hospital inpatients achieve the best use of medication. With the increasing use of polypharmacy to treat bipolar disorder, pharmacists are essential for managing the acquisition of medication histories, monitoring and managing medication use in collaboration with other members of the health-care team, and providing medications information for hospital inpatients treated with these complex and high-risk medication regimens.

Keywords: Chronic illness, Manic phase, Polypharmacy, ASHP, Medication history, Health care, Medication regimens.

D-11

Discovery of Novel Insulin Sensitizers

Likita Ganesh, Sandhya Rani and G. Jyothi

B.Pharm Scholar, Samskruti College of Pharmacy, Ghatkesar, Hyderabad - 500062, Andhra Pradesh, India
likitaganesh4@gmail.com

Abstract:

Insulin resistance is the undisputed root cause of type 2 diabetes mellitus (T2DM). There is currently an unmet demand for safe and effective insulin sensitizers, owing to the restricted prescription or removal from market of certain approved insulin sensitizers, such as thiazolidinediones (TZDs), because of safety concerns. Effective insulin sensitizers without TZD-like side effects will therefore be invaluable to diabetic patients. The specific focus on peroxisome proliferator-activated receptor γ-(PPARγ-) based agents in the past decades may have impeded the search for novel and safer insulin sensitizers. This review discusses possible directions and promising strategies for future research and development of novel insulin sensitizers and describes the potential targets of these agents. Direct PPARγ agonists, selective PPARγ modulators (sPPARγMs), PPARγ-sparing compounds (including ligands of the mitochondrial target of TZDs), agents that target the downstream effectors of PPARγ, along with agents, such as heat shock protein (HSP) inducers, 5→adenosine monophosphate-activated protein kinase (AMPK) activators, 11β-hydroxysteroid dehydrogenase type 1 (11β-HSD1) selective inhibitors, biguanides, and chloroquines, which may be safer than traditional TZDs, have been described. This minireview thus aims to provide fresh perspectives for the development of a new generation of safe insulin sensitizers.

Keywords: Diabetes mellitus, Thiazolidinediones, Biguanides, AMPK, Insulin Sensitizers.

D-12

Evaluation of Wound Healing Potential of

Bauhinia vahlii Leaf Extract in Infected Rats

Sibasundar Rout, Biswabhusan Rath and Abhisek Pal

School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar - 751003, Orissa, India
sibasundarrout9@gmail.com

Abstract:

In generally, wounds are particularly prone to infection, especially by bacteria, and also provide an entry point for systemic infections. The bacterial infected wounds heal less rapidly and also often result systemic complications. Thorough literature survey reveals that there is no scientific report on wound healing activity of *Bauhinia vahlii* (MEBV).Two models were performed to evaluate the wound healing activity i.e. infected excision and infected incision models. The wound area was infected with a loop full of inoculums of mixed microorganisms comprising of staphylococcus aureus and E.coli. In incision model the parameter which is carried out was breaking strength of the wounded skin. In excision model the percentage wound contraction and period of epithelialization were established. Reference standard drug was povidone iodine ointments for comparison with other groups. From the observation in both two models, methanolic extract produced significant wound healing activity in order of 5% w/w > 10% w/w> 20% w/w in terms of breaking strength in incision model and percentage wound contraction, The results indicate that the methanolic extracts of *Bauhinia vahlii* (MEBV) at 20% w/w produced significant wound healing activity.

Keywords: *Bauhinia vahlii, infected wound, Excision.*

D-13

Evaluation of *In Vitro* Anti-cancer Activity of *Caesalpinia bonducella* Leaves

Raghuveer Rodda and Sanjeeva Kumar Avvari

[1]Department of Pharmacology, CMR College of Pharmacy, Kandlakoya (V), Medchal, Hyderabad - 501401, Telangana, India
rodda.raguveer@gmail.com

Abstract:

Present study was aimed to evaluate the anti-cancer activity of *Caesalpinia bonducella* leavesin selected cell lines *in vitro*. *Caesalpinia bonducella* leaves were collected from local cultivating areas near to Adoni, shade dried, mechanically made into powder. The powder was subjected to extraction by cold maceration method using water and alcohol mixture as solvent at a ratio of 3:2. The hydro alcoholic extract of *Caesalpinia bonducella* leaves was subjected to preliminary phytochemical screening using standard methods. *In vitro* anticancer activity of hydro-alcoholic extract of *Caesalpinia bonducella* leaves was performed on LNCap-FGC – Human carcinoma prostate, A549 – Human lung carcinoma and HEK-293 – Human kidney cell lines by MTT assay method at a concentration of 50, 100 and 200 microgram per ml using MTT assay. The percentage yield of *Caesalpinia bonducella* leaves using water: ethanol as solvent (3:2) was found to be 3.58 % w/w.Preliminary phytochemical screening of hydro alcoholic extract of *Caesalpinia bonducella* leaves revealed the presence of Proteins, tannins, alkaloids and flavonoids. In anti-cancer activity, the plant extract showed IC_{50} value of 169.06, 139.86 and 145.51 µg/ml for tested cell lines that is LNCap-FGC – Human carcinoma prostate, A549 – Human lung carcinoma and HEK-293 – Human kidney respectively.

Keywords: *Caesalpinia bonducella*, **Folklore, Phytochemicals, MTT assay, IC_{50}.**

D-14

Protective Effect of Natural Flavonoid against Manganese-Induced Manganism in Rats

Ankita Jyotishi, Khusbu Kumari and Abhisek Pal

School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar - 751003, Orissa, India
jyotishiankita07@gmail.com

Abstract:

Manganese (Mn) is a metal required by biological systems. However, environmental or occupational exposure to high levels of Mn can produce a neurological disorder called manganism. The neuroprotective actions of dietary flavonoids involve a number of effects within the brain, including a potential to protect neurons against injury induced by neurotoxins. The present study was designed to investigate the effects of long term low-dose exposure to Mn in drinking water on behavioral and biochemical parameters in rats and to determine the effectiveness of flavonoid in attenuating the effects of Mn. After 30 days of continuous treatment with MnCl2 (10 mg/kg), rats exhibited clear signs of neurobehavioral toxicity depicted in terms of catalepsy score using standard bar test, activity score using actophotometer, manganese tissue analysis, neurohistopathology, neuroimaging and biochemical analysis. The administration of flavonoid (10 mg/kg, PO) improved the motor performance of Mn-treated rats, decreasing the tissue concentration and reversing the histopathological & neuroimaging profile and also decreases the ROS and increasing the antioxidant levels, indicating that

the compound could be reverting Mn induced neurotoxicity. Irrespective of the applied dose, the addition of flavonoid in forage decreased tissue Mn concentrations and increased Mn excretion rate in the stool by 20 % to 35 %. All neurobehavioral aberrations were also improved. Our findings show that oral exposure to Mn may cause neurobehavioral abnormalities in adult rats that could be efficiently alleviated by concomitant supplementation of flavonoid in animal feed.

Keywords: Manganese, neurobehavioral aberration, flavonoid, antioxidant, catalepsy score, activity score.

D-15

Evaluation of Antidepressant Activity oF *Bhringaraj Ghrita* Using Animal Models

Khusbu Kumari, Ankita Jyotishi, Abhisek Pal and Sangeeta Mohanty

School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar - 751003, Orissa, India
raikhushbu1812@gmail.com

Abstract:

Eclipta alba (Asteraceae) is a traditional medicinal plant known as *Bhringaraj*. This plant has been used for the treatment of a variety of diseases. The leaves of *Eclipta alba* showed antihyperglycemic activity. The roots of *Eclipta alba* were found effective in wound healing. This study was undertaken to evaluate the possible antidepressant effect of *Eclipta alba* formulation (Bhringaraj ghrita: BG) using Tail suspension test (TST). 36 albino mice of either sex weighing between 20-25gm were randomly selected divided into 6 equal groups. Group-I (control) received polyethyleneglycol (1ml/100gm). Group-II, III & IV received BG in doses of 100,200,400 mg/kg orally (P.O.) respectively. Group V & VI (positive control) received Fluoxetine & Imipramine at doses of 20mg/kg & 15mg/kg p.o respectively. Drug treatment was given for seven & fourteen successive days. 60 minutes after last dose of drug or standard the immobility period was recorded. BG produced significant antidepressant like effect at dose of 200&400 mg/kg administered for 7 & 14 consecutive days as indicated by reduction in immobility times of mice in TST($P<0.05$). The efficacy of BG at 20 mg/kg was found to be comparable to that of Fluoxetine & Imipramine at doses of 20mg/kg & 15mg/kg. The results of the present study indicate that BG possesses significant antidepressant activity compared to that of both Fluoxetine & Imipramine.

Keywords: Eclipta alba, Tail suspension test, Antidepressants, Immobolity time.

D-16

Neuroprotective Effect of Naringin in Neurotoxicity Induced Rats

Biswabhusan Rath, Sibasundar Rout and Abhisek Pal

School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar - 751003, Orissa, India
biwsabhusanrath14@gmail.com

Abstract:

Currently, about 2% of worldwide population over the age of 60 is affected by this neurodegenerative disease. Parkinson's disease is the second most neurodegenerative disease after Alzheimer's disease and first with movement disorders. Naringin is a potential compound having both anti-inflammatory and anti-oxidant properties with low gastric and cardiac side effect. Different COX-2 inhibitors like nimesulide, refecoxib and celecoxib have been proved to have their neuroprotective action in different animal models of neurodegenerative disorders but they are burdened with high toxicity. In this study, the neuroprotective effect of Naringin was studied in animal model of neurodegeneration. In the haloperidol induced catalepsy model the increased cataleptic score was significantly reduced with both the standard drug Levodopa and the test drug Naringin. The increased frequencies of vacuous chewing movements on administration of Reserpine were reversed with the treatment of Naringin. The reduced actophotometer activity score due to Reserpine was significantly reversed by Naringin. The decreased level of lipid per-oxidation and increased glutathione concentration by the administration of Naringin which reversed the toxicity of MPTP. Naringin is a potential compound having both anti-inflammatory and anti-oxidant properties. These effects of enlights the pharmacodynamic pathway of neuroprotective properties of Naringin in animal model study.

Keywords: catalepsy, Naringin, Cyclooxygenases, neuroprotection.

D-17

Ultraviolet Radiation Induced Skin Photo Damage and Role of Plant Based Products as Therapeutic Alternative

Raghu Rai Sharma, Aakash Deep, Dhirender Kaushik and Sheikh Tasduq Abdullah

Department of Pharmaceutical Sciences, Ch. Bansi Lal University, Bhiwani - 127021,

Haryana, India
raghuraisharma@gmail.com

Abstract:

Skin is the largest and the most visible human organ which is constantly exposed to a number of environmental factors such as harmful radiation, toxic chemicals and microorganisms. Ultraviolet radiation in solar light is one of the major environmental toxicant for skin. UVB (290-320nm) causes deleterious effect on skin. Acute UVB exposure causes photo damage, whereas chronic exposure leads to photo aging and photo carcinogenesis. UVB leads to erythema, edema, elevated melanogenesis, oxidative stress, inflammation, immunosuppression, photo aging and further development of cutaneous malignancies. It is also responsible for both the melanoma as well as non-melanoma skin cancers. The defense mechanism of skin becomes compromised in protecting itself from photo damage. Many plant based products with active ingredients such as alkaloids, flavanoids, isoflavones, proanthocyanidins, phenolics, essential oils possessing anti-oxidant and anti-inflammatory properties show protective action against UVB induced skin photo damage. The pharmacological aspects of these plant based products in term of safety and efficacy need to be validated as per the regulatory guidelines which are internationally accepted. Therefore, the main aim of this study is to explore such plant based products with novel therapeutic potential for the reversal of UVB induced skin photo damage, which can lead to further pre-clinical and clinical investigations.

Keywords: Skin, ultraviolet radiation, oxidative stress, photo protection, plant based products.

D-18

Evaluation of Antidiabetic Activity of Hydroalcoholic Extracts of *Euphorbia Hirta* In Vivo and In Vitro

Kiranprabha Sahoo and Debasish Pradhan

University Department of Pharmaceutical Science, Utkal University, Bhubaneshwar - 751004, Odisha, India
kiranprabhasahoo@gmail.com

Abstract:

This research study was aimed to investigate antidiabetic activity of aqueous extract of *Euphorbia hirta* (Fam: Euphorbiaceae) and characterize its possible phytoconstituents responsible for it. Type 2 diabetes was induced in rats by streptozotocin-nicotinamide (65 mg/kg–110 mg/kg; i.p.) administration. Treatment of HAEEH using rat oral needle at 100 and 200 mg/kg doses significantly decreased blood glucose and glycosylated haemoglobin levels in diabetic rats than diabetic control rats. HAEEH-treated diabetic rats body weight, total protein, insulin, and haemoglobin levels were increased significantly than diabetic control rats. A significant reduction of total cholesterol and triglycerides and increase in high-density lipoprotein levels were observed in type 2 diabetic rats after HAEEH administration. Presence of biomarkers gallic acid, ellagic acid, catechin, and epicatechin in HAEEH was confirmed in HPLC analysis. HAEEH and gallic acid showed significant enhancement of glucose uptake action in presence of insulin in muscle cells than vehicle control. Also HAEEH inhibited pancreatic α-amylase and α-glucosidase enzymes. In conclusion, the above actions might be responsible for the antidiabetic activity of HAEEH due to presence of gallic acid and other biomarkers.

Keywords: ***Euphorbia hirta*, streptozotocin-nicotinamide, gallic acid.**

D-19

Preliminary Phytochemical Screening and Pharmacological Investigation of *Canavalia* Species for its Hypoglycemic and Antioxidant Potential

K. Anitha, S. Mohana Lakshmi and S.V. Satyanarayana

Department of Pharmacology, Sree Vidyanikethan College of Pharmacy, A. Rangampet, Tirupati - 517102, Chittoor, Andhra Pradesh, India
kuttiappananitha@gmail.com

Abstract:

Canavalia species have been widely used for diabetes in folkloric medicine. In this research, study claims an evidence for both hypoglycemic and antioxidant properties of *Canavalia* species. The total triterpenoids (TT) and total flavonoid (TF) fractions of seeds of *Canavalia* species showed significant hypoglycemic effect in High fat diet- Strepotozotocin induced diabetic rats and explored the mechanism of its hypoglycemic and antioxidant activities. Variable doses of fractionated ethanolic seed extracts of *Canavalia* species (ESCS) have been studied by quantifying the TT and TF of both the species. Fractions of *Canavalia ensiformis Canavalia gladiata* were subjected to phytochemical screening by using the standard procedures. Glibenclamide (5mg/kg) was used as standard drug. Evaluation parameters of hypoglycemic activity such as blood glucose tolerance test(OGTT), glycated hemoglobin, lipid

profile parameters like Total cholesterol(TC), triglycerides(TG), VLDL, LDL et al., in rat serum. The antioxidant indexes like α-glucosidase, superoxidase dismutase, lipid peroxidation was also evaluated. Histopathological effect of TTE, TFE, TTG, and TFG in High fat diet Streptozotocin induced rat has been studied to support and enlighten the hypoglycemic and antioxidant effect of *Canavalia* species. Diabetic induced rats when treated with these four fractions of TTE, TFE, TTG, TFG decreased the blood glucose levels and serum levels of TC, TG, LDL has also lowered in treated rats than in diabetic rats, meanwhile the extracts showed the decreased levels of MDA, No level and increased levels of SOD, GSH values. All four fractions of *Canavalia* species shown potential effects on β cells of pancreas in treated rats. The results obtained from this study showed significant hypoglycemic and antioxidant activity due to the presence of triterpenoid and flavonoids of two species of *Canavalia*. These findings assist through stimulating insulin secretion which was mentioned in folkloric medicine.

Keywords: Hypoglycemic, Antioxidant, High fat diet-Streptozotocin, Glibenclamide, *Canavalia ensiformis, Canavalia gladiate.*

D-20

Anti-Anemic Activity of Hydro-Alcoholic Extract of *Persea Americana* in Phenylhydrazine Induced Anemic Rats

Deepanshu Gupta, Ankur Joshi, Sapna Malviya and Anil Kharia

Modern institute of Pharmaceutical Sciences, Indore - 453111, Madhya Pradesh, India
guptadeepanshu252@gmail.com

Abstract:

The aim of the current research is to test the anti-anemic activity in hydro-alcoholic extract of fruit & seeds of *Persea americana* in phenylhydrazine induced anemic rats. Phenylhydrazine (40mg/kg) was administered intraperitoneally in rats for two days to induce anemia. The animals were divided into 5 groups containing 6 animals each. 1st group was served as normal control group, 2nd group was served as anemic control, 3rd group was served as standard reference control administered with Vit. B_{12}complex, 4th group was served as test control-I administered with 100mg/kg of hydro-alcoholic extract of fruit of *Persea americana* and 5th group was served as test control-II administered with 100mg/kg of hydro-alcoholic extract of seeds of *Persea americana*. All the test drugs were given for 13 days daily through oral route. On 14th day blood was withdrawn, through tail puncture and subjected to the estimation of RBC, Hb, and percentage haematocrit. Both the hydro-alcoholic fruit & seeds extract of *Persea americana* and Vit. B_{12} significantly increase the HB, RBC & percentage Haematocrit level which conclude that *Persea americana* fruit & seed exhibits' the anti-anemic activity.

Keywords: Anemia, Anti-Anemic activity, Hydro-alcoholic extract, *Persea americana,* **Vit. B_{12}.**

D-21

Adverse Drug Reactions and Kinetics of Cisplatin Excretion in Urine of Patients Undergoing Cisplatin Chemotherapy and Radiotherapy for Head and Neck Cancer: A Prospective Study

T.Lakshmi Kavya and G Sadasiva Rao

Department of Pharmacy Practice, Hindu college of Pharmacy, Guntur - 522002, Andhra Pradesh, India
tirumalasetty.kavya6@gmail.com

Abstract:

Cisplatin is a high-potency anticancer agent; however, it causes significant adverse drug reactions (ADRs). This study was designed to investigate the relationship between ADRs and kinetics of cisplatin excretion in the urine of patients undergoing high-dose cisplatin chemotherapy and radiotherapy for head and neck cancer and evaluated by high-performance liquid chromatography over three time periods: 0–12, 12–24, and 24–48 h after the administration of cisplatin. Cisplatin chemotherapy is given in fisrtline treatment. Spearman Correlation test and regression analysis were performed to assess the relationship between ADRs and cisplatin excretion in the urine. In total, 59 patients with a mean age of 55.6 ± 9.4 years were analysed; most patients were male (86.4%), white (79.7%), and with pharyngeal tumours in advanced stages (66.1%). The most frequently observed ADRs were anaemia (81.4%), lymphopenia (78%) and nausea (64.4%); mostly grades 1 and 2 of toxicity. The mean cisplatin excretion was 70.3 ± 64.4, 7.3 ± 6.3, and 5 ± 4 µg/mg creatinine at 0–12, 12–24, and 24–48 h, respectively. The period over which the highest cisplatin excretion observed was 0–12 h after chemotherapy, and cisplatin excretion could not predict toxicity.

Keywords: Adverse drug reaction, Excretion, Urine, Cisplatin, Chemotherapy, Head and neck cancer.

D-22

Efeect of *Trigonella Foenum Graecum* (*Fenugreek*

Seed Extract) on Experimental Induced Metabolic Syndrome in Albino Rats

P.Manasa, Ch. Naga Kavitha, M. Sushmitha and K. Dilip Raja

Department of Pharmacology, GITAM Institute of Pharmacy, GITAM University, Rushikonda, Visakhapatnam - 530045, Andhra Pradesh, India
pathivada92@gmail.com

Abstract:

Mostly Obesity is a natural consequence of over nutrition and sedentary lifestyle and persistent obesity dys-regulates metabolic processes, action of insulin on glucose-lipid-free fatty acids, action of glucocorticoids etc. Thus begins a cluster of conditions such as severe obesity, dysglycemia, dyslipidemia, hypertension, hyperglycemia with increased risk of myocardial infarction and stroke known as the metabolic syndrome. Many of the plant species and their constituents are used in Indian ayurvedic medicine for the treatment of myocardial infarction and obesity recently. *Fenugreek* is one of such plants known for its wide variety of traditional uses and pharmacological activities and therefore it was thought to investigate the effect of *Trigonella Foenum Graecum (Fenugreek)* seed extract on experimental induced metabolic syndrome in albino rats. Male Wistar albino rats (200±20 g) were divided into eight groups (n=6). Group-1 (normal control) was fed with a standard diet, remaining animals received a standard diet supplemented with Monosodium glutamate (MSG) (100 g/kg, *p.o.*), to develop obesity. Group 2 served as obesity control while group 3 served as positive control for metabolic syndrome of obesity, hyperglycaemia and myocardial infarction. Methanolic extract of *Fenugreek* seeds (*METFG*) was administered at doses of 200 mg/kg and 400 mg/kg orally. High fiber diet (20%) was used as a reference. Myocardial infarction (MI) was induced by the administration of Doxorubicin (DOX) (15 mg/kg for 2 weeks, *i.p.*ly). After 45 days of treatment, serum was analyzed for concentrations of glucose, triglycerides, total cholesterol, HDL cholesterol, AST, ALT, G6PD, serum creatinine kinase, total proteins and GGT. Heart tissue was isolated for histopathological changes. Prior administration of fenugreek (200 mg/kg and 400 mg/kg) and 20% of high fiber diet significantly reverted the metabolic changes induced by MSG and DOX. and fenugreek extract also significantly restored the levels of the diagnostic market enzymes suggesting its protective effect against the myocardial injury induced by DOX. The results show that *Fenugreek* extract has potential protective effect in the metabolic syndrome associated with obesity along with hyperglycemia and myocardial infarction.

Keywords: *Fenugreek*, **Monosodium Glutamate, Obesity, Doxorubicin, Myocardial infarction.**

D-23

Combinatorial Treatment of Lycopene, Quercetin and Poloxamer 188 Ameliorates 3 Nitro Propionic Acid Induced Huntington Disease in Rat

Arti Akash Bhimanwar and Dilpesh Jain

Genba Sopanrao Moze College of Pharmacy, Wagholi, Pune - 412102, India
bhimanwar.arti@gmail.com

Abstract:

In present study combinatorial effect of Lycopene, quercetin and Poloxamer 188 was investigated in 3-nitropropionic acid induced rat model of Huntington's disease. Huntington like symptoms wasintroduced in male Wistar rat by administration of 3 nitro propionic acid (NP)(10 mg/kg) *i.p.* for 14 days. Animals were randomly divided in six groups (n=6) as normal control, Huntington control, lycopene treated (25mg/kg), Quercetin treated (50mg/kg), combination with and without Poloxamer 188 (80mg/kg) with concomitant administration of NP. Body weight, brain weight were measured andmemorywere investigated and confirmed by Acetylcholinestrase activity. In addition lactate dehydrogenase and succinate dehydrogenase activity were also investigated. Treatment of NP significantly induced HD like symptoms as compare to control rats. Rat treated with Lycopene, Quercetin and combination showed significant improvement in memory observed in NORT.Acetylcholinestrase activity also found to be decrease in treatment group as compare to HD rats. Moreoverwe notedsignificant increase in succinate dehydrogenase activity and decrease lactate dehydrogenase activity. In treated group overall high significant difference observed in combination group as compared to single drug treatment. In conclusion present study suggest that combinatorial treatment of Lycopene, Quercetin and Poloxamer 188 is more beneficial in Huntington disease than single drug therapy.

D-24

Anti-Psoriatic Activity of Madhuca Longifolia on Experimental Animal

Madhura Panchwadkar, Komal Umbarkar and Abhijeet Kulkarni

Dr. D. Y. Patil Institute of Pharmaceutical Sciences & Research, Pimpri Pune - 411018, Maharashtra, India
madhurapanchwadkar27@gmail.com

Abstract:

Psoriasis is chronic inflammatory skin disorders clinically characterised by erythematous, sharply demarcated papules and rounded plaques covered by silvery micaceous scale. In this study 2.5% and 5% gel of *Madhuca Longifolia* was prepared and evaluated for antipsoriatic activity. Perry's mice tail model, the parakeratosis is hallmark for the psoriasis mice tail having the parakeratotic condition; the induction of orthokeratosis in mice tail indicates the drug activity against psoriasis. The animals were divided into 5 group (each group n=5); 1st was control, 2nd : received standard tazarotene gel, 3rd : received gel base, 4th : test 1- 2.5% gel, 5th: test 2- 5% gel.In this model, orthokeratosis % is calculated by applying ML gel (2.5% and 5%) 5 times in a week for two weeks and the tail samples evaluated with formula for orthokeratosis; DA= (meanorthokeratosis of treated group - mean orthokeratosis of control group × 100)/ (100-mean orthokeratosis of control group).Perry's mice tail model produced significant orthokeratosis with respect to control was observed in groups treated with tazarotene and ML gel 2.5% and 5%. The maximum anti proliferative activity was observed with 5% ML gel.The result obtained in the present study suggests that the gel may prove to be potential therapeutic drug for treating psoriasis.

Keywords: *Madhuca Longifolia,* **antipsoriatic, orthokeratosis, tazarotene.**

D-25

Attitudes and Perceived Barriers among Under Graduate Pharmacy Students towards Master Degree: A Cross-Sectional Study in ISF College of Pharmacy

Pallavi Duggal and Anoop Kumar

Department of Pharmacology, Indo-Soviet Friendship Pharmacy College (ISFCP), Moga - 142001, Punjab, India
pallaviduggal03@gmail.com

Abstract:

In India, the number of Master degree students in Pharmacy has declined significantly from last five years. Thus, this study was undertaken to investigate attitudes and perceived barriers towards participation in Master degree course among under graduate pharmacy students in ISF college of Pharmacy, Moga. A questionnaire based survey was conducted in ISF college of Pharmacy, Moga, Punjab, covering all undergraduate students to assess their attitudes and perceived barriers towards admission in Master degree course. There were 10 different parameters/data points for which the data was collected from 120 students in ISF College of Pharmacy, Moga, Punjab. Descriptive statistics were used for analysis of data. The majority of students showed negative attitudes towards higher education. Several barriers have been addressed such as lack of intersect, financial problem, lack of good opportunity after Master degree, complexicity of research etc.

Keywords: Under Graduate Students; Post Graduate Students; Attitude; Barrier.

D-26

Evaluation of Knowledge, Attitude and Perception of Medical Students toward Antibiotic Resistance and Use

Raj P, Singh P and Nathiya D

Dept. of Pharmacy Practice, NIMS Institute of Pharmacy, NIMS University, Jaipur - 201308, Rajasthan, India
mateshwari.raj@gmail.com

Absttact:

Introduction: Education of medical students has been identified by the World Health Organization as an important aspect of antibiotic resistance containment. Survey from developed countries consistently reveal that medical students should recognize the importance of antibiotic prescribing knowledge, but feel inadequately prepared and require more education on how to make antibiotic choices. **Objective:** The primary objective of this study was to evaluate the knowledge, attitude and perception of medical students towards antibiotic resistance in National Institute of Medical Sciences (NIMS) Hospital, Jaipur (Rajasthan), a tertiary care teaching hospital in India. **Material and method:** This was a cross sectional study involving medical students of NIMS Hospital. The questionnaire was formulated into 5 components: demographic details, knowledge of antibiotic use, attitude towards antibiotic use and resistance, self-antibiotic usages, and possible causes of antibiotic resistance. **Result:** The sample size comprised of 144 students. Response rate was 97.22%. (n=121) 84.02% students were aware that antibiotic resistance is an important and serious health issue facing the world, (n=118) 81.94% students agree that inappropriate antibiotic use may increase the emergence of antibiotic resistance, (n=105) 72.91% students think that bacteria are germs that require common cold and flu, so require antibiotic treatment, while only (n=8)5.55% students were aware that in cold you should take antibiotic to prevent more serious illness, and (n=64) 44.4% students skipping one to two dose that do not contribute in the development of antibiotic resistance. Only (n=87)60.41% students were talking that you

should consult doctor before starting an antibiotics. While (n=118)81.94% students think that inappropriate antibiotic use give additional burden of cost on the patients. **Conclusion:** This study demonstrated that knowledge and attitude towards Antibiotic resistance is good among medical students. However, further educational interventions are necessary to improve attitude toward antibiotics.

Keywords: antibiotic resistance, Education, Medical students.

D-27

Skeletal Muscle Relaxant, Antipsychotic and Anxiolytic Activity of Methanolic Extract of Coldenia procumbens Leaves

D. Swetha and Ch. Malathi Suvarna

Department of Pharmacology, Gland Institute of Pharmaceutical Sciences, Kothapet, Medak District - 500072, Telangana, India
suvarnasarma31@gmail.com

Abstract:

In the present study we aim to screen the skeletal muscle relaxant, anxiolytic and antipsychotic activity of Methanolic extract of *Coldenia procumbens* leaves in male wistar albino mice. Plants have a molecular nature similar to that of human beings which is a cause for their increased compatibility when compared to chemical and synthetic agents. Leaves were extracted using maceration, the solvent is allowed to evaporate from the extract in a desiccator and the percentage yield was found to be 87%. Phytochemical screening was conducted and it is observed that alkaloids, flavonoids, steroids, terpinoids, amino acids, phenols, glycosides are present in the abstract. 24 male wistar albino mice about 3 week old were taken and divided into 4 groups of 6 animals Blank, Standard, Test –I and Test-II. Activities were studied on respective days after administration of extract and standard for 7 days. The extract showed considerable skeletal muscle relaxant activity in mice studied with Rota rod apparatus this has been proved by decreased fall off time. Antipsychotic activity was studied using actophotometer and considerable decrease in the activity of mice is observed in the test-II group.

Keywords: Coldenia procumbens, antipsychotic activity, anxiolytic activity, skeletal muscle relaxant activity.

D-28

Investigations of Anti-diabetic Properties of Flowers of Hydroalcoholic Extracts of *B. Monosperma* in Normal and Alloxan-induced Diabetic Rats

Rashmi Tirkey and Debasish Pradhan

University Department of Pharmaceutical Sciences, Utlal University, Bhubaneswar - 751004, Odisha, India
rashmitirkey30@gmail.com

Abstracts:

The hypoglycemic and antihyperglycemic effects of *Butea Monosperma* (Fam-Fabacea) were investigated in normal and Alloxan-induced diabetic rats.For tests of acute and subacute hypoglycemic effects,*B.Monosperma*(5 and 15ml/kg b.w)was administered by oral gavage to normal Sprague-Dawley rats and measurements of fasting glucose levels and oral glucose tolerance tests were performed.Glimepiride was used as reference drug at a single dose of (50 mg/kg b.w).To test anti-hyperglycemic activity,the flower extracts of *B.Monosperma* was administered to Alloxan-induced diabetic rats by oral gavage at single dose of 15ml/kg b.w per day for 7 consecutive days.Oral administration of extracts of *B.Monosperma* at either dosed level of 5 or 15 ml/kg b.w showed no remarkable acute hypoglycemic effect in normal rats.The two dosed levels caused a relatively small reduction,only 18% and 12%(5 and 15ml/kg b.w,respectively) decrease in glucose levels at 2 h after glucose loading in normal rats.Howevr, at 3 h after glucose loading, blood glucose levels in extracts of *B.Monosperma* dosed rats were decresed to the corresponding blood glucose level in Glimepiride-dosed rats.Although showing weak hypoglycemic potential compared to that og Glimepiride, oral administration of extracts of *B.Monosperma* (15ml/kg b.w)for a short period (8 days)resulted in a slight reduction in the blood glucose levels that has elevated in Alloxan-induced diabetic rats.In conclusion,these results suggest that the flower extracts may possess antihyperglycemic potential in diabetes.

Keywords: *Butea Monosperma*, **anti-diabetic, Endoplasmic Reticulum stress, hypoglycemic effect, Alloxan.**

D-29

Study on Drug Utilization Evaluation of Corticosteroid in General Medicine Ward in Tertiary Care Teaching Hospital

Suman S, Singh P and Nathiya D

Department of Pharmacy Practice, NIMS Institute of Pharmacy,

NIMS University, Jaipur - 303121, Rajasthan, India
supriyasingh3011@gmail.com

Abstract:

Corticosteroids are of great value in treating a wide spectrum of inflammatory conditions as they provide rapid symptomatic relief, especially in the short term. The use of corticosteroids must be carefully monitored as too little corticosteroid can show poor response whereas excess administration can increase the risk of adverse reaction. Drug utilization is important pharmaco-epidemiological study which plays a role in helping the health care system to understand, interpret and improve the drug. A retrospective observational study was conducted for 3 months from June 2017 to August 2017 in General Medicine Department of National Institute of Medical Sciences and Research, Jaipur a Tertiary Care Teaching Hospital. Altogether 256 patients, 47 patients were prescribed corticosteroids. Among these, Highest rate of drug prescriptions were observed for age range 61-75 which was in 18 patients (38.29%), followed by 46-60 which was 14 (31.91%). Highest rate of Steroid prescription were observed for patients of Respiratory system which consist of 27 (57.44%) out of which 18 (66.66) patients of COPD. The most widely prescribed corticosteroid were Budesonide-39 (73.58%) followed by Hydrocortisone- 6 (11.32%), Dexamethasone- 6 (11.32%), Deflazacort- 1(1.88%), Methyl Prednisolone- 1 (1.88%). Inhaler administration was found to be highest 38(69.81%) followed by drug administration through intravenously 13 (22.64%), oral administration was found to be lowest 3 (5.66%). The study highlighted, prescriptions were rational and comply with standard guidelines of corticosteroids. Involvement of a Clinical pharmacist can promote drug safety and better patient care as well as prevention of ADRs. The Establishment of steroid card for steroid usage for various indications should be done for effective utilization of steroids.

Keywords: Drug utilization review, Corticosteroids, Steroid card.

D-30

Pharmacological Evaluation of 4, 5-Dimethyl-2-[(phenylsulphonyl)amino]thiophene-3-carboxamide for Anticancer Activity Focussed on Anti-PARP and Tankyrase Inhibiting Activity

Ajisha J L, Winson Sam and Girish Kumar K

College of Pharmaceutical Sciences, Government Medical College, Thiruvananthapuram - 695101, Kerala, India
ajishajyothis@gmail.com

Abstract:

PARP1 and Tankyrase1 enzymes under PARP superfamily are targets for cancer treatment. Based on the SAR requirements of PARP1 and Tankyrase1 inhibitors, 4,5-Dimethyl-2-[(phenylsulphonyl)amino]thiophene-3-carboxamide was designed and synthesised. After subjected to chemical characterisation, the compound was subjected to *in vitro* cytotoxicity study by MTT assay with MCF7, HeLa, HT-29 and HCT116 cell lines. The results of MTT assay showed significant cytotoxicity, with more effects on MCF7 and HT-29 cells. The PARP1 inhibitor assay and Tankyrase1 inhibitor assay of the compound showed significant activity with IC_{50} values of 23.39 µM and 142.61 nM respectively. The *in vivo* anticancer activity was confirmed by Hollow Fiber Assay. The %net cell growth in 200 mg/kg, 400 mg/kg and 800 mg/kg was found to be 198.3±0.5277%, 125.7±8.215% and 70.61±11.32% respectively by Stable end point MTT assay. The gene expression study in MCF7 cells showed increased expression of p53 and decreased expression of NF-κB. All these results indicate that the test compound 4,5-Dimethyl-2-[(phenylsulphonyl)amino] thiophene-3-carboxamide may have significant anticancer activity with PARP1 inhibiting and Tankyrase1 inhibiting activity.

Keywords: PARP1, Tankyrase1, MTT assay, Hollow fiber assay, p53, NF-κB.

D-31

Evaluation of *Cucurbita maxima* Extract against Streptozotocin Induced Amnesia in Rats

Talha Jawaid and Mehnaz Kamal

[a] Department of Pharmacology, College of Medicine, Dar Al Uloom University, Riyadh
[b] Faculty of Pharmacy, Prince Sattam bin Abdul Aziz university , Alkhraj, Saudi Arabia – 226021
talha@dau.edu.sa

Abstract:

Cucurbita maxima (CM) seed oil is commonly used in Indian folk medicine to treat various ailments. We have investigated the effect of CM seed oil (CMO) on memory impairment induced by streptozotocin in rats. Male adult Wistar rats were administered streptozotocin to induce memory impairment. The nootropic agent, piracetam [100 mg/kg body weight, i.p.] and CMO [100 and 200 mg/kg body weight, p.o.] were administered daily for five consecutive days. Memory function was evaluated in the Morris water maze (MWM) test, the social recognition test (SRT), the elevated plus maze test, and the pole climbing test. Acetylcholinesterase (AChE) activity

and oxidative stress parameters were estimated in the cortex, hippocampus, and cerebellum of the brains after completion of the behavioural studies.. Streptozotocin caused memory impairment in all the behavioural paradigms along with a significant increase in AChE activity and oxidative stress in the brain. Streptozotocin also caused a significant increase in the expression of TNF-α in the hippocampus. CMO exhibited antiamnesic activity as indicated by a significant reduction in latency time in the MWM test and decreased social interaction during trial 2 in the SRT. Further, treatment with CMO significantly decreased the AChE activity and malondialdehyde levels along with an increase in the glutathione level in brain regions. CMO also significantly decreased the expression of TNF-α in the hippocampus. The effect of CMO on behavioural and biochemical parameters was comparable to that observed in rats treated with piracetam. These results indicate that CMO may exert antiamnesic activity which may be attributed to the inhibition of AChE and inflammation as well as its antioxidant activity in the brain.

Keywords: *Cucurbita maxima*, **Memory Impairment, Streptozotocin.**

D-32

Study of Interaction between Arjuna and Aloe Vera Marketed Formulation using Isoproterenol Induced Cardiotoxicity

Prakash Chaudhary, Jayashree Mahadik and Swati Dhande

Pharmacology Department, Faculty of Pharmacy, Bharati Vidyapeeth's College of Pharmacy, Navi Mumbai - 400705, Maharashtra, India
pikz2309@gmail.com

Abstract:

Consumption of herbal formulations has become a routine practice all over the world, due to false impression that these products are safe and effective. The co-administration of such products may either lead to therapeutic failure, adverse effects or depleted efficacy of one or more formulations. One such classic example is geriatric patients being treated with Terminalia arjuna (Arjuna) for cardiac disorders and they have tendency to consume herbal tonics as health supplement or laxative churnas like Aloe vera to ease bowel movement discomfort. The study was designed to evaluate pharmacodynamic interaction between Arjuna formulation (Himalaya Pvt. Ltd.) and Aloe vera formulation (Nature's Flair). The experimental model used was isoproterenol induced myocardial infarction in rats. Rats were grouped as group 1 (isoproterenol control), 2(Aloe vera), 3 (Arjuna) and 4 (Arjuna and Aloe vera). Electrocardiogram, enzyme activity, blood serum parameters and gastrointestinal transit were determined. Detrimental effect was found when two formulations were administered simultaneously resulting in decreased cardioprotective effect of Arjuna suggesting pharmacodynamic interaction between two formulations.

Keywords: Arjuna; Aloe vera; Isoproterenol; Myocardial infarction.

D-33

Preclinical Evaluation of a Homeo Formulation 'Force Drop' for its Androgenic Activity

Soumyajit Haldar, Mrityunjoy Majumdar and Arnab Samanta
Department of Pharmacology, Netaji Subhas Chandra Bose Institute of Pharmacy, Chakdaha - 74122, West Bengal, India
iamsoumya22@gmail.com

Abstract:

In this research a homeo formulation named 'Force Drop' (FD) obtained from N. P. Dutt & Son, Kolkata was evaluated for its androgenic activity and dry weight of androgen dependent organs by Hershberger Bioassay as per OCED Guidelines. Twenty four male albino Wistar rats, age of 41 days, weighing around 55gm were selected and orchiectomized and left for 7 days for acclimatization. Then all the rats were divided into 4 groups with 6 rats in each group. Group 1: Untreated (control group), Group 2: standard testosterone propionate treatment (0.4mg/kg) i.p, Group 3: FD low dose (2.5ml/kg) p.o, Group 4: FD high dose (5ml/kg) p.o given. All the animals received treatments for continuous 10 days as per their treatment schedule. On 10th post treatment day all the animals were weighed, sacrificed and androgen dependent organs isolated – Ventral Prostate, Seminal Vesicle, Cowper's Glands, Glans Penis and dry weights observed. FD had shown significant level ($p<0.05$) of androgenic activity while compared with the untreated control and the result was comparable to standard testosterone. Testosterone, FD (2.5ml/kg), FD (5ml/kg) had exhibited 158, 123, and 145 % growth in body weight respectively. The formulation Force Drop has shown satisfactory androgenic activity.

Keywords: Androgenic activity, Testosterone Propionate, Albino Wistar rat, Force Drop, Orchiectomy.

D-34

Effect of Shodhana on Flavonoid and Phenolic Content of *Semecarpus Anacardium* Linn

Sushma Singh, N T Pramathesh Mishra and Pratap Kumar Sahu

School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar -751003, Odisha, India
thakuri.sushma15@gmail.com

Abstract:

Introduction *Semecarpus anacardium* is commonly known as "BHALLATAK". It has been used since hundreds of years in Indian system of medicine (Ayurveda). It has lots of medicinal property due to various constituents, which are present in it like phenolic compounds, flavonoids, carbohydrates, alkaloids, steroids, etc. Shodhana is a process to remove the impurities of medicinal substances. It is essential because higher concentrated chemicals may cause adverse effect on human body. These chemicals should be neutralized to its normal pharmacological actions. So, this shodhan concept is very important. There are 2 types of Shodhan i.e. Samanya shodhana and vishesh shodhana. Without shodhana we cannot use any toxic drug. That's why shodhana is very essential in Ayurvedic treatment.

Objective:

To perform sodhana of nuts of *Semecarpus anacardium* Linn. Following ayurvedic pharmacopoeia procedure.

To extract the nuts of *Semecarpus anacardium* Linn. (Preshodhit and Shodhit) by methanol.

To estimate the flavonoid and phenolic content of both Preshodhit and Shodhit *Semecarpus anacardium* nuts.

Methodology:

- ESTIMATION OF FLAVONOID CONTENT
- ESTIMATION OF PHENOLIC CONTENT

Results & Discussion

Flavonoid Content of both pre Shodhit and Shodhit nut extracts were calculated as mg equivalent quercertin. For this a standard curve were prepared using pure quercertin Sodhana decreses the flavonoid content

Phenolic Contents of both Shodhit and pre Shodhit nut extract were calculated mg equivalent to Gallic acid. For this a standard curve is prepared by using pure Gallic acid. Sodhana increases the phenolic content

D-35

Effect of Shodhana on Skin Irritation of *Semecarpus Anacardium* Linn

Puravi Nayak, Anuja Badajena, N T Pramathesh Mishra and Pratap Kumar Sahu

School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar -751003, Odisha, India
puravi.nayak@gmail.com

Abstract:

Inrtoduction: *Semecarpus anacardium* is commonly known as "BHALLATAK". It has been used since hundreds of years in Indian system of medicine (Ayurveda). It has lots of medicinal property due to various constituents, which are present in it like phenolic compounds, flavonoids, carbohydrates, alkaloids, steroids, etc. Shodhana is a process to remove the impurities of medicinal substances. It is essential because higher concentrated chemicals may cause adverse effect on human body. These chemicals should be neutralized to its normal pharmacological actions. So, this shodhan concept is very important. There are 2 types of Shodhan i.e. Samanya shodhana and vishesh shodhana. Without shodhana we cannot use any toxic drug. That's why shodhana is very essential in Ayurvedic treatment.

Objective:

The present study is undertaken

To perform sodhana of nuts of *Semecarpus anacardium* Linn. Following ayurvedic pharmacopoeia procedure.

To exract the nuts of *Semecarpus anacardium* Linn. (Presodhit and sodhit) by methanol.

To evaluate skin irritation by both presodhit and sodhit *Semecarpus anacardium* nuts in Guinea pig.

Results And Discussion:

The effect of presodhit and sodhit Semecarpus anacardium on earlobe of Guinea pig is recorded. The thickness, erythema score and oedema score were measured. They were increase in Preshodhit as compare to shodhit drug. The decrease in skin irritation by shodhit drug is due to shodhana of Semecarpus anacardium; in which the toxic chemical were removed. Thus we found that may be due to shodhana of *Semecarpus anacardium* the toxic chemicals responsible for skin irritation were removed.

D-36

Androgenic Activity of Poly Herbal Mixture of *Aloe barbadensis* Leaf and *Phyllanthus emblica* Fruit Juice on Albino Wistar Rat

Sabia Bano, Sumit Paul, Mrityunjoy Majumdar and Tamali Ghosh

Master of Pharmacy, Department Of Pharmacology, Netaji Subhas Chandra Bose Institute of Pharmacy, Chakdah - 74122, West Bengal, India
sabia.yakub@gmail.com

Abstract:

This study designed to find out the polyherbal mixture of *Aloe barbadensis* and *Phyllanthus emblica* juice (AbPe) as a possible therapeutic agent that may increase the testosterone level in male Albino Wistar rats. Fresh tender aloe leaves were collected from medicinal garden of NSCBIP campus, and amla was collected from local market, washed thoroughly with distilled water. Juice prepared and collected separately, equal portion of juices were mixed in a different container, stored and used for the study. AbPe was investigated for its androgenic property by Hershberger Bioassay. 24 male albino wistar rats age of 41 days, weighing around 55gm were selected divided into groups and treatment given for 10 days. Testosterone propionate (2mg/kg) acts as standard drug. On 10th post treatment day all the animals were weighted, sacrificed and isolated the sex organs ventral prostate, seminal vesicle, Cowper's gland, glans penis and dry weight of all these organs were observed. AbPe has shown significant androgenic property while compared with the untreated control in dose dependant manner i.e. AbPe(5ml/kg) has shown better result than AbPe(2.5 ml/kg), Testosterone, AbPe(2.5ml/kg), AbPe(5ml/kg) has shown significant increase in body mass 158, 126, 133% respectively when compared with untreated (121%).

Keywords: *Aloe barbadensis*, *Phyllanthus emblica*, **Testosterone, Androgenic activity.**

D-37

Antiangiogenic Activity of Betamethasone on Chick Chorioallantoic Membrane Model

Pravalika, Swathi Baswa and Vamshi Vishnu Yamsani

Department of Pharmacology, Aurobindo College of Pharmaceutical Sciences, Gangadevipally, Warangal - 506330, Telangana State, India
basvaswathi@gmail.com

Abstract:

New growth in the vascular network is important since the proliferation, as well as metastatic spread, of cancer cells depends on an adequate supply of oxygen and nutrients and the removal of waste products. New blood and lymphatic vessels form through processes called angiogenesis and lymphangiogenesis, respectively. Angiogenesis is regulated by both activator and inhibitor molecules. More than a dozen different proteins have been identified as angiogenic activators and inhibitors. Levels of expression of angiogenic factors reflect the aggressiveness of tumor cells. Betamethasone is used for a number of diseases including rheumatic disorders such as rheumatoid arthritis and systemic lupus erythematous, skin diseases such as dermatitis and psoriasis, allergic conditions such as asthma and angioedema, preterm labor to speed the development of the baby's lungs, Crohn's disease and cancers such as leukemia and along with fludrocortisone for adrenocortical insufficiency. The present study investigated the anti-angiogenic activity of Betamethasone on a chick chorioallantoic membrane assay model (CAM Assay). Chorio allantoic membrane of chick embryos was used to evaluate the antiangiogenic activity of the Betamethasone with different concentrations (10µg/ml and 20µg/ml). The regression of the blood vessels in the localised area in the CAM disk by visual observation was documented. In conclusion, results revealed the dose dependent antiangiogenic property of the Betamethasone and used as an anticancer drug.

Keywords: Betamethasone, Anti-angiogenesis, CAM assay, anticancer activity.

D-38

Drug Utilization Evaluation of Non –Steroidal Anti-inflammatory Drugs in Medical Intensive Care Unit of Tertiary Care Teaching Hospital in Northern India

Nikhila, Mundada P, Singh A and Nathiya D

Department of Pharmacy Practice, NIMS Institute of Pharmacy, NIMS University, Jaipur - 303121, Rajasthan, India
30nikhila1995@gmail.com

Abstract:

Non- steroidal Anti-inflammatory Drugs (NSAIDs) are amongst the most widely used class of drug in the developing countries, as it plays fundamental role in controlling inflammation and pain. NSAIDs have been found to be the causative agent in 27% of all adverse drug eruptions. Drug utilization studies are powerful exploratory tools to ascertain the role of drugs in society. The present study was conducted with the objective of collecting the details of General medicine ward patients of tertiary care teaching hospital and studying the pattern of drug prescription among them according to WHO prescribing guideline. A retrospective observational study was conducted at MICU of general medicine department in National Institute of Medical Sciences & Research Hospital, NIMS University, Jaipur, Rajasthan. Among 258 randomly selected patients, 146 patients were prescribed NSAIDs of which, 83(56.8%) were males and 63(43.2%) were females. Among these, highest rate of drug prescribed was observed for patients aged between 46 to 60 years, which consist of 57(39.04%) patients (31 males + 26 females). Highest rate of

NSAIDs prescribed was observed in patients of pulmonary infection which consisted of 37(25.3%) patients followed by cardiovascular and PUO which consisted of 17.1% each. Most frequently prescribed drug was Paracetamol (56.16%) followed by Diclofenac (30.8 %), Diclofenac + Paracetamol (19.1%), Aspirin (15.7%). On the basis of social status 12% were smokers and 9% were alcoholic among 146 patients. This study shows that average NSAIDs prescribed per prescription was 1.33. The study highlighted, need of NSAIDS usage guidelines and restriction policies for the rational prescribing of NSAIDS in critically ill patients.

Keywords: NSAIDs, Drug utilization evaluation, NSAIDS usage guidelines.

D-39

Comparative Study of Invitro Anti-Inflammatory Activity of Two Extracts of *Anogeissus Latifolia* Leaf

Ayesha Sayyed, Akanksha Pawar and Saba Shaikh

Department of Pharmacology, Anjuman-I-Islam Kalsekar Techical Campus, School of Pharmacy, New Panvel, Navi Mumbai - 410206, Maharashtra, India
shaikhsaba66@gmail.com

Abstract:

The present study was undertaken to investigate and compare the Invitro- anti-inflammatory activity of aqueous and methanolic extract of *Anogeissus latifolia* (combretaceae). Evaluation of in-vitro anti-inflammatory activity was carried out by using erythrocyte membrane stabilization, inhibition of protein denaturation and proteinase inhibitory activity. The result obtained in the present study indicate that an anti-inflammatory activity was found in both the extracts i.e methanolic and aqueous extract of *Anogeissus latifolia* . But the methanolic extract of *Anogeissus latifolia* showed more significant anti-inflammatory activity.

Keywords: *Anogeissus latifolia*, **anti-inflammatory, carrageenan, indomethacin, edema.**

D-40

Evaluation of Wound Healing Potential of Different Topical Formulations

of Methanollic Whole plant extracts of Biophytum sensitivum L. in Rats

Lokesh Prasad M.S, Kalaskar P. Gurunath and S.B. Chandrasekar
Drugs Testing Laboratory, Drugs Control Department, Palace Road, Bangalore - 560001, Tamil Nadu, India
lokeshprasadms@gmail.com

Abstract:

Non curative wounds are one of the major problems often encountered in health care system. The resumption of interest to use of Traditional System of Medicine especially plant based medicines are rapidly growing. Herbs are more potent healers and promote the repair mechanisms in a scientific way without causing any side effects. Plants used in Ayurveda are known to play significant role in the management of wound healing. But scientific evaluation of these herbal drugs to assess their safety and efficacy as well their standardization are required for their international recognition and acceptance. Hence in the present study attempts were made to scientifically evaluate the wound healing potentials of an Ayurvedic plant, 'LAJJALU' botanically equated as *Biophytum Sensitivum* (L).The present study evaluates the effect of topical ointment different formulations like Ointments (5% & 10%), Creams (5% & 10%) and Gels (5% &10%) of the Methanollic whole plant extracts of *Biophytum Sensitivum* (MEBS) using excision wound model in rats. Excision wounds (2.5 mm, i.d.) were inflicted on depilated back of rats. Formulations of MEBS were applied twice daily for 21 days on the dermal wound. The parameters observed were Wound area, re-epithelization, vascularity, fibroblast number, collagen content. The MEBS of Ointment, Creams, Gels (10%) and Silver sulphadiazine (1%) Showed statistically very significant (P>0.01) when compared to control group at 21st day. Taken together, the results imply that MEBS possesses dose dependent pro-healing potential. The Order of potency MEBS: Silver sulphadiazine>MEBS Gel base>MEBS Cream base> MEBS Ointment base.

Keywords: *Biophytum Sensitivum,* **wound healing, vascularity.**

D-41

In Vitro Anti-diabetic Activity of Samasarkara Churna

Debiprasad Lenka, Sangeeta Mukhi and Anindya Bose

Department of Pharmaceutical Analysis and Quality Assurance, School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar - 75 003, Odisha, India
debiprasadlenka100@gmail.com

Abstract:

Samasharkara churna, a poly-herbal formulation, is one

of the popular ayurvedic formulation is prescribed for many diseases including Prameha (Diabetes mellitus) but the scientific documentation with regards to its effect for the indication is lacking. In our present work, Samasharkara churna was evaluated for anti-diabetic effects of methanolic and aqueous extracts by invitro Alpha-amylasemodel.Alpha-amylase is type of the intestinal enzyme which play important role in carbohydrate digestion and glucose absorption. Suppression of the activity of Alpha-amylase would delay the digestion of starch and oligosaccharides, which in turn decreases the absorption of glucose and consequently reduce the blood glucose. This technique is one of the anti-diabetic therapeutic approaches to reduce the post prandial glucose level in blood by inhibiting activity of alpha-amylase enzyme and it can be used as a strategy in management of blood glucose.In vitro antidiabetic studies show that aqueous extract exhibited significant activity when compared to other solvent extracts. The investigation confirms that aqueous extract exhibited highest antidiabetic activity among all extracts. This study provides scientific evidence that Samasarkara churna have anti-diabetic efficacy. Thus, consideringits relative hypoglycemic potency, they may serve as useful therapeutic agents for treating diabetes.

Keywords: Diabetes mellitus, churna, Ayurveda.

D-42

New Approach towards Treatment of Diabetes Mellitus with Beta Caryophyllene and L- arginine Potential Combination

Vivek Kumawat and Kaur Ginpreet

Department of Pharmacology, Shobhaben Pratapbhai Patel School of Pharmacy and Technology Management, SVKM'S NMIMS, Mumbai - 400056, Maharashtra, India
vivekkumawat07@gmail.com

Abstract:

Background: Beta-caryophyllene (BCP) and L-Arginine (L-A) were found to have anti-inflammatory, insulinotropic and antioxidant activity. Thus there is need to explore the mechanistical approach of combination consisting of both BCP and L-A for the treatment of diabetes mellitus. **Objectives:** The aim of present study is to evaluate the safety profile, in vitro anti-oxidant activity and alpha glucosidase activity of BCP, L-A and their combinations. **Method:** Safety studies of both BCP and L-A were carried out in accordance with OECD guidelines for acute (2000 mg/kg oral) and repeated dose toxicity (300, 600, 900 mg/kg). In vitro alpha Glucosidase assay and anti-oxidant activity of combination of both drugs at different concentrations (20, 40, 80,160 and 320 (µg/ml) was assessed by DPPH assay, Hydrogen peroxide scavenging capacity. **Results:** Toxicity study reveals that BCP and L-A was both found to be non-toxic with no adverse effects and was well tolerated at different administration. DPPH and H_2O_2 radical scavenging action of combination of drugs (BCP+L-A) were found to have more potent inhibitory action with IC50 value at 79µg/ml and 18µg/ml respectively as compared to their individual effects at 158µg/ml and 160µg/ml respectively. *In vitro* alpha Glucosidase inhibitory action of combination of drugs (BCP+L-A) were found to have more potent inhibitory action with IC50 value at 40µg/ml as compare to their individual effects at 82µg/ml. **Conclusion:** Our results conclude that combination of BCP and L-arginine was found to be safe and has significant anti-oxidant and inhibitory effect on alpha glucosidase enzyme. This supports the use of this combination for the treatment of diabetes mellitus.

Keywords: Beta-caryophyllene, L- Arginine, Anti-diabetes, Anti-oxidant.

D-43

Evaluation of Hypoglycemic Activity of *Derris scandens & Pulicaria wightiana* in Normal Albino Rats

Thakur Lakhan Singh

Department of pharmacology, VIPER, Narsapur, Medak, Telangana **- 502300**, India
lakhanthakur.singh@gmail.com

Abstract:

Objective: The present study was focused to evaluate hypoglycemic activity ethanol and methanol extractsof whole plant of *Derris scandens&pulicaria wightiania in* Swiss albino rats. **Materials and Methods:** Hypoglycemic Screening activity of the extracts were carried by administering graded doses of the ethanol and methanolic extract of whole plant of *Derrisscandens and Pulicaria wightiania* (100,200 and 400 mg/kg, b.w.) orally to the experimental rats. The blood glucose level was measured at different time intervals using glucose peroxidase method using Glucometer. **Results**: The study of ethanol extract whole plant of Derris scandens and Pulicaria wightiania at three different doses produced significant hypoglycemic effect in normal rats at 400mg/kg body weight. In Oral Glucose Tolerance Test, *Derris scandens* and Pulicaria wightiania (400 mg/kg) significantly reduced elevated blood glucose level in normal rats. In long term (14 days) study, *Derris scan dens* and Pulicaria wightiania (400 mg/kg) significantly decreased blood glucose

level. **Conclusion:** The results reveal that the ethanol extracts improved glucose tolerance in normal rats. Thus the study suggests that the ethanol extract *Derris scandens and pulicaria wightiania at high doses* could reduce normal blood glucose level, more significantly.

Keywords: *Derris scandens,* **and** *Pulicaria wightiania, Hypoglycemia*, **Albino rats, Blood glucose.**

D-44

Evaluation of Effect of Ethanolic Fruit Extract of Averrhoa Carambola Linn on Cognition Memory Impairment in Mice

GomathiVenkatachalam, JaykarBalasundaram, Prathima.A and Prakash.P

Department of Pharmacology, Vinayaka Mission's College of Pharmacy, Salem - 636008, Tamil Nadu, India
gomicology@gmail.com

Abstract:

The present study was carried out to evaluate the ethanolic fruit extract of *Averrhoacarambolalinn* on cognition memory impairment in mice. Alzheimer's disease is an emerging night mare in the field of medicine because no exact cure exists, as existing nootropics have several limitations. The preliminary phytochemical study showed the presence of flavonoids, carbohydrates, glycosides, and phenolic compounds. Screenings of cognitive functions were done at 200 &400mg/kg by oral administration of extract are estimated by using elevated plus maze model (EPM). The results showed the ethanolic extract of Averrhoacarambolalinn exhibit significant memory enhancing activity by decrease in the transfer latency in EPM.

Keywords: *Averrhoacarambolalinn*, **memory enhancing, elevated plus maze model (EPM).**

D-45

Evaluation of Antidepressant Activity of Aqueous Root Extract ofArnebia Benthamii in Rats

Vandana Pokhriyal, N. Eloziia, Neeraj Kumar and Preeti Kotiyal

Department of Pharmaceutical Sciences, Shiri Guru Ram Rai Institute of Technology and Science, Patel Nagar, Dehradun - 248001, Uttarakhand, India
pvandu95@gmail.com

Abstract:

Depression is a mental disorder which can exist with clinically significant distress, impairment of social, occupational or other important areas of function. It is major public health problem. This causes depressed mood, loss of happiness or interest, feeling of low self worth, disturbed sleep & appetite. The Aqueous root extract of *Arnebia benthamii* Shows promising effect of antidepressant activity in rats. Roots have antihelmenthic, antipyretic, antiseptic, antimicrobial& antioxidant properties. In present study, evaluation of antidepressant activity of Aqueous root extract of *Arnebia benthamii* was assessed by behavioural assessments such as force swim test & Tail suspension test and biochemical assessments such as superoxide dismutase, nitrite level, and brain gluthathione and lipid peroxidation in the rat brain as compared with standard antidepressant drug Imipramine\10 mg\kg. Test drug aqueous root Extract of *Arnebia benthamii* adminsterd orally in three doses (75,150,300mg/kg) for a period of 14th days. It showed significant reduction immobility time in Tail suspension test and forced swim test as compared to control group aqueous root extract of *Arnebia benthamii* increased brain gluthathione level, SOD level & decreased lipid peroxidation and nitrite level. Aqueous root extract of *Arnebia benthamii* at dose of 75mg/kg has less effect in decreasing immobility period as compared to 150 & 300 mg\kg thus making 150 & 300 mg\kg more beneficial in improving depression.

Keywords: *Arnebia benthamii*, **Force swim test, Tail suspension test, Imipramine, Antioxidant.**

D-46

Neuroprotective Effects of *Tagetes Erecta* Aluminium Chloride Induced Learning and Memory Imapairment in Mice

Pankaj Singh, Ved Prakash, Parminder Ratan and Preeti Kothiyal

Department of Pharmaceutical Sciences, Shiri Guru Ram Rai Institute of Technology and Science, Patel Nagar, Dehradun - 248001, Uttarakhand, India
pankajpanwar315@yahoo.com

Abstract:

Amnesia is a deficit in memory caused by brain damage, disease, or psychological trauma. Amnesia can also be caused temporarily by the use of various sedatives and hypnotic drugs. Based on study conducted by scientist it

is reported that *Tagetes erecta* has remarkable potential as neuroprotective agents with attributes like anti amyloid, anti-chE attributes. The present study was designed to assess the effect of *Tagetes erecta* on learning and memory impairment in aluminium chloride treated mice.The extract of tagetes erecta was administered orally in two doses (200 ,and 400mg/kg p.o.) for a period of 21 days. Piracetam 200mg /kg i.p., was used as a standard treatment. Aluminium chloride was administered daily in the dose of 100 mg/kg orally along with treatments. To assess the cognitive function the MWM and EPM were used. Effect of drug was assessed in the end of study by AntichE and lipid per oxidation in the brain tissue of mice. The group treated with aluminium chloride showed impairment of memory as compared to the control group. Treatment with Tagetes *erecta* (200 and 400 mg /kg p.o.) for 21 days reversed Aluminium chloride induced neurodegenration that shown by increase in the time spent in target quardrant in MWM, transfer latency decreases in EPM as compared to the group treated by aluminium chloride. Increase in AntichE and Lipid per oxidation activity by administration of aluminium chloride as compared to Tagetes erecta treated groups .On treatment with *Tagetes erecta* dose dependently shows significant decrease in Lipid per oxidation and AchE activity as compared to aluminium treated group .Result suggest that *Tagetes erecta* shown the improvement in mice suffering from learning and memory of amnesic mice.

Keywords: Tagetes erecta, Pirecetam, Aluminium chloride, AntichE.

D-47

Neuroprotective Activity of Curcumin in Combination with Piperine against Quinolinic Acid Induced Neurodegeneration in Rats

Arti Rana and Shamsher Singh

Department of Pharmacology, I.S.F College of Pharmacy, Ferozepur Road, Ghal Kalan, Moga - 142001, Punjab, India
ranaarti63@gmail.com

Abstract:

Introduction: Curcumin is well reported phenolic compoundused for various C.N.S and other disorders but major problem is its low oral bioavailability. So my emphasis is placed on the use of piperine with curcumin as bioavailability enhancer, neuromodulatory and neuroprotective against Quinolinic acid movement disorder. **Methods**: QA was administered intrastriatally at a dose of 200 nmol/2µl saline, bilaterally once by stereotexy (with component anterior +1.7 mm; lateral ± 2.7 mm; ventral - 4.8 mm from bregma) after anaesthesia with ketamine (80 mg/kg) and diazepam (5 mg/kg). Curcumin was administered at a dose of 25 and 50 mg/kg and also combination of curcumin (25 mg/kg) with piperine (2.5 mg/kg) daily for 21 days starting from the day after QA administration. All the behavioral parameters like grip strength, narrow beam, rota-rod and locomotor activity were assessed on day 1st, 7th, 14th, and 21st day. On day 21st animals were sacrificed and striatal homogenate was used for biochemical (LPO, nitrite, reduced GSH levels), inflammatory cytokines (IL-1β, IL-6 and TNF-α) and neurotransmitters analysis (dopamine, norepinephrine, serotonin, DOPAC, HVA, 5-HIAA, adenosine). **Results**: Intrastriatal administration of QA significantly reduced body weight, impaired motor performance in rats. QA deplete antioxidant enzyme, altered neurotransmitters. Curcumin at low dose of (25 mg/kg, po), high dose (50 mg/kg, po) and combination of curcumin with piperine (25 mg/kg, po + 2.5 mg/kg, po) enervate the alteration in behavioural, biochemical, neuroinflammation and neurochemicals in striatum. **Conclusion**: Curcumin in combination with piperine can be useful as therapeutic strategy for PD.

Keywords: Quinolinic acid, Curcumin, Piperine, Norepinephrine, N-methyl D-aspartate.

D-48

Association between REM sleep Behaviour Disorder and Impulse Control Disorder in patients with Parkinson's disease

M. Sripriya and G. Sada Siva Rao

Department of Pharmacy Practice, Hindu College of Pharmacy, Guntur - 522002, Andhra Pradesh, India
priyamunnangi1997@gmail.com

Abstract:

The relationship between impulse control disorder (ICD) and REM sleep behaviour disorder (RBD) has not yet been clarified, and the literature reports contradictory results. Our purpose is to analyze the association between these 2 disorders and their presence in patients under dopaminergic treatment. Sleep disturbances are common in patients with Parkinson's disease (PD) and are even more prevalent in patients with behavioural addictions, such as pathological gambling, compulsive sexual behaviour, compulsive buying, binge eating, punding, and the compulsive use of dopamine replacement therapy. Initial studies suggested that these problems arise in about 14% of treated patients , but more recent studies indicate that up to 40% of PD patients may be affected This discrepancy

may be explained because ICD symptoms are under diagnosed in clinical practise. Furthermore, much higher prevalence rates of ICDs are found when screening is performed with a caregiver or family member rather than with the PD patient alone likely because patients often do not disclose aberrant behaviours due to shame or lack of insight.

Keywords: Parkinson's disease; REM sleep behaviour disorder; Impulse control disorder and related behaviours; Dopamine agonists.

D-49

Lurasidone in Combination with Lithium or Valproate for the maintenance Treatment of Bipolar I Disorder

K. Haritha and G. Sada Siva Rao

Department Of Pharmacy Practice, Hindu College of Pharmacy, Guntur - 522002, Andhra Pradesh, India
haritha8972@gmail.com

Abstract:

Bipolar disorder is a chronic illness with a high rate of recurrence that is frequently associated with reduced quality of life and impairment in functioning Even with treatment, 40–60% of individuals have been found to experience are lapse withina2-yearperiod,with depressive episodes predominate over manic episodes Lurasidone (DSRAn)has demonstrated efficacy in the acute treatment of bipolar depression, both as monotherapy,and as combination therapy with lithium or valproate.To evaluate the recurrence prevention efficacy of lurasidone for the maintenance treatment of bipolar I disorder, patients received up to 20weeks of open-label lurasidone(20–80 mg/d)combined with lithium or valproate during an initial stabilization phase. A total of 49 patients met stabilization criteria and were randomized to28weeks of double-blind treatment with lurasidone (20–80 mg/d)or placebo ,in combination with lithium or valproate .Based on a Cox proportional hazard model,treatmentwith lurasidone reduced the probability of recurrence of any mood episode by 29%(primary endpoint),however ,the reduction didn't achieve statistical significance. Probability of recurrence on lurasidone was significantly lower in patients with an index episode of depression (HR,0.57; P=0.039), in patients with any index episode who were not rapid-cycling(HR,0.69; P=0.046), and when recurrence was based on MADRS, YMRS, or CGI-BP-Severity criteria (HR,0.53; P=0.025; sensitivity analysis).Long-term treatment with lurasidone combined with lithium or valproate was found to be safe and well- tolerated, with minimal effects on weight or metabolic parameters.

Keywords: Bipolar disorder; Recurrence; Atypical antipsychotic; Lurasidone.

D-51

Pharmacological Role of β-asarone in Parkinson's disease: An *in silico* Study

Meenakshi Gupta, Ruchika Sharma and Anoop Kumar

Department of Pharmacology, Indo-Soviet Friendship Pharmacy College (ISFCP), Moga - 142001, Punjab, India
meenakshigupta231294@gmail.com

Abstract:

Introduction: Parkinson's disease is affecting millions of peoples worldwide. Thus, there is a great need to identify novel therapeutic strategies or candidate drug molecule which can rescue neuronal degeneration. Recently, β-asarone has been reported to possess neuroprotective potential. Thus, this study was undertaken to unlock potential of β-asarone against Parkinson's disease. **Material and Methods:** The crystal structures of dopamine receptors (PDB: 3PBL, 2.89Å) were retrieved from RCSB protein data bank. Protein pre-process was completed by addition of polar hydrogen and removal of metal ions, cofactor and water molecule outside 6A^0.The structure of β-asarone was drawn in chem draw ultra 7.0.1. Energy minimization of both protein and ligand has been performed by using minimize tool. Finally, ligand docking was performed in Gold V5.2.2 using extra precision mode with all default parameters. **Results and Discussion:** The binding mode implies that bound ligand with the active site of the receptor showed good binding with PLP fitness 55.9493. β-asarone also showed similar binding affinity towards D3 receptor with PLP fitness = 55.9297. Further, β-asarone is interacting through one hydrogen bond with amino acid residues (Val 111) of D3 receptor. **Conclusion:** In conclusion, β-asarone showed the same kind of interaction as that of the bound ligand. These preliminary results may act as effective precursor tool for development of β-asarone as promising anti-Parkinson agent. However, furthermore experimental validation using *in-vitro* & *in-vivo* studies is needed to explore their therapeutic & toxic effects.

Keywords: Docking study; β-Asarone; Parkinson's disease.

D-52

Trends in Anticancer Drug Development

J. S Bhargavi and V.S Swathi

Doctor of Pharmacy Programme, Dept. of Pharmacy Practice
Vignan Institute of Pharmaceutical Technology, Duvvada – 530012,
Vishakhapatnam, India
sujanabhargavi16@gmail.com

Abstract:

The burden of cancer is predicted to continue growing at an alarming rate into the future, the WHO predicts, with an estimated 22 million new cases and 13 million deaths each year by 2032. Current standard treatments have failed to significantly impact cancer mortality rates, but tremendous efforts have been made to elucidate the basis of cancer biology with the aim of promoting anticancer drug development. Especially over the past 20 years, anticancer drug development has developed from conventional cytotoxic agents to target-based and immune-related therapies. Unlike many of today's standard treatments, targeted therapies attack only cancer cells and leave healthy cells alone. So, they may help limit side effects and improve survival. Consequently, more than 200 anticancer drugs are available on the market. However, anticancer drug development still suffers high attrition during the later phases of clinical development. As novel technology is increasingly applied to the challenge of cancer, new opportunities are emerging to innovate in anticancer drug development. Here we are presenting a glimpse of some of the great strides made in this field, including precision medicine, cancer stem cells, drug repositioning and virus-based therapy (oncolytic viruses) against cancers, all of these emerging treatments offer promising method to improve the quality of life in cancer patients.

Keywords: Cancer, WHO, Oncolytic-viruses, Cytotoxic, Drug-Repositioning.

D-53

Evaluation of Antimicrobial Activity of *Eulophia Nuda Lind* Leaves Extracts

Pravin P.Tonchar, V. P. Nagulwar and Meenal S. Mahajan

Government College of Pharmacy, Kathora Naka, Amravati - 444604, Maharashtra, India
p.tonchar1234@gmail.com

Abstract:

Eulophia nuda Lind. belongs to family *Orichidaceae* is rare and endangered orchid. Present research work was carried out on leaf extracts of *Eulophia nuda* for the evaluation of antimicrobial activities such as as antibacterial and antifungal. Chemical tests and chromatographic study (TLC) were studied on three leaf extracts. Preliminary phytochemical screening revealed the presence of phytochemical constituents like alkaloids, protein, carbohydrate, tannin and cardiac glycoside. Three leaf extracts were prepared by using solvents (chloroform, acetone and ethanol). All extracts were solidified and extractive value of ethanol extract was found to be more. Antibacterial activity was carried out with Paper Disc method against *Escherichia coli* and *Staphylococcus aureus*. Chloroform extract was more effective against *Staphylococcus aureus* with maximum zone of inhibition 18mm compared to standard antibiotic Ampicillin with zone of inhibition 8 mm and ethyl alcohol is also effective against *Staphylococcus aureus* having zone of inhibition of 10 mm compared standard Ampicilin of 8 mm. Antifungal studies was carried out using Paper Disc method against *Candida albican* and *Aspergillus niger*. It revealed no zone of inhibition and thus showed no antifungal activity. From the research work, it was concluded that the leaves had antibacterial effect against *E.coli* and *S.aureus* and showed no antifungal effect against *Candida albicans* and *Aspergillus niger*. Furthermore, pharmaceutical antibacterial formulations can be prepared and structural elucidation of promising leaves extracts of *Eulophia nuda* can be carried out using studies like IR, NMR, Mass spectrometry and Chromatography.

Keywords: *Eulophia nuda leaves extracts,* **antibacterial activity, antifungal activity.**

D-54

Comparative Study of the Antimicrobial Effects of Polyherbal Preparations of Resin (CURCUMA LONGA L.) & Volatile Oils

Rimjhim S. Roy and Pritam Chetri

School of Pharmacy, ITM University, Gwalior - 474001, Madhya Pradesh, India
royrimmy5@gmail.com

Abstract:

Curcuma longa is a major spice crop grown abundantly in India & other tropical countries .It's major constituent is curcumin which gives turmeric its unique aroma , flavour & medicinal properties .Curcumin is a natural phytochemical obtained from dried root & rhizome of turmeric (Curcuma longa L.) .The antimicrobial activity of volatile oils & extracts has been recognized for many years . However, few studies have compared large number of oils & extracts using polyherbal

formulation methods that are directly comparable. This study chronicles the exploration of the resins & volatile oils in terms of development of natural analogous for the antimicrobial activity.

Keywords: Resin, Curcuma longa L., Volatile oils, Antimicrobial.

D-55

Comparative Potential of Statin Drugs against *Candida Albican* Infections: An *In Silico* Study

Ritika Rana, Ruchika Sharma and Anoop Kumar

[1]Department of Pharmacology, Indo-Soviet Friendship Pharmacy College (ISFCP), Moga - 142001, Punjab, India
ranaritika30@gmail.com

Abstract:

Introduction: *Candida albicans* infections and their resistance to clinically approved azole drugs are major concerns for human. Statins are strong potential candidates to be repurposed as novel antimicrobial agents. Thus, this study was undertaken to compare the potential of Atorvastatin and Simvastatin against *Candida albican* infections. **Material and Methods:** A simple 3D model of *Candida albicans* has been developed by wiss Modeller and validated by Ramachandran plot. Finally, ligand docking was performed in Gold Suite v5.2.2 using extra precision mode with all default parameters. **Results and Discussion:** Both Simvastatin (PLP Fitness57.7139) and Atorvastatin (PLP Fitness 65.4884) have shown good binding affinity towards chimeric 1EA1. Atorvastatin has formed 2 hydrogen bond with amino acid residues (ARG23 and ILE188) where as Simvastatin has formed 1 hydrogen bond with amino acid residues (HIS16). **Conclusion:** The present study have developed and validated a simple model for *Candida albican* P450DM which would be helpful for designing and synthesis of more specific novel compounds as antifungal agents. Atorvastatin have shown good binding affinity towards chimeric 1EA1 as compared to Simvastatin. However, further wet lab experiments are required to confirm the antifungal effect of these statin drugs.

Keywords: Statin drugs; candida albican; Homology Modelling; Docking study.

D-56

Anti-tumor Activity of *Albizia lebbeck* Linn. pods against Ehrlich Ascites Carcinoma (EAC) Cell Lines *In-vivo*

Ganesh. Payyavula, Ch. Naga Kavitha and S. Krishna Rao

[1]Department of Pharmacology, GITAM Institute of Pharmacy, GITAM University, Gandhi Nagar, Rushikonda, Visakhapatnam - 530045, Andhra Pradesh, India
ganeshpharmacist222@gmail.com

Abstract:

The plant *Albizia lebbeck L.* (Mimosaceae) is commonly known as 'Shirisha' in Ayurvedic system of medicine and reputed as the indigenous medicine in India. All parts of this unique plant are useful and have a wide spectrum of medicinal uses for the treatment of allergic disorders, Bronchitis, Leprosy, Eczema, and Paralysis. The objective of the present study was to explore the anti-tumor activity of the ethanol extract of *Albizia lebbeck L.* pods against Ehrlich Ascites Carcinoma (EAC) bearing Swiss albino mice. The EAC cells were maintained *in vivo* in Swiss Albino mice by intraperitoneal transplantation of 2×10^6/mouse every 10 days. Ethanolic extract of *Albizia lebbeck L.* (*ALEE*) pods was administered for 14 consecutive days to different groups of animals at doses of 200 and 400 mg/kg body weight intra-peritoneally. Group 1 served as normal control and received the vehicle only. 5 -Flurouracil (20 mg/kg; i.p.ly) was used as a reference standard. On 15th day, 24 h of last dose and 18 h of fasting, the mice were sacrificed and the anti-tumor effect of *ALEE* was assessed by evaluating tumor volume, viable and non-viable tumor cell count, increase in life span, haematological parameters of EAC bearing host. *In vitro* cytotoxicity assay has been evaluated by using trypan blue method. The extract showed direct cytotoxicity on EAC cells in a dose dependent manner with a significant ($p<0.01$) decrease in the body weight, tumor volume, viable cell count, tumor weight and also elevated the life span of EAC tumor bearing mice. Hematological profile such as RBC, hemoglobin, WBC and platelet count reverted to the normal levels in *ALEE* treated mice**.** The results showed that the ethanol extract of *Albizia lebbeck L.* was effective in inhibiting the tumor growth in the ascites carcinoma model and possess potent anti-tumor activity that is comparable to 5-flurouracil.

Keywords: *Albizia lebbeck,* **Ehrlich Ascites Carcinoma, 5-Flurouracil, tumor volume, cytotoxicity.**

D-57

Study of Memory Impairment Effect of Eslicarbazepine Alone and in The Presence of Anticonvulsant Nootropic Herb Ginger

Patel Sucharita, K.L. Krishna and Parashuram Punde

Department of Pharmacology, JSS College of Pharmacy, JSS University, Mysuru - 570015, Karnataka, India
sucharitapatel25@gmail.com

Abstract:

Memory impairments (MI) are the major challenges of epilepsy and antiepileptic therapy. Many studies have revealed that co-administration of nootropic agent with antiepileptic drug may decrease the memory impairment. This study was carried out to evaluate the MI of eslicarbazepine (ESL) and to assess the protective effect of alcoholic extract of *Zingiber Officinale* (AEZO). MI activity was evaluated by Morris water maze (MWM) task on maximal electro shock (MES) induced convulsive mice. Antioxidant and free radical scavenging potential of AEZO was also determined and AEZO exhibited potent free radical activity when evaluated *in vitro* methods. ESL showed MI in mice by increasing escape latency time (ELT) and decreasing time spent in target quadrant (TSTQ) when compared to control group. The extent of MI was decreased when given half dose of ESL however it was more than control group. When AEZO was co-administered with the ESL significant decrease in MI induced by ESL was observed. Anticonvulsant activity was found to be synergized due to the co-administration of AEZO when compared to control and ESL alone treated animals. Combination of reduced dose of ESL and AEZO was also shown to decrease MI without altering anticonvulsant activity. This study reveals the dose dependent memory impairment activity of ESL and the same was corrected by co-administration of AEZO. ESL retains the antiepileptic activity in presence of AEZO and even synergism of antiepileptic activity was observed. However further studies are required to make use of co-administration nootropic with epilepsy therapy devoid of memory impairment.

Keywords: Eslicarbazepine, *Zingiber officinale*, **Acetylcholinesterase, Memory impairment.**

D-58

Anti-nociceptive Activity of *Potentilla anserina* Plant Extracts by Using Different Models in Albino Rats

Madhusudhan Reddy and Hari kiran Lingabathula

Department of Pharmacognosy, Swami Vivekananda institute of Pharmaceutical Sciences, Nalgonda – 508116, Telangana, India
amreddy.reddy@gmail.com

Abstract:

Potentilla anserina (Rosaceae) is traditional medicinal plant in India and it is available throughout the Northern hemisphere. This study was intended to evaluate the Anti-nociceptive activity of methanolic extracts of *Potentilla anserina* leaves in Acetic acid induced Writhing test and Eddy's Hot Plate method in albino rats at the dose level of 75, 150 and 300 mg/kg p.o and study was compared with the standard drug Indomethacin 10mg/kg p.o. The methanolic extract of *Potentilla anserina* showed significant Anti-nociceptive activity in acetic acid induced Writhing method i.p injection of PAME (75, 150,300 mg /kg) 1hr before a pain stimulus significantly reduced the nociceptive response. In the hot plate method there was no significant difference in nociceptive behavior.

Keywords: *Potentilla Anserina*, **Indomethacin, Acetic acid.**

D-59

The Effect of A1-Antitrypsin Deficiency Combined with Increased Bacterial Loads on Chronic Obstructive Pulmonary Disease Pharmacotherapy: A Controlled Prospective Study

Sahitya Uppada and G. Srujana

Department of Pharmacy Practice, Hindu College of Pharmacy, Gunturu – 520010, Andhra Pradesh, India
sahityauppada@gmail.com

Abstract:

Chronic obstructive pulmonary disease (COPD) is caused by a1-antitrypsin deficiency (AATD) genetic susceptibility and exacerbated by infection. The current pilot study aimed at studying the combined effect of AATD and bacterial loads on the efficacy of COPD conventional pharmacotherapy. Fifty-nine subjects (29 controls and 30 COPD patients) were tested for genetic AATD and respiratory function. The bacterial loads were determined to the patients' group who were then given a long acting beta-agonist and corticosteroid inhaler for 6 months. Nineteen percent of the studied group were Pi*MZ (heterozygote deficiency variant), Pi*S (5%) (milder deficiency variant), Pi*ZZ (10%) (The most common deficiency variant), and Pi*Mmalton (2%) (Very rare deficiency variant). The patients' sputum contained from 0 to 8 _ 108 CFU/mL pathogenic bacteria. The forced vital capacity (FVC6) values of the AAT non-deficient group significantly improved after 3 and 6 months. Patients lacking AATD and pathogenic bacteria showed significant improvement in forced expiratory volume (FEV1), FEV1/FVC6, FVC6, and 6 min walk distance (6MWD) after 6 months. However, patients with AATD and pathogenic

bacteria showed only significant improvement in FEV1 and FEV1/FVC6. The findings of this study highlight the role of the combined AATD and pathogenic bacterial loads on the efficacy of COPD treatment.

Keywords: Alpha-1-Anti-Trypsin deficiency, Chronic Obstructive Pulmonary Disease, Bacteria, Genotyping, Pharmacotherapy.

D-60

Haematinic Evaluation of Fruits of *Opuntia Elatior* Mill. on Mercuric Chloride Induced Anemia in Rats

Sanjay P. Chauhan and Amit Sharma

Faculty of Pharmacy, Dharmsinh Desai University, Nadiad - 387001, Gujarat, India
amits3646@gmail.com

Abstract:

The fruits of *Opuntia elatior* Mill. (Family: Cactaceae) is known as prickly pear and widely used in several indigenous systems of medicine for the treatment of various ailments, *viz.* Anemia, asthma, inflammatory disorders, and diabetes. The objective of the present work is to screen phytochemical compositions and evaluation hematinic activity of fruits of *Opuntia elatior* Mill. The hematinic activity of an orally administered fruit juice (5, 10 and 15 ml/kg) was studied on mercuric chloride (HgCl2) -induced anemic rats. Phytochemical analysis signifies the presence of betacyanin as an active principle which was confirmed by spectrophotometric, HPLC and LC-MS techniques. The total betacyanin content (47.10 mg/100 ml) equivalent to betanin obtained from the fruits of *O. elatior* Mill. was higher compared to *O. ficus-indica* and *O. undulata* Griff. While lower compared to *O. stricta* Haw. Mercuric chloride altered the hematological parameters by hemolysis characterized by decrease in Hb content, total RBC counts and PCV ($p < 0.001$) on day 30. Fruit juice at the dose of 10 ml/kg and 15 ml/kg showed a good percentage of recovering in hemoglobin, 32.99 % and 38.18 %, respectively, which was higher than standard treated group (29.8 %) indicating the correction of anemia induced by mercuric chloride after 30 days treatment. The speedy and progressive recovery of anemia in the treatment of prickly pear may be due to increased erythropoiesis and/or antioxidant property of betacyanin.

Keywords: Prickly pear, Opuntia, Haematinic, Mercuric chloride.

D-61

Hematinic Effect of Fruits of Opuntia elatior Mill. on Phenyl Hydrazine-induced Anemia in Rats

Sanjay P. Chauhan and Yatharth Palherkar

Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Dharmsinh Desai University, Nadiad - 387001, Gujarat, India
yatharthap@gmail.com

Abstract:

The fruits of *Opuntia elatior* Mill. are known as prickly pear and folkloric use as hematinic, anti-inflammatory and antiasthmatic action. Previously, the fruit juice of prickly pear was evaluated in reversed anemia induced by HgCl2 in a dose dependent manner and present study revealed about its effect in acute hemolytic anemia. To evaluate the hematinic activity of fruits of *Opuntia elatior* Mill. An orally administered fruit juice was studied on phenyl hydrazine (PHZ) induced anemic rats. The hematological parameters such as hemoglobin (Hb) content, red blood cell (RBC), packed cell volume (PCV), and reticulocyte count were analyzed as indices of anemia. PHZ altered the hematological parameters by hemolysis characterized by a decrease in Hb content, total RBC counts and PCV ($P < 0.001$) on day 3. The Hb content (g%) was significantly increased ($P < 0.05$) at day 7 in 10 and 15 ml/kg fruit juice treated rats, which was a good improvement compared to the standard. The speedy and progressive recovery of anemic rats responding to treatment of the *O. elatior* Mill. fruits may be due to increased erythropoiesis and/or antioxidant property of betacyanin.

Keywords: Hematinic, *Opuntia*, phenyl hydrazine, *Prickly pear.*

D-62

Inhibition of Cereblon by Fenofibrate Ameliorates Alcoholic Liver Disease by Enhancing AMPK

Aashrit Naraparaju and Sahitya Uppada

Nimra College of Pharmacy, Ibrahimpatnam, Vijayawada - 520008, Andhra Pradesh, India
naashrit36@gmail.com

Abstract:

Alcohol consumption exacerbates alcoholic liver disease by attenuating the activity of AMP-activated protein kinase (AMPK). AMPK is activated by fenofibrate, a peroxisome proliferator-activated receptor α (PPARα) agonist, and inhibited

by direct interaction with cereblon (CRBN), a component of an E3 ubiquitin ligase complex. Based on these preliminary findings, we investigated that CRBN would be up-regulated in the liver by alcohol consumption and that CRBN deficiency would ameliorate hepatic steatosis and pro-inflammatory responses in alcohol-fed mice by increasing AMPK activity. Wild-type, CRBN and PPARα null mice were fed an alcoholcontaining liquid diet and administered with fenofibrate. Gene expression profiles and metabolic changes were measured in the liver and blood of these mice. Expression of CRBN, cytochrome P450 2E1 (CYP2E1), lipogenic genes, pro-inflammatory cytokines, serum alanine aminotransferase (ALT), and aspartate aminotransferase (AST) were increased in the Lieber–DeCarli alcohol-challenged mice. Fenofibrate attenuated the induction of CRBN and reduced hepatic steatosis and pro-inflammatory markers in these mice. Ablation of the gene encoding CRBN produced the same effect as fenofibrate. The increase in CRBN gene expression by alcohol and the reduction of CRBN expression by fenofibrate were negated in PPARα null mice. Fenofibrate increased the recruitment of PPARα on CRBN gene promoter in WT mice but not in PPARα null mice. Silencing of AMPK prevented the beneficial effects of fenofibrate. These results demonstrate that activation of PPARα by fenofibrate alleviates alcohol-induced hepatic steatosis and inflammation by reducing the inhibition of AMPK by CRBN. CRBN is a potential therapeutic target for the alcoholic liver disease.

Keywords: Cytokine, Gene Expression, Inflammation, PPAR-alpha, Steatosis.

D-63

Prescribing Pattern of Proton Pump Inhibitors in a Tertiary Care Teaching Hospital

Nair Aparna, Singh Pratima, Singh Nitesh and Nathiya Deepak

Department of Pharmacy Practice, NIMS Institute of Pharmacy, NIMS University,
Jaipur, Rajasthan, India, Aparnanivas, Kappil East, Krishnapuram P O, Kayamkulam Kerala - 690533
aparna251195@gmail.com

Abstract:

Proton Pump Inhibitors (PPIs) remains the leading drug of choice for upper Gastro intestinal disorders, including peptic ulcer disease, gastro-esophageal reflux disease, NSAID-induced ulcer prophylaxis, eradication of Helicobacter pylori and hyper secretory disorders. Long term use of proton pump inhibitors can lead to electrolyte imbalance, fractures, insomnia, dizziness etc. The study was aimed at assessment of the prescribing pattern of Proton pump inhibitors as well as to assess the therapeutic appropriateness of proton pump inhibitors use with respect to standard guidelines. A retrospective study was conducted in NIMS tertiary care teaching hospital. Among 280 randomly selected patients 118 were prescribed proton pump inhibitors of which 68(57.62%) were male and 50(42.37%) were female. Maximum number of patients (38) was in the age group of 40-60 years with 24 males and 14 female. Pantoprazole was prescribed in 107(90.67%) cases whereas omeprazole was prescribed in the rest of the 11(9.32%) cases. While majority of cases the use of proton pump inhibitors was either with sufficient evidence or for ulcer prophylaxis, drug usage without any apparent indication was observed in a small percent of cases. The study highlighted the need for more strict monitoring of PPI prescription so as to reduce its associated risks, drug interactions and healthcare costs. The clinical pharmacist could confine to identification of any deficiencies in pattern of prescribing and help to solve them.

Keywords: proton pump inhibitors, therapeutic appropriateness, prescribing pattern.

D-64

An Acute Oral Toxicity Study of Extract from Green Husk of *Juglans regia* in Wistar Rats

Bhagat Singh Jaiswal and Mukul Tailang

SOS in Pharmaceutical Sciences, Jiwaji University, Gwalior - 474011, Madhya Pradesh, India
bhagat_jaiswal@yahoo.com

Abstract:

Walnut is the most widespread tree nut in the world. It belongs to Juglandaceae family and has the scientific name *Juglans regia* (*J. regia*). The tree is commonly called as English walnut or common walnut. The array of human health benefits, derived from walnut is primarily due to the plentiful presence of phytoconstituents such as flavonoids, carotenoids, alkaloids and much more polyphenolic. The present study has been undertaken to study the lethality, moribund and safe use of the hydroalcoholic extract from the green husk of *J. regia* accordingly to determine the approximate LD50, to establish the safety of hydroalcoholic extract from the green husk of *J. regia* in Wistar Rats. The acute oral toxicity studies were carried out based on OECD guidelines 423 and fixed dosage studies was adopted where the limit dose is 2000 mg/kg body weight of test animal. The animals were orally administered a single dose of 5, 50, 300, 2000 mg/kg body weight. Signs and symptoms of toxicity and

mortality were noted after 1, 4 and 24h of administration of the extract for 14 days. The highest dose administered (2000 mg/kg body weight) did not exhibit any behavioral, neurological and autonomic alteration in the test animals. These results indicate the safety of the oral administration of the hydroalcoholic extract from the green husk of *J. regia*.

Keywords: *Juglans regia*, **green husk, OECD guidelines 423, acute toxicity.**

D-65

Evaluation of Toxicity profile, Phytochemical Constituents and Safety Parameters of a Proprietary Polyherbal Formulation - Liverem

Jayachandra Kuncha, P. Thirugnanasambantham and N. Narayanan

Department of Biotechnology, Periyar Maniammai University, Thanjavur - 613403,
Tamil Nadu, India
jayachandrak_rs@pmu.edu

Abstract:

Indian traditional system of medicine has long heritage in the use of medicinal plants as therapeutic agents to treat variety of diseases. Even though it has great therapeutic success, due to lack of evidence based documentation wonderful formulations are unacceptable in the treatment modalities. The aim of this study is to evaluate toxicity profile, screen the phytochemical constituents and safety parameters such as microbial load, pesticide residues, heavy metals and Aflatoxins by using appropriate protocol specified in WHO, AYUSH, (API and SPI) guidelines. According to our results acute toxicity study (OECD 423) upto 2000 mg/kg body weight did not showed any mortality or signs of acute toxicity in rats tested during the observation period. In sub-acute toxicity study (OECD 407) high, mid and low doses (400, 200 and 100 mg/kg body weight) did not showed any treatment related abnormalities in terms of hematological, biochemical parameters and histopathology. In GC-MS screening totally 19 compounds were identified and safety parameters such as microbial load, heavy metals are found within the limits, pesticide residues and aflatoxins are found below detectable limits. The results indicate safety and quality of selected polyherbal formulation (Liverem). Further, *Invivo* alcohol induced hepatotoxicity study is in progress.

Keywords: Toxicity profile, Liverem, Phytochemical screening, Safety parameters.

D-66

Evaluation of Predisposing Factors Associated With Suspected Adverse Drug Reactions of Hospitalized Patients

Manoj Kumar Mudigubba, Saurabh Dahiya and Yogananda Rajashekarachari

Department of Pharmacy Practice[1], SJM College of Pharmacy, Chitradurga - 577501, Karnataka, India
manojkumar.health@gmail.com

Abstract:

Purpose: Aim of this research is to study the incidence and to evaluate the risk factors of suspected adverse drug reactions developed in the hospitalized patients of various departments and to assess the causality & severity of adverse drug reactions (ADRs). **Methods:** It was a retrospective prospective study conducted in a tertiary care hospital for a period of two year two months, with a specific predefined criterion. A total of 254 subjects with ADRs were identified during the period of study for which 1:1 ratio of subjects with non-ADRs were taken. Subjects of all age groups and either sex were enrolled. Multiple logistic regression analysis was performed in order to find the association of risk factors for adverse drug reactions between the cases and controls. Risk factors included subjects' age, gender, polypharmacy, comorbidity, intercurrent diseases and concurrent interactive drugs. **Results:** The incidence of suspected adverse drug reactions in hospitalized patients was13% (254/1952, 95%CI). Male sex had high risk of adverse drug reactions (OR=1.209; 95%CI). Elderly population with multi drug therapy had developed higher rate of ADRs. Cephalosporins 27.6%, fluroquinolones 15.5%, penicillamines 12.1%, anti-hypertensives 8.7%, NSAIDs 8.3% were more frequently implicated. Risk factors for suspected ADRs were: age (more than 60 years) (OR=0.623: 95% CI), polypharmacy (OR=0.13; 95% CI), comorbidity (OR=0.192; 95% CI), intercurrent diseases (OR=0.33; 95% CI). **Conclusion:** Male gender was at higher risk of adverse drug reactions. Elderly population was the vulnerable age group for ADRs. Multi drug therapy and comorbidity resulted in higher risk of ADRs in elderly population. Higher rate of suspected ADRs were probable and very less severe.

Keywords: Adverse drug reaction, Age, Comorbidity, Polypharmacy, Risk factor.

D-67

Review on Immunetherapy in Alzheimer's

Disease

Dipal Jitenkumar Patel

Parul Institute of Pharmacy and Research, Parul University, P.O. limda, T.a- Waghodia - 391760, Vadodara, Gujarat, India
dpalpatel770@gmail.com

Abstract:

Alzheimer is a type of dementia that destroy memory and other mental functions. It develops slowly and get worse overtime. Amyloid-β proteins form plaques of Alzheimer's disease. The antibody is demonstrating early success after a year of testing in clinical trials. Antibody treatment was associated with an unusually striking and progressive removal of existing plaques. Previous immunotherapies shown relatively modest plaque clearing or maybe reversing a little bit of amyloid deposition. Sufficient antibody enters into brain and bind to the amyloid to trigger phagocyte action, the injected antibody is then digested or exported. Immunetherapy having advantages, but also having disadvantages like hypersensitivity reactions and autoimmune diseases. Immunetherapy also having hurdles like crossing Blood-brain barrier and removing amyloid after neurons are lost has not been effective to current review. To overweigh the risk and hurdles of immunetherapy over benefits we need to establish immunetherapy which is more promising in Alzheimer's disease.

Keywords: Immunetherapy, Alzheimer's disease, antibody, β-amyloid, autoimmune diseases.

D-68

Mesoporous Material: A New Drug Carrier

Jaysukh Palaliya, Rinkal Vasoya and Nasir Vadia

Department of Pharmaceutical Sciences, Saurashtra University, Rajkot - 360005, Gujarat, India
jaypalaliya@gmail.com

Abstract:

Mesoporous material is a material containing pores with diameters between 2 and 50 nm. Porous materials are classified into several kinds by their size. According to IUPAC, microporous materials have pore diameter of less than 2 nm and macroporous materials have pore diameters of greater than 50 nm; the mesoporous category thus lies in the middle. Typical mesoporous materials include some kinds of silica and alumina that have similar-sized fine mesopores. Mesoporous oxides of niobium, tantalum, titanium, zirconium, cerium and tin have also been reported. According to the IUPAC, a mesoporous material can be dis-ordered or ordered in a mesostructure. A procedure for producing mesoporous materials (silica) was patented around 1970. It went almost unnoticed and as reproduced in 1997.Mesoporous silica nanoparticles (MSNs) were independently synthesized in 1990 by researchers in Japan. They were later produced also at Mobil Corporation laboratories and named Mobil Crystalline Materials, or MCM-41.

Keywords: Mesoporous material, mesostructure, mesoporous silica nanoparticles.

D-69

Cough Suppressant Activity of Ethanolic Leaf Extract of *Cymbopogon citratus* against Citric Acid Induced Cough in Guinea Pigs

Pranav Ragavendra S, Duraisami R, Haja Sherief S and Sengottuvelu S

Department of Pharmacology, Nandha College of Pharmacy, Erode- 638052, Tamil Nadu, India
karunambigaishankar.tup@gmail.com

Abstract:

Cough is a reflex of pulmonary irritant receptor, found in the epithelium of the respiratory tract, which are sensitive to both chemical and mechanical stimuli. Cough is a useful physiological mechanism that serves to clear the respiratory passages of foreign material and excess secretions and should not be suppressed indiscriminately. Anti-tussive drugs are the most reliving class for cough suppressants. Codeine is an effective anti-tussive, but its has some undesirable side effects like constipation, drowsiness, respiratory depression, dependence on chronic use etc., so its necessary to seek an safe alternative from herbal source. *Cymbopogon citratus* belonging to the family Gramineae is an herb worldwide known as lemongrass. Anti-tussive activity of ethanolic leaf extract of *Cymbopogon citrates* (100 & 200mg/kg) was studied by inducing cough by citric acid in guinea pigs. Number of bouts in 5 minutes and percentage cough inhibition were measured. Codeine Phosphate was used as reference control. Both the doses of *Cymbopogon citrates* were significantly reduced the bouts in dose dependent manner and the percentage cough inhibition was increased which comparable as that of the reference control codeine phosphate. From the result it was concluded that the ethanolic leaf extract of *Cymbopogon citrates* exhibited anti-tussive activity against citric acid induced cough in guinea pigs.

Keywords: *Cymbopogon citrates*, **Cough Suppressants, Codeine Phosphate and Cough.**

D-70

Effect of *Avena Sativa* (Oats) on Fluoride Induced Infertility in Male Albino Rats

Atreyee Ganguly, Ch. Naga Kavitha, Vara Prasad Saka

[1]Department of Pharmacology, GITAM Institute of Pharmacy, GITAM University, Rushikonda, Visakhapatnam - 530045, Andhra Pradesh, India
atreyee.ganguly01@gmail.com

Abstract:

Infertility is one of the foremost health problems in modern days and it has become a source of global concern. The total sperm count, motile sperm count, and normal morphologic features have been reported as the indices of fertility in men. Furthermost, infertile men are stated to have a low sperm concentration and decreased motility as the cause. Fluoride is one of the potent toxicants to which humans are exposed. Fluoride interferes with the structural and functional integrity of testis, internal milieu of epididymis, vas deference and also affected the metabolism and morphology of spermatozoa of mice, rats and rabbits and reduces fertility. Oat (*Avena sativa* L.) family Graminae, is known to possess antispasmodic, antitumor, cyanogenetic, demulcent, diuretic, neurotonic activities. The objective of the present study was to explore the effect of hydroalcoholic extract of *Avena sativa L* on fluoride induced infertility on male albino rats. Male Wister albino rats were divided into 6 groups (n= 6). Group 1 served as control and received normal saline. Infertility was induced by administering Sodium fluoride (NaF) at a dose of 10 mg/kg body weight (*p.o.*) for 28 days to all the groups of animals except group 1 & 3. Only oat extract was administered to group 3, dissolved in normal saline through oral route at a dose of 400 mg/kg. Oat extract at doses of 200 and 400 mg/kg was administered to the test groups along with NaF. Testosterone propionate (0.5 mg/kg body weight s.c.ly) was used as a reference standard. Blood sample was collected by cardiac puncture, for analysis of hormones like serum testosterone, LH, and FSH. On 28th day, the animals in all groups were sacrificed after 24 h of last dose. The testes were removed and weighed and the cauda epididymis was transacted for sperm analysis for determination of sperm count, sperm viability, sperm motility and sperm morphology. Co-administration of oat extract significantly reduced the percentage of abnormality in sperm morphology and increased the percentage of sperm count, sperm motility and sperm viability in fluoride toxic rats suggesting its protective effect in fluoride induced infertility.

Keywords: Infertility, *Avena sativa,* **Testosterone propionate, sperm motility, sperm count.**

D-71

Hepatoprotective Efficacy of *Lannea coromandelica* Against Paracetamol Treated Experimental Rats-An In Vivo Study

Tekeshwar Kumar

M. J. College, Junwani Road, Kohka, Bhilai - 490023, Chhattisgarh, India
tekeshwarverma@gmail.com

Abstract:

Liver disorders are one of the widespread current problems affects on the human being. In the current study, paracetamol was selected to induce hepato-toxicity in rats. *Lannea coromandelica* (*L. coromandelica*) leaf was extracted with methanol and ethyl acetate (100, 200 and 400 mg/kg body weight, p.o.), and is examined for the paracetamol (500 mg/kg bw) induced hepato-toxicity. Their activity was compared with standard hepatic drug silymarin (100 mg/kg b.w.) for 10 days. The hepatoprotective effect of different treatments was assessed by evaluating the changes in functional parameters like alanine amino transferase (ALT), aspartate amino transferase (AST), alkaline phosphatase (ALP), serum bilirubin (SB), cholesterol and serum albumin (SA) in all groups of animals. From this study, it can be concluded that the both of extract of *L. coromandelica* possess anti-hepatotoxic action against paracetamol toxicity. Ethyl acetate extract showed the most significantly decrease in the liver enzymes.

Keywords: Hepatoprotective, *L. coromandelica*, **paracetamol, silymarin.**

D-72

Anti-Ulcer Potential of Ethanolic Flower Extract of *Couroupita guianensis* Aubl in Wistar Rats

K.S. Shaik Mohamad Shihab, V. Lalitha, S. Sengottuvelu and T. Sivakumar

Department of Pharmacology, Nandha College of Pharmacy, Erode - 638052, Tamil Nadu, India
chickoo.shihab@gmail.com

Abstract:

The ethanolic flower extract of Couroupita guianensis is a herbal preparation that has been suggested as useful in the treatment of gastrointestinal disorders. In the present

study this drug was tested for its antiulcerogenic effect. Oral pretreatment with flower extract (200 and 400mg/kg body wt/day) for 5 consective days protected the gastric mucosa against the damage induced by indomethacin (20 mg/kg body wt). Pyloric ligation was carried out in each animal. Four hours later, the animals were sacrificed and their stomachs were removed. The gastric juice and gastric tissues were collected for the assessment of ulcer index (UI), free acidity, pH and gastric volume. The flower extract 200mg/kg and 400mg/kg showed 64% and 68% gastroprotective activity compared with standard ranitidine (50mg/kg) showed 72%. The volume and acidity of the gastric juice showed significant ($P<0.01$) reduction in the pretreated rats. *Couroupita guianensis* was able to decrease the acidity and to increase the mucosal defence in the gastric areas, thereby justifying its use as an antiulcerogenic agent.

Keywords: Antiulcerogenic, Indomethacin and Gastroprotective.

D-73

Evaluation of Analgesic and Anti-Inflammatory Activities of *Sida cordata* plant Extract on Experimental Animal Models

Kavipriyaa S, Srinivasan K and Sivakumar T
Department of Pharmaceutical Chemistry, Nandha College of Pharmacy,
Perundurai Main Road, Erode – 638052, Tamil Nadu, India
sriudha@gmail.com

Abstract:

The aim of our present study is to evaluate analgesic and anti-inflammatory activities of **ethanolic extract** of *Sida cordata* to validate ethnomedicinal claims. Analgesic activity was done by hot plate and acetic acid induced writhing model and the anti-inflammatory activity was studied by carrageenan induced paw edema. The extract was administered orally at the doses of 100 and 200 mg/kg. The extract of *Sida cordata* was compared with that of standard drug, Indomethacin and it was the significant anti-inflammatory activity in dose dependent manner and the percentage of inhibition at both the doses after 30 min and 360 min was 32.98%, 67.61% and 38.91%, 68.82% respectively. The results obtained suggest that the ethanolic extract of *Sida cordata* has marked analgesic and anti-inflammatory activities in experimental animal models and this strappingly supports the ethnopharmacological applications of the plant for the target activity.

Keywords: *Sida cordata,* **analgesic, anti-inflammatory, carrageenan, indomethacin.**

D-74

Cross-Sectional Study of Trend in ICSR Reporting through PvPI across India

Shray Bablani and Pradeep M. Muragundi
Department of Pharmacy Management, Manipal College of Pharmaceutical Sciences, Manipal University, Manipal - 576104, Karnataka, India
shray.bablani@gmail.com

Abstract:

The Pharmacovigilance Program of India (PvPI) was launched in July 2010 by CDSCO in collaboration with the Department of Pharmacology at AIIMS, New Delhi. Under PvPI, Individual Case Study Reports (ICSRs) are reported through VigiFlow which is maintained by WHO. The objective of the present study is to check the trend of ADR reporting in the different zones across India. In the current study, cross-sectional study of the PvPI monthly reports was conducted. Data from the months of October-2016 to July-2017 was collected from the PvPI database and was classified into 5 zones, namely, North Zone, Central Zone, West Zone, South Zone, East Zone. The results were presented descriptively using bar graphs to show the current trend in the monthly PvPI reports of ICSRs. From the reports, it was evident that there was under-reporting of ICSRs in some zones. The mean of the total number of ICSRs reported from October-2016 to July-2017 was found out to be 117.5 under Revised National Tuberculosis Control Program. There is a need to study the reasons for under-reporting to get more clarity.

Keywords: PvPI, ICSRs, ADR, RNTCP, Pharmacovigilance.

D-75

Pharmacological Evaluation of Ethyl 5-Acetyl-4-Methyl-2-(Tosylamino) Thiophene-3-Carboxylate for Its Cytotoxic Activity

Jinumol K.S, Winson Sam and Girish Kumar K
College of Pharmaceutical Sciences, Govt. Medical College, Thiruvananthapuram - 683110, Kerala, India
jinumolks13@gmail.com

Abstract:

In the present study, Ethyl 5-acetyl-4-methyl-2-

(tosylamino)thiophene-3-carboxylate was synthesized and evaluated for cytotoxic activity by both *in vitro* and *in vivo* methods. The *in vitro* cytotoxic activity was evaluated by Brine Shrimp Lethality Assay and MTT Assay. The newly synthesized derivative showed significant activity in both these methods. In Brine Shrimp Lethality Assay the Lethality Concentration (LC_{50}) of newly synthesized derivative was found to be 7.07 µg/mL. Potassium dichromate was used as the standard. The MTT assay was carried out in Breast cancer cell lines (MCF-7), Human Colon Cancer cell lines (HCT-116) and Human Cervical cancer cell lines (HeLa). The test derivative shows dose dependent cytotoxic activity towards these three cancer cell lines. The IC50 value of thiophene derivative was found to be less than 25µg/mL for MCF-7 and HeLa cell lines. The *in vivo* cytotoxic activity was confirmed by Hollow Fibre Assay using MCF-7 cells. Different concentrations of test derivative, 200mg/kg, 400mg/kg, 800mg/kg body weight were given orally as a suspension and Doxorubicin was used as standard drug. Reduction in cell growth with increase in concentration of test derivative shows dose dependent effect of newly synthesized thiophene derivative. Maximum activity of 51% was shows by higher dose (800mg/kg) where as the standard Doxorubicin shows 58%. Thus, newly synthesized thiophene derivative possess better cytotoxic activity and this may be a drug in future for anticancer therapy.

Keywords: Brine Shrimp Lethality Assay, MTT Assay, Hollow Fibre Assay.

D-76

A Study on Prescribing Pattern in Geriatric Inpatients at Tertiary Care Hospital

Nataraj GR, Bharathi DR and Nagesh Raju G

Department of Pharmacology, SJM College of Pharmacy, Chitradurga - 577502, Karnataka, India
itsnattu007@gmail.com

Abstract:

Advances in health care system has increased the life expectancy and hence increased the geriatric population. The high prevalence of geriatric morbidity has led to increased drug usage. Prescribing pattern study will provide an insight to existing drug usage and ensures the rationality of drug therapy. A prospective observational study was carried out for a period of three years from JUN-2014 to MAY-2017 with an objective to study prescribing pattern among geriatric inpatients (≥65 years). The necessary information of geriatric inpatients from different departments was collected in a pre-structured case record form. A total number of 405 geriatric inpatients were enrolled during the study period. Young older patients (79.75 %) and male subjects (56.30%) were predominant. Among the diseases diagnosed cardiovascular diseases (38.27%) were more prevelant (MI, CCF, Hypertension, IHD, Angina Pectoris, and Hypotension). Out of 405 prescriptions 2489 formulations, with 330 active drugs were prescribed. Use of Parenterals (55.96%) was more among dosage forms. The average number of drugs per prescription was 6.15. About 56.54% patients were prescribed with ≥ 6 medications (polypharmacy). Drugs acting on gastrointestinal (23.91%) and antimicrobial (21.41%) were commonly prescribed drugs. The study reveals the need for intellect use of antiulcer, antiemetic and antimicrobial drugs in order to establish more rational therapy.

Key words: Prescribing pattern, Geriatric inpatients, Prescription, Polypharmacy.

D-77

Nano Engineering Cellular Environments

G. Arun, A. Sushmita and Ch. Malathi Suvarna

Sy. No: 551, Shangri-la, Kothapet (village), Shivampet (Mandal), Medak, Telangana -502220, India
gudaarun0223@gmail.com

Abstract:

A nanotechnology engineer seeks to learn new things that can change the face of health science technology and the environment on a molecular level they test for pollutants create powders to enrich our foods and medicines and study the smallest fragments of DNA .Cellular environments Biological environments present a very crowded highly complex environment in which proteins and nucleic acids have to maintain structure and carry out their function. If and how exactly such an environment effects bio-molecules compared to dilute solvent or crystal conditions under which bio-molecules are often studied remains largely unclear. The reduction of space leads to the well-known volume exclusion effect that generally favors more compact states under crowded conditions. But resent experiments and computer simulation suggest that non-specific protein –protein interactions, Cell adhesion to nano digital surfaces: engineering of the cellular micro-environments has become a valuable means to guide cellular activities such as spreading motility differentiationProliferation or apoptosis. This chapter summarizes recent approaches to surface patterning such as topography and chemical patterning from the micrometer to the nanometer scale and illustrates their application to cellular studies. Particular attention is devoted to nanolithography with self-assembled diblock copolymer

micelles that are biofunctionalized with peptide ligands-a method that offers unsurpassed spatial resolution for the positioning of signaling molecules over extended surface areas. Such interfaces are defined here as "nano-digital surfaces" since they enable the counting of individual signaling complexes separated by a biologically inert background. The approach enables the testing of cellular responses to individual signaling molecules as well as their spatial ordering.

D-78

Anti-diabetic Activity of Bio-Conjugated Gold Nanoparticles

Subrat Kumar Sahoo, Nabanita Patra and Anindita Behera

Department of Pharmaceutical Analysis and Quality Assurance, School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar - 751003, Odisha, India
subratsahoo955@gmail.com

Abstract:

Most of the synthetic drug used for the treatment of diabetes mellitus are possess pronounced side effects like hepatotoxicity, drug resistance, kidney complications and flatulence. Hence, alternative agent for lowering the blood sugar are eagerly needed. In this work, the gold nanoparticles were synthesized (AuNP) using aqueous leaves extract of *Saraca asoca*. Formation of AuNP was confirmed through VU-Visible spectrophotometer and SEM analysis. Prepared nanoparticles are mono-disperse in nature with particles size 23 ± 5nm, determined from SEM analysis. For the evaluation of anti-diabetic activity α- amylase inhibition assay model was used because inhibition of α- amylase is one of the anti-diabetic therapeutic approach for the management of diabetes. Results showed that bio-conjugated AuNP inhibit α- amylase activity with IC50 value 1.5mM. CAM assay confirm the biocompatibility of AuNP.

Keywords: Green Synthesis, Gold nanoparticles, Anti-diabetic activity and CAM assay.

D-79

Evaluation of Wound Healing Activity of Ethanolic Leaf Extract of *Sesbania grandiflora*

Rajeswari Jagarlamudi and Naga Swathi Sree Kavuri

Chalapathi Institute of Pharmaceutical Sciences, Lam, Guntur - 522034, Andhra Pradesh, India
jagarlamudi999rajeswari@gmail.com

Abstract:

The present study was aimed at investigating the wound healing effect of methanolic extract of *Sesbania grandiflora* using excision wound model. *Sesbania grandiflora Linn* belonging to family *Leguminosae* is well known medicinal plant in various region of India. Leaf extract used in various conditions like cancer, night blindness and in treatment of ulcer, hepatoprotective, anti convulsive, antioxidant activity. Present study is concern mainly with evaluation of wound healing activity of ethanolic extract of leaves in rabbits using excision wound model in the form of ointment using concentrations (2 and 4 % w/w ointment) of leaf extract in simple ointment base. Both concentration of ethanolic extract showed significant response in the wound type tested when compared with control group. Nitrofurazone ointment (0.2%w/w) was used as standard drug.

Keywords: Wound healing, *Sesbania grandiflora*, ethanolic extract, Nitrofurazone.

D-80

Sertraline and Venlafaxine Improves Motor Performance and Neurobehavioral Deficit in Quinolinic Acid Induced Huntington's Like Symptoms in Rats: Possible Neurotransmitters Modulation

Ramit Sharma, Jaskamal Singh Gill, Puneet Kumar and Rahul Deshmukh

Department of Pharmacology, ISF College of Pharmacy G.T Road, Moga - 142001, Punjab, India
ramitsharma1993@gmail.com

Abstract:

Huntington Disease is autosomal, fatal and progressive neurodegenerative disorder, (degeneration of gabaergic neuron in staritum) and characterised by hyperkinetic movements and behaviour changes. Clinically available drugs offer only symptomatic relief Emerging studies have indicated that antidepressants improve motor performance, restore neurotransmitters level, ameliorates striatal atrophy, increases BDNF level and may enhance neurogenesis. Therefore, we investigated sertraline and venlafaxine, clinically available drugs for depression with numerous neuroprotective properties, for their beneficial effects, if any, in quinolinic acid induced Huntington's like symptoms in rats. Rats were administered QA (200 nmol/2µl saline) intrastriatal bilaterally on 0 day. Sertraline and venlafaxine (10 and 20 mg/kg, po) each were administered

for 21 days once a day. Motor performance was assessed using rotarod test, grip strength test, narrow beam walk test on weekly basis. On day 22, animals were sacrificed and rat striatum was isolated for biochemical (LPO, GSH and Nitrite), neuroinflammation (TNF-α, IL-1β and IL-6) and neurochemical analysis (GABA, glutamate, nor-epinephrine, dopamine, serotonin, DOPAC, HVA and 5-HIAA). Quinolinic acid treatment significantly altered body weight, motor performance, oxidative defense (increased LPO, nitrite and decreased GSH), pro-inflammatory cytokines levels (TNF-α, IL-6 and IL-1β), neurochemical level (GABA, glutamate, nor-epinephrine, dopamine, serotonin, HVA, DOPAC, 5-HIAA). Sertraline and venlafaxine at selected doses significantly attenuated QA induced alterations in striatum. The present study suggests that modulation of monoamines level, normalization of GABA and glutamatergic signaling, anti-oxidant and anti-inflammatory properties could underlie the neuroprotective effect of sertraline and venlafaxine in QA induced Huntington's like symptoms.

Keywords: Antidepressants, Neurochemical, Huntington's disease, Oxidative stress.

D-81

Development of Formulation for Shikonin for Selective Inhibition of Inflammatory Pathway in Diabetic Wound Healing

Kulkarni Radha Balkrishna Manisha

BITS Pilani Hyderabad Campus - 500078, Andhra Pradesh, India
kulradha17@gmail.com

Abstract:

Impaired wound healing is a serious complication in diabetes which is said to arise from persistent inflammatory response as the wound conditioned medium activates and exhibits sustained inflammasome activity (cytosolic proteins which up-regulate the inflammatory response.). Shikonin, a naphthoquinone obtained from ***Lithospermum erythrorhizon*** (purple gromwell), a Chinese herb is reported to have anti-inflammatory activity by suppression of inflammasomes and proinflammatory cytokines such as IL-1β. The main objective of this project was to design an effective topical formulation using Shikonin to screen its anti- inflammatory activity in diabetic mouse model and in RAW cell line 264.7. The gene expression and the protein expression was characterized using techniques such as RT-PCR and Western Blotting and ELIZA. Respectively Collagen is also incorporated in the formulation as it acts as a natural scaffold for the newly formed epithelial cells and aids in tissue regeneration. Formulation was evaluated for pH, rheological behavior, spreadibility and in-vitro drug release.

Keywords: inflammasomes, IL-1β, topical gel, shikonin, diabetic wound healing.

D-83

Assessment of Prevalence of Diabetic Complications in a Tertiary Care Hospital

Abubaker Siddiq and Bharathi DR

Department of Pharmacology, SJM College of Pharmacy, Chitradurga - 577502, Karnataka, India
siddiq.pharma@rediffmail.com

Abstract:

Diabetes is a group of disorders characterized by high glucose levels that cause unique eye, kidney, and nerve complications and an increased risk for cardiovascular disease. These factors contribute to an increased risk of illness and death which places a significant burden on health care system. A prospective observational study was carried out for a period of two years with the aim to determine prevalence of diabetic complications. A total of 400 patients were enrolled in the study with the inclusion criteria of patients with past history of diabetes as well as newly diagnosed cases. The study showed that diabetes is more prevalent in females than males and also found a higher prevalence of the disease among elderly patients. The study revealed the presence of more macrovascular complications like hypertension, IHD, dyslipidaemia and stroke. Adequate metabolic control may help to reduce the risks of complications over the long term. This also improves the quality of life with diabetes and reduces the burden on health care systems.

Keywords: Diabetes, Complications, Prospective, Prevalence.

D-84

Dietary Oils Ameliorate Aluminium Chloride-Induced Memory Deficit in Male Wistar Rats

Ayush Kumar, Samita Rijal, Nilanjan Changdar and Rekha R Shenoy

Department of Pharmacology, Manipal College of Pharmaceutical Sciences, Manipal - 576104, Karnataka, India
ayush.kumar2792@gmail.com

Abstract:

Background: Alzheimer's disease (AD) is a progressive neurodegenerative disorder of the brain and is the most common form of dementia. There is no known cure for AD and need for alternate therapies is warranted. Multiple studies have reported that nutritional or dietary interventions may have beneficiary therapeutic potential. Specifically, high intake of n-3 polyunsaturated fatty acids (PUFA) may reduce the risk for AD. Methods: In this study, we have used Canola oil, Olive oil and Rice Bran oil to study their possible beneficial effects in aluminium chloride ($AlCl_3$)-induced dementia model, since aluminium is a well-known neurotoxic agent. The protective effect of dietary oils in spatial memory of the animals treated with $AlCl_3$ was evaluated using the Morris water maze method. Additionally, brain antioxidant parameters, acetylcholinesterase activity and serum biochemical markers were evaluated at the end of the study. Results: All dietary oils used in the present study showed ameliorative effect on the decline in spatial memory due to AlCl3 treatment. However, among the three oils, Canola oil seems to exert the most protective effect towards $AlCl_3$ induced neuronal damage by improving spatial memory and brain antioxidant status. Discussion: The study highlights the protective effect of dietary oils rich in unsaturated fats against Alzheimer's dementia. The beneficial effect of Canola oil noticed in the study may be attributed to the high content of ω-3 fatty acids present in canola oil, greater than the other two dietary oils used in the study.

Keywords: Alzheimer's disease, n-3 PUFA, ALA, Aluminium Chloride, Canola oil.

D-85

Diminution of Dementia by INK1117-PI3K Inhibitor in ICV-STZ induced Sporadic Alzheimer's Disease Rat Model

Ramesh Alluri, Nafiza Banu and Sravani

Cognitive Science Research Initiative Lab, Dept. of Pharmacology, Vishnu Institute of Pharmaceutical Education and Research, Narsapur, Medak - 502313, Telangana, India
rameshcology@gmail.com

Abstract:

Sporadic Alzheimer's disease is an age-related neurological and psychiatric disorder characterized by impaired energy metabolism. Oxidative stress and neuro-inflammation have been implicated in pathophysiology of sporadic type of dementia. The Intra-cerebroventricular (ICV) administration of streptozotocin induces behavioural and biochemical alterations resembling those in sporadic type of Alzheimer's patients. The current study was intended to investigate the effects of chronic pre-treatment with phosphoinositide 3-kinase inhibitor (PI3K inhibitor) on cognitive dysfunction and oxidative stress markers in intra-cerebroventricular streptozotocin (ICV-STZ) treated albino rats. Chronic treatment with INK1117 orally on a daily basis for a period of 21 days, significantly improved streptozotocin-induced cognitive impairment. Besides, improving cognitive dysfunction, chronic administration of highly selective PI3K inhibitor, reduced elevated nitrite levels, and restored reduced glutathione and superoxide dismutase levels, Lipid peroxidation, total Protein estimation

Keywords: Alzheimer's Disease, INK1117, Intra-cerebroventricular (ICV), Streptozotocin.

D-86

Drug Repurposing: Effect of Glibenclamide on Global Cerebral Ischemia/Reperfusion Injury

Vibhu, Lakhdeep Kaur, R S Ray and Kanwaljit Chopra

University Institute of Pharmaceutical Sciences, Panjab University, Chandigarh - 160015, India
vibhu.kumar99@gmail.com

Abstract:

Objective: To evaluate the neuroprotective effect of Glibenclamide on Bilateral Common Carotid Arteries Occlusion (BCCAO) induced memory deficits in rats. Methodology: Male Wistar Rats were chosen to evaluate the neuroprotective effect of Glibenclamide. Global Cerebral Ischemia (GCI) B was induced in rats using BCCAO for 20 minutes, followed by reperfusion for 24 hours. The progression of disease increased day by day leading to neurodegeneration of hippocampal regions primarily leading to memory deficits. Glibenclamide with varying dose from 0.1 – 5 mg/kg p.o. was given to rats for 15 days comparing with standard treatment of Rivastigmine – 2mg/kg i.p. After treatment behavioural assays were done to assess memory deficits like Morris Water Maze and Novel Object Recognition Test. Biochemical Assays were also performed to assess Oxidative stress like – Superoxide Dismutase, Catalase, Reduced Glutathione. GCI induced hippocampal neuronal cell death was also assesed using Haematoxylin and Eosin staining as well. Results: On comparing results of various treatment doses of Glibenclamide – 0.1, 1, 2.5, 5mg/kg, glibenclamide at 1 mg/kg dose improved memory dysfunction, restored oxidative stress enzyme and decreased hippocampal neuronal cell death. Conclusion: Glibenclamide showed significant improvement in memory after GCI-induced memory deficits The Neuroprotective effects are observed in a narrow therapeutic

window of 1 mg/kg due to dose dependent hypoglycaemia. So this study confers the drug repurposing of Glibenclamide as neuroprotective in GCI induced memory deficits in rats.

D-87

Anti-hemorrhoidal Activity of Ayurvedic Medicine, Piloheal Cream in Rats

Anil T. Pawar, Chinmay D. Deshmukh, Digambar K. Jadhav and Ranganath R. Kulkarni

Department of Pharmacology, MAEER's Maharashtra Institute of Pharmacy, Kothrud, Pune - 411038, Maharashtra, India
anil_pawar31@yahoo.co.in

Abstract:

Piloheal cream is an Ayurvedic proprietary medicine claimed to be effective in the treatment of hemorrhoids. The present work was undertaken to evaluate the antihemorrhoidal activity of Piloheal cream against croton oil-induced hemorrhoids in rats. The hemorrhoids were induced by applying 3% croton oil preparation in the ano-rectal region. Rats were intrarectally administered with Piloheal cream, twice a day for 4 days. Hemorrhoids were assessed by measuring macroscopic parameters such as weight, area of mucosal damage and number of red thrombus of ano-rectal tissue along with histology of the tissue. Croton oil application induced hemorrhoids as indicated by increase in weight, area of mucosal damage and number of red thrombus of ano-rectal tissue along with marked histological damage as compared to normal rats. Treatment with Piloheal prevented the elevation of macroscopic and histological changes. Piloheal treatment showed significant anti-hemorrhoidal activity against croton oil-induced hemorrhoids in rats.

Keywords: Croton oil, Hemorrhoids, Piloheal cream.

D-88

Phytochemical and Pharmacological Activities of Leaves of Medicinal Plant *Tinospora Crispa* (L.)

Satish Kumar Nayak, Bibhuti Bhusana Panigrahi, Prasenjit Mishra and Manas Ranjan Dash

School of Pharmaceutical Sciences, Siksha'O'Anusandhan University, Kalinga Nagar, Ghatikia, Bhubaneswar - 751030, Odisha, India
prasanjitcoolmishra@gmail.com

Abstract:

Phytochemical screening and pharmacological activities of the leaves of *Tinospora crispa L.* Plant has been carried out. The concentrated ethanolic extract of the leaves were used for our study. The crude extract was analysed for the presence of different chemical groups and reducing sugar, gum, alkaloid, steroid and tannins were identified from the extract. The biological interest of these compounds, coupled with the use of this plant in traditional medicine prompted us to check *Tinospora crispa L.* for antioxidant, antimicrobial and analgesic activity study. The antioxidant test was performed and showed antioxidant property and IC50 of the sample was 50 µg/mL. The antimicrobial activity of the ethanolic extract of *Tinospora crispa L.* was carried out by disc diffusion method, which showed antimicrobial activity against *Salmonella typhi*. Moreover, The extract of leaves produced significant writhing inhibition in acetic acid induced writhing in mice at the oral dose of 500 mg/kg body weight ($P<0.05$), which was comparable to the standard drug diclofenac sodium at the dose of 25 mg/kg of body weight.

Keywords: *Tinospora crispa L.*, **antioxidant, antimicrobial, analgesic activity, mice.**

D-89

Pharmacological Evaluation of Leaf of Triumfetta Rhomboidea for Antibacterial Activity

Gabel B.K. and Sarathi Anil

RKDF School of Pharmaceutical Sciences, Bhopal - 495689, Madhya Pradesh, India
bhavgabel23@gmail.com

Abstract:

The present study deals with isolation of the active crude extract of leaves of *Triumfetta rhomboidea* Jacq, preliminary phytochemical screening, and thin layer chromatography, isolation of secondary active marker compounds and screening of pharmacological activity. The extraction of the powdered plant material was done by using petroleum ether (60-80%) and methanol (95 % v/v) with help of Soxhlet apparatus. On the basis of Phytochemical screening and thin layer chromatographic study indicates *Triumfetta rhomboidea* Jacq contains glycosides, flavonoids, steroids and triterpenoids as there active constituents. Antibacterial study was done. Antimicrobial activity was screened by agar well diffusion method. The leaf extracts were tested for antimicrobial activity against and Gram positive bacteria, *Staphylococcus aureus* **(**ITCC® 29213DQ™**)** and Gram negative bacteria *Escherichia coli* **(**ITCC® 25922™**)** were used. Three leaves extracts (Methanol, Ether and Aqueous) were prepared separately at different

concentrations such as 100µg/ml 150µg/ml and 250µg/ml by using dimethyl sulphoxide as solvent (DMSO). Ciprofloxacin (2µg/ml) and fluconazole (10µg/ml) were used as positive control (standard) for bacteria and fungi. DMSO was used as negative control. The present investigation involving *Triumfetta rhomboidea* Jacq also lends credence to the above observations. The leaf extracts showed significant antimicrobial activity against gram positive bacteria as well as fungi. The different plant extracts differ significantly in their activity against tested microorganisms. These differences may be attributed the fact that the occurrence of different antimicrobial compounds with different solvents. The methanol leaf extract of *Triumfetta rhomboidea* Jacq exhibited. The present investigation proved that the *Triumfetta rhomboidea* (Jacq.) showed very Promising result in antimicrobial activity. This plant is very efficient to control all the two strains of bacteria at 250 µg concentration. Remarkable antimicrobial activity was seen with increase in concentration of the extracts. Methanol extract of leaf showed significant antimicrobial activity against the selected microbes (Inhibition zone ranging 11-29 mm). The methanol leaf extract has maximum activity against *Staphylococcus aureus (*25 mm), moderate activity against *Escherichia coli* (2.40 mm), at concentration 400 µg (Table 6). Ether extract of leaf showed significant antimicrobial activity against the selected microbes (Inhibition zone ranging 11-29 mm). The Ether leaf extract has maximum activity against *Staphylococcus aureus (*11 mm), moderate activity against *Escherichia coli* (2.10 mm), at concentration 400 µg/ml. The result of the study shows that *TRIUMFETTA RHOMBOIDEA Jacq* has a significant antibacterial activity, (methanolic extract at a dose of 250 mg /kg) against Gram positive bacteria.

Keywords: *Triumfetta Rhomboidea*, **Agar Well diffusion Method, Ciprofloxacin.**

D-90

β-asarone Restores Hippocampal Neurochemistry and Improve Cognitive Functions in Aβ (1-42) Infused Rats

Sneha Shree, Jitender Bariwal and Rahul Deshmukh

Department of Pharmaceutical sciences, ISF College of Pharmacy, Moga - 142001, Punjab, India
snehashree19@gmail.com

Abstract:

Recently, β-asarone has shown to improve cognitive functions and reduce Aβ (1-42) induced neurotoxicity in rats. However, the mechanisms of cognitive improvement following β-asarone are least investigated. In the present study, we have studied the effect of β-asarone on learning and memory and its interaction with hippocampus neurotransmitters in Aβ (3nm/3µl) infused rats.β-asarone (12.5,25,50mg/kg p.o.) treatment was started one week following Aβ infusion up to 21st day in rats. Learning and memory was assessed using Morris water maze and object recognition task. Biochemically, oxidative stress, mitochondrial enzyme activities and proinflammatory cytokines levels were checked in hippocampal region on day 21st. Neurochemically, levels of monoamine, their metabolites, GABA, Glutamate and AChE activity were also checked in hippocampal tissue. Aβ infusion in rats produced significant learning and memory deficits and increased hippocampal oxidative stress and the levels of proinflammatory cytokines. However , significant increase in AChE activity and decline in the levels of dopamine, serotonin, GABA and norepinephrine with an increase in Glutamate and their metabolite concentration was observed in hippocampal tissue of Aβ infused rats. However, β-asarone treatment significantly attenuated Aβ induced cognitive deficits, oxidative stress and pro-inflammatory cytokine burden in rats. Moreover, β-asarone dose dependently restored hippocampal neurotransmitters levels and AChE activity in Aβ infused rats. Our results demonstrate for the first time, positive effects of β-asarone on hippocampal neurotransmitters. Based on our results it can be concluded that β-asarone may improve cognitive functions by restoring the levels of neurotransmitters and suppressing the activation of oxidative damage and neuroinflammatory events.

Keywords: β-asarone, cognitive function, Aβ, Alzheimer's disease, neurotransmission.

D-91

Investigation of Anti-Ulcer Property of Leaves of *Paederia Foetida* Using Pyrolic Ligated Ulceration Model and Aspirin Induced Ulceration Model in Adult Wistar Albino Rats

Rashmi Sham, Joydeep Samanta, Gautam Kumar Bagchi, Rajanya Roy and Sagar Singh Kang

Department of Pharmaceutical Sciences and Technology, Birla Institute of Technology, Mesra, Ranchi - 835215, Jharkhand, India
shamroshmi@gmail.com

Abstract:

The plant *Paederia foetida* belonging to family Rubiaceae though being used traditionally for long, the mechanism of action behind its beneficial activities are not yet well

established. A wide range of activities namely antidiarrhoeal, anti-inflammatory, antinociceptive have been reported. In the present study, anti-ulcer property of the above-mentioned plant was examined, and results were found in accordance to the speculated activity. Anti-ulcer activity of the leaves of this plant was examined using pyloric ligated ulceration model and aspirin induced ulceration model in adult wistar albino rats were subjected to oral administration of aqueous (200 mg/kg) and methanolic extracts (200 mg/kg) of leaves of *P. foetida*. Phytochemical analysis was done using various phytochemical tests. The ethanolic extracts were able to restore the biochemical levels to normal levels by reducing the volume of gastric acid to a significant extent, when compared with already established reference standard like ranitidine and sucralfate. Ulcer index was also observed to be reduced significantly when subjected to test drug. The results indicate that there is some rationale behind the ethnomedical use of the plant for treating gastric ulcers.

Keywords: Paederia foetida, Rubiaceae, anti-ulcer property, adult wistar albino rats, ranitidine, sucralfate.

D-92

Anti-inflammatory and Anti-granuloma Activity of Lupeol: Roll of Cytokinins and Oxidative Stress

Ushashi Das and Abhisek Pal

School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar - 751003, Orissa, India
ushashidas952@gmail.com

Abstract:

The anti-inflammatory and the anti-granuloma effect of a naturally occurring lupeol, a naturally occurred triterpenoids , was evaluated for its anti-inflammatory activity in the Carrageenin, histamine , egg-albumin induced rat paw oedema models of acute inflammation and the cotton pellet-induced granuloma rat model of chronic inflammation. lupeol at dose of 10 and 50 mg/kg, standard drug diclofenac sodium at 10 mg/kg, or vehicle were administered orally before injection of the pro-inflammatory compound. Furthermore, pro-inflammatory cytokines in rat PBMC (IL-6 and TNF-α) was determined by ELISA followed by pathological tests and Antioxidant Enzymes (GSH, Catalase, SOD) on Cotton-Pellet induced granuloma model in rats. **The test compound ITC showed significant anti-inflammatory activity against paw edema at the highest test dose of 5 mg/kg. In the cotton pellet-induced granuloma model, the compound showed dose dependent anti-granuloma activity, with the highest effect at 50 mg/kg.** Additionally, the release of inflammatory cytokines such as IL-6 and TNF-α which is responsible for inflammatory activity, gets attenuated by ITC ($^{*p} < 0.05$; $^{**p} < 0.01$). Moreover, toxic control rats showed significant decreased levels of GSH, Catalase, SOD and increased level of serum hepatic enzymes. ITC however reversed the above changes in dose dependant manner which signifies the antioxidant properties of test compound.

Keywords: lupeol, Inflammation, Cytokine, Anti-inflammatory.

D-93

Evaluation of Diuretic Potential of Eclipta Alba in Rat

Subhashree Sarangi and Abhisek Pal

School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar - 751003, Orissa, India
ssarangi072@gmail.com

Abstract:

Herbal products are cost effective, easily available and safe for long term use. In general diuretics are instructed for long term use; in this context the natural drug provides a safer pharmacotherapy. Eclipta alba Hassk (Bhringaraj) grown widely in tropical countries, recently known to have diuretic and anti-hypertensive effect in the tribal community. Since the report has shown new dimension to one important clinical use and paucity of data available in this regard, the present work is undertaken to study the above mentioned effects in a scientific manner. Albino wistar rats (100-200gms) deprived of food for 15hrs divided into seven groups of six in each and put in metabolic cages after hydration by normal saline for 24hrs. Aqueous extract of Eclipta alba (AEEA) was administered in 50,100,200 and 400mg/kg doses per oral. Urinary volume, total Na^+ , K^+ , Cl^- concentration was estimated at 5th hr & 24th hr and compared with control (saline treated) group. Furosemide (25mg/kg P.O) was taken as the standard. Results: EEEA was found to increase the urinary volume of the 5 th hr and 24th hr sample in a dose dependent manner. Na+ & Clexcretion also significantly increased in 200&400 mg/kg doses. Synergistic Effect was not seen with furosemide. AEEA was found to posse's diuretic activity.

Keywords: *Elclipta alba, dieresis.*

D-95

In Vitro & In Vivo Nootropic Evaluation of Methanolic Leaf Extract of *Tiliacora racemosa*

Vivek Kumar Tiwari

Department of Pharmacology, Gokaraju Rangaraju College of Pharmacy, Hyderabad - 500090, Telangana, India
vivek.tiwari087@gmail.com

Abstract:

Loss of cognition is one of the age related mental problems and a characteristic symptom of neurodegenerative disorders likes Alzheimer's disease. *Tiliacora racemosa* is a well explored traditional Indian medicinal plant and is routinely used as folkloric medicine to treat various ailments in particular CNS stimulant, anti nociceptive, anti-inflammatory activities. The objective of the study was to evaluate the nootropic activity of leaves of Tiliacora *racemosa* in different learning and memory paradigm viz., Rotarod apparatus, Actophotometer, Cook's pole climbing apparatus against aluminum chloride induced chronic amnesia. Moreover, influence of methanolic leaf extract of *Tiliacora racemosa* on central cholinergic activity was studied by *in vitro* Acetylcholinesterase inhibitory activity by microwell plate method to elucidate its possible mechanism. Methanolic leaf extract of *Tiliacora racemosa* (100 & 200 mg/kg b.w *p.o*) were administered to Swiss albino mice for 41 days and basal activity scores, fall off time and time taken to climb pole were determined against aluminium chloride (100 mg/kg, *p.o*) induced amnesia through exteroceptive behavioral models viz. Rotarod apparatus, Actophotometer, Cook's pole climbing apparatus. Treatment with methanolic leaf extract of Tiliacora *racemosa* significantly improved learning and memory against aluminium chloride induced amnesia. Moreover, *Tiliacora racemosa* extract dose dependently decreased mice brain acetylcholinesterase activity and it was comparable to standard drug Donepezil. The results indicate the methanolic extract *Tiliacora racemosa* might be useful as nootropic agent to delay the onset and reduce the severity of symptoms associated with dementia and Alzheimer's disease. The underlying mechanism of action of its nootropic potentiality might be attributed to its anticholinesterase property due to the presence of Isoquinoline alkaloids.

Keywords: Nootropic activity, Tiliacora racemosa, anticholinesterase, Isoquinoline alkaloids.

D-96

Exploring Efficacy of Phlorizin A SGLT Inhibitor in Mouse Model of Intracerebroventricular Streptozotocin Induced Dememtia of AD Type

Jasneet Singh, Reena Rani, Amteshwar Singh Jaggi and Nirmal Singh

Pharmacology division, Department of Pharmaceutical Sciences and Drug Research, Faculty of Medicine, Punjabi university, Patiala - 147002, Punjab, India
singh.jasneet94@gmail.com

Abstract:

The present study has been undertaken to explore the potential of SGLT as novel target in mouse model of intracerebroventricular streptozotocin (*icv* STZ) induced dementia of AD type, employing phlorizin a dual SGLT inhibitor. STZ [3mg/kg, injected i.c.v injected on 1st & 3rd day] was used to induce dementia in Swiss mice. The Morris water maze (MWM) was employed to evaluate the effect on cognitive functions. A series of biochemical estimations such as brain total protein, brain acetylcholionesterase (AChE) activity, brain thiobarbituric acid reactive species (TBARS), reduced glutathione (GSH), and brain myeloperoxidase (MPO) activity, were performed. Histopathological studies involving H & E staining of coronal brain sections were also performed. *icv* STZ produced significant declines in MWM performance of the animals, indicating impairment of learning & memory. icv STZ treated mice also exhibited a noticeable rise in brain AChE activity, brain oxidative stress (increased TBARS and decreased GSH levels) and brain MPO activity. Furthermore, the stained micrographs of icv STZ treated mice indicated pathological changes and severe neutrophil infiltration. Treatment with Phlorizin / Donepezil (serving as positive control) significantly attenuated icv STZ induced memory deficits, biochemical alterations and histopathological changes. Therefore, it may be concluded that phlorizin attenuated i.c.v. STZ induced memory loss and neuropathological changes by virtue of its multiple actions viz antioxidative; anti-inflammatory; anti-cholionesterase and probably through SGLT inhibitory action and that SGLTs can be an encouraging target for the management of dementia of AD.

Keywords: Phlorizin, STZ, SGLT, MWM.

D-97

To Explore the Role of Harmaline in Management of Cognitive Impairment Induced by Hyperhomocystenemia

Mohit Chawla, Ashmanpreet Kaur and Rajesh Kumar Goel

Pharmacology Division, Department of Pharmaceutical Scienses and Drug Research, Punjabi University Patiala, Patiala

- 147002, Punjab, India
chawlamohit31@gmail.com

Abstract:

Vascular dementia (VaD) is a neurovascular disease with a progressive course of coginitive impairments, caused by reduced blood flow to the brain. VaD patients often present with memory loss, attentional, executive dysfunction, such as disorientation, slowed thinking and diminished capabilities for problem solving , planning and task execution . Vascular dementia is associated with various pathological pathways such as altered neurochemical milieu by endothelial and neuronal dysfunction which might be responsible for coginitive impairment. Hyperhomocysteinemia has been reported to be an independent vascular risk factor .Elevated homocysteine level may be associated with development of dementia. There is also evidence that disturbances in cholinergic and serotonergic function may play a role in cognitive impairment. Serotonergic receptor modulation has been reported to have beneficial effects in cognitive impairment associated with various neurological disease. Modulation of serotonin receptors by harmaline may be explored as potential pharmacological target for management of hyperhomocystienemia induced vascular dementia in rodents.

Keywords: harmaline, hyperhomocystenemia, cognitive impairment.

D-98

Effect of Ethanolic Extract of *Tinospora Cordifolia* Attenuates LPS Induced Sickness Behaviour in Rats

Logeshwari B and Prakash R

Department of Pharmacology, K K College of Pharmacy, Gerugabakkam, Chennai – 600116, Tamil Nadu India
logeshwari30996@gmail.com

Abstract:

Background: Neuroinflammation has been implicated in the pathogenesis or the progression of the variety of acute and chronic neurological and neurodegenerative disorders including Alzheimer's disease. Aim: The present study is to investigate the ethanolic extract of *Tinospora cordifolia* on LPS induced behavioral alterations, oxidative stress and neuronal damage in rats. Methods: Adult male Wistar rats were divided into five groups six in each. Group I treated with normal saline (0.9% NaCl i.p.), Group II treated with Normal saline + LPS (100 µg/kg i.p.), Group III treated with Aspirin (200 mg/kg) + LPS (100 µg/kg), Group IV treated with EETC (200 mg/kg) + LPS (100µg/kg) and Group V treated with EETC (400 mg/kg) + LPS (100 µg/kg) for 14 days followed by single challenged of LPS to all the groups except control rats. On 15th day onwards, various behavioral assessment such as body weight, rectal temperature, locomotor activity, cognitive and memory assessment were carried out. Rats were sacrificed and brain was isolated and estimated antioxidant levels (GSH, SOD, TBARS and CAT) and neuronal damage in the region of hippocampus were analysed. Results: LPS treated rats significantly ($P<0.001$) decreased the body weight, locomotor activity, latency period in passive avoidance test and anti-oxidant levels in GSH, SOD and CAT and increased the rectal temperature and lipid peroxidase level (TBARS) compare to control rats. Pretreated with Aspirin 200 mg/kg rats and EETC (200 and 400 mg/kg) rats significantly attenuated the LPS induced behavioral alteration, oxidative damage and neuronal damage. Conclusion: The ethanolic extract of *Tinospora cordifolia* showed neuroprotective activity due to the presence of phytochemical constituents such as alkaloids, glycosides, diterpenoid lactones, berberine, flavonoids, saponins.

Keywords: Neuroinflammation, *Tinospora cordifolia*, hippocampus, Lipopolysaccharide.

D-99

Anti-anemic Activity of Hydro-Alcoholic Extract Seeds of *Petroselinum crispum* in Phenylhydrazine Induced Anemic Rats

Chandrakanta Kushwah, Ankur Joshi, Sapna Malviya and Anil Kharia

Modern institute of Pharmaceutical Sciences, Indore - 453111, Madhya Pradesh, India
chandakushwah0@gmail.com

Abstract:

The current research is to identify the anti-anemic activity in hydro-alcoholic extract of seeds of *Petroselinum crispum* in phenylhydrazine induced anemic rats. Phenylhydrazine (40mg/kg) was given intraperitoneally in rats for two days to induce anemia. The animal were divided into 4 groups of 6 animal each. Group 1 was known as normal control group, Group 2 was known as anemic control group, Group 3 was known as standard reference control group given with Vit. B_{12}, Group 4 was known as test control-I given with 100mg/kg of hydro-alcoholic extract of seeds of *Petroselinum crispum.* All the test drugs were given for 13 days through oral route once in a day. On 14th day blood was taken out through tail puncture and was subjected to the

estimation of RBC, Hb and percentage Haematocrit. Both the hydro-alcoholic seeds extract of *Petroselinum crispum* and Vit. B_{12} significantly increase the HB, RBC & percentage Haematocrit level which shows that *Petroselinum crispum* seed exhibits the anti-anemic activity.

Keywords: Anemia, anti-anemic activity, hydro-alcoholic extract, *Petroselinum crispum,* **Vit. B_{12}.**

D-100

Anti-bodies as Clinically Useful Drugs

A. Sushmita, G Arun and Ch. Malathi Suvarna

Gland Institute of Pharmaceutical Science, Sy. No: 551, Shangri-la, Kothapet (village), Shivampet (Mandal), Medak, Telangana - 502220, India
sushmitasmiley19@gmail.com

Abstract:

Antibodies are used extensively as diagnostic tools in many different formats. The term applied for antibody based diagnostic tests is "immunoassay". Antibody-based immunoassays are the most commonly used confirmatory diagnostic assays and is the fastest growing technologies for the analysis of biomolecules Trends in antibody based diagnosis show advances in assay Sensitivity and specificity is ensured depending on whether or not the antigen to be quantified competes with labeled antigen for a limited number of antibody binding sites. Rhesus factor, also known as Rhesus D (RhD) antigen, is an antigen found on red blood cells. Presence of the antigen makes a person Rhesus-positive (Rh+) and absence makes a person Rhesus-negative (Rh–). During normal childbirth, delivery trauma or complications during pregnancy, blood from a fetus can enter the mother's system. In the case of an Rh-incompatible mother and child, there may be sensitization of an Rh- mother to the Rh antigen on the blood cells of the Rh+ child. This may put the remainder of the pregnancy, and any subsequent pregnancies at risk of fetal death due to hemolysis Antibodies are also used in structure prediction. Modifying the antigen binding affinity, and identifying an epitope, of a given antibody. X-ray crystallography is one commonly used method for determining antibody structures. This, however, is a difficult process. Monoclonal antibodies have been used in clinical diagnosis for many years but it is only now that these agents are being licensed for clinical treatments. This review will focus on UK licensed monoclonal antibodies highlighting their clinical benefits, limitations, and side effects.

Keywords: monoclonal antibodies, recombinant technology, chimaeric antibodies, tumour necrosis factor α, Crohn's disease, rheumatoid arthritis.

D-101

Effect of Combination Therapy of Vildagliptin and Nifedipine on Cardioprotectivity and Antihyperglycemic Activity on Adrenaline Induced Hyperglycemic Rat

Saraswati Prasad Mishra and Deepak Kumar Dash

Royal college of Pharmacy, Raipur – 492010, Chhattisgarh, India
saraswatim3@gmail.com

Abstract:

Nowadays diabetes and hypertension are one of the most co-morbid diseases. Mortality increases above 7 times when a patient is having these co-morbid diseases. In India the percentage of diabetes (Type 2) patient having hypertension is found to be around 6.4% to 55%. Vildagliptin is classed under dipeptidyl peptidase-4 (DPP-4) inhibitors under oral hyperglycemic agents. Nifedipine is an antihypertensive drug that comes under the class of calcium channel blockers. The present study is based on determination of cardioprotective and antihyperglycemic activity of co-administered nifedepine and vildagliptin on adrenaline induced hyperglycemic rats. In acute and chronic condition study glucose level and lactate dehydrogenase (LDH) estimation in blood was done with the help of Glucometer and Lactate dehydrogenase assay kit respectively. Histopathological examination of heart muscles of albino Rats was done. After co-administration of drugs initial glucose level (142.77 ± 12.9 mg/dl) and final blood glucose level (135.1 ± 48.7 mg/dl) in acute condition and initial glucose level (160.2 ± 9.3 mg/dl) and final blood glucose level (154.6 ±14.8 mg/dl) in chronic condition were found. In chronic condition initial LDH level (455.9 ±17.1 IU/L) and final LDH level (236 ±24.1 IU/L) in blood were found. In microscopic examination of endocardium layer of heart muscles of adrenaline induced hyperglycemic albino rats treated with co-administration of drugs necrosis was not found, it confirms their cardioprotective activity. Conclusion was that when co-administration of Nifedipine and Vildagliptin, nifedipine significantly reducing the antihyperglycemic activity but it has no markedly effect on cardioprotective activity.

Keywords: Cardioprotective activity, antiyperglycemic activity, Nifedipine, Lactate dehydrogenase, Dipeptidyl peptidase-4 inhibitor.

D-102

Effect of Brassica oleracea *(Broccoli)* in Freund's adjuvant Arthritic Rat: A Role of Cytokines

Bharatlal Naik, Sangita Mohanty and Abhisek Pal

School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar -751003, Orissa, India
bharatnaik628@gmail.com

Abstract:

Broccoli is classified in the Italica cultivar group of the species Brassica oleracea. Broccoli resembles cauliflower, which is a different cultivar group of the same species. Thorough literature survey reveals that there is no scientific report on wound healing activity of Brassica oleracea (methanolic extract of Brassica oleracea,MEBO).Rats were divided into control, toxicant induced, standard and MEBO treated groups (2mg/kg and 5mg/kg).The acute inflammatory studies were carried out with carrageenan, histamine and egg-albumin induced model, with paw volume as a measuring indicator. The sub-chronic inflammatory study was carried out by cotton pellet induced granuloma model whereas RA was induced by Freund's complete adjuvant (FCA). The apparent indicators like paw volume; arthritic indexes were analyzed to evaluate physical anti-arthritic effect of MEBO. The pathological test like Serum Rheumatoid factor (RF-factor) and C-reactive protein (CRP) also carried out to examine efficacy of MEBO. The biochemical like hepatic enzymes, anti-oxidant indicators and hematological parameters are also important measuring indicators .The levels of cytokines (IL-6, IL-10, INF- γ and TNF-α) which are important mediators of RA were measured by ELISA. Histopathological and Radiological changes were also evaluated. MEBO in dose dependant manner suppressed the severity of RA in rats by attenuating the apparent indicators as mentioned above. The biochemical, hematological, histopathological and radiological results reflected the protective efficacy of MEBO. Meanwhile MEBO significantly decreased (IL-6, INF- γ and TNF-α) and increased level of (IL-10) which is a protective anti-inflammatory cytokine. Our results showed that the MEBO exerted a superior anti-inflammatory and anti-arthritic effect and the cytokine alteration with biochemical changes define its mechanistic protective efficacy.

Keywords: Sulforaphane, Freund's Complete Adjuvant, Rheumatoid arthritis, Anti-inflammatory, Cytokine.

D-104

Hypocholesterolemic and Anti Inflamatery Activity of Methanolic Root Extract of Cajanus Cajan

S Sirisha, K. Kumaraswamy and M. Gangaraju

Department of Pharmacology, Gokaraju Rangaraju College of Pharmacy, Bachupally
Hyderabad - 500018, Andhra Pradesh, India
sirisha.surampudi94@gmail.com

Abstract:

Hyperlipidemia is a major contributor to pathogenesis of cardiovascular diseases and diabetes mellitus. Medicinal plants play key role in preventing various diseases. The present study was carried out to investigate antihyperlipidemic, anti-inflammatory and anti-oxidant activity of methanolic root extract of *cajanus cajan*. The antihyperlipidemic activity was evaluated by using high fat diet (HFD) and fructose induced hyperlipidemic rat models using simvasatin as standard. The anti-inflammatory activity was evaluated by carrageenan induced paw edema model using indomethacin as standard. The extract was also screened for its antioxidant activity by reducing power assay and hydrogen peroxide assay using ascorbic acid as standard. Phytochemical screening of the MECC indicated the presence of flavonoids, steroids, saponins, alkaloids, glycosides, triteronoids, tannins and phenols. Acute toxicity studies were carried out and the extract was found to be safe upto 2000mg/kg bd.wt. The methanolic root extract of *cajanus cajan* (MECC) was evacuated at two dose levels namely 200 and 400 mg/kg bd.wt. MECC has shown significant lipid lowering activity and inhibited the paw edema volume. the lipid lowering activity might be due to the presence of sterols, flavonoids, triterpenoids and saponins. The extract contains sterols like beta sitosterol and beta sigmasterol which reduces the absorption of cholesterol, increases the fecal excretion of steroids, that results in reduction of body lipids. Anti-inflammatory activity might be due to the oresence of triterpenoids, alkaloids, glycosides, saponins, flavonoids and phenolics. The lupeol present in the extract might target anti-inflammatory signaling pathways there by exerting its anti-inflammatory activity. The extract also significantly scavenged the free radicals. The phenolic constituents present in the extract might be responsible for its antioxidant activity as phenolics posses strong ability to inhibit oxidants and free radicals. From the above it is clear that MECC posses antihyperlipidemic, anti-inflammatory and antioxidant activities.

Keywords: *cajanus cajan,* **antihyperlipidemic, anti-inflammatory, antioxidant activities.**

D-105

Assessment of Anti-Arthritic Activity of Aconitum ferox Root in Complete Freund's

Adjuvant Induced Arthritic on Rat's Model

Priya Mishra and Pushpendra Kannojia

Department of Pharmacology, IPS-College of Pharmacy, Shivpuri Link Road, Gwalior -474002, Madhya Pradesh, India
priya.mishra4491@gmail.com

Abstract:

Aim: To investigate the anti-arthritc activity of ethanolic extract of aconitum ferox root in complete Freund's adjuvant induced arthritis on rat's model.Material and methods: Thirty healthy albino rats were selected and randomly divided into five groups. Arthritis was induced by freund's complete adjuvant (FCA) and then treated with ethanolic extract of aconitum ferox for 14 and 28 days. The various parameters's like paw volume, haematological parameter's (RBC, WBC, Hb and ESR) and radiological studies were assessed. Result: In FCA induced arthritic rats, the increased haematological parameter in arthritic rats were significantly recovered to near normal by the treatment with aconitum ferox root extract at the dose10mg/kg.Conclusion: Aconitum ferox had shown anti-arthritic activity with a significant decrease in paw volume and it could significant normalize the haematological abnormalities in adjuvant induced arthritic rats.Futher radiological studies confirmed the anti-arthritic activity of extract of aconitum ferox root.

Keywords: Arthritic, Aconitum ferox, Freund's complete adjuvant, Heamatological, Paw valume.

D-106

Self-Reporting of Adverse Drug Reactions in Guntur General Hospital: Patient's Perspectives

M. Pavan Sai Teja

Department of Clinical Pharmacy, Hindu College of Pharmacy, Guntur – 522003, Andhra Pradesh, India
pavansait8@gmail.com

Abstract:

Background: Adverse drug reactions (ADRs) represent the important cause of morbidity and mortality that affect patients using drugs. Previous studies have clarified the knowledge and attitude toward ADRs reporting among healthcare providers, while studies toward awareness of patients are limited. Aim and Objective: To evaluate knowledge and attitude toward ADRs reporting among patients visiting Guntur General Hospital in Guntur. Methods: This observational study was conducted on randomly selected 300 patients at the out-patient setting of general hospitals in Guntur. Demographic characteristics of participants were documented and questionnaire regarding knowledge and perceptions was given to fill up, and the data were analyzed using descriptive statistics. Results: Demographic analysis showed that 55% of patients were males, 62% of them were from rural areas, and only 34% were college graduates. Regarding knowledge about ADRs, 73.3% patients were aware about ADRs and 37% had experienced ADRs in past. None of the respondents were aware of ADR reporting center. Regarding perceptions toward ADR, 84.2% agreed to report ADR in future and 90% respondents believed that ADR reporting may strengthen the patient safety. According to 61% of patients, patient education program is the best way to educate them regarding ADR. Conclusion: Educational interventions are highly recommended to improve awareness among patients regarding the validity of ADRs reporting.

Keywords: ADRs, Self-Reporting, General Hospital, Reporting System.

D-107

Antimicrobial, Anti-Inflammatory and Anti-Parkinson's Screening of Schiff's Bases through Hsp90 Inhibition

Anusha K, P. Venkanna and M. Ganga Raju

Department of pharmacology, Gokaraju Rangaraju College of Pharmacy, Hyderabad - 500090, Andhra Pradesh, India
anusha.varma213@gmail.com

Abstract:

Heat-shock protein (Hsp90) is one of a group of molecular chaperones responsible for managing protein folding and quality control in cell environment. Hsp90 requires a series of co-chaperones to assemble into a super-chaperone complex for its function. The present study is an attempt to explore the role of Hsp90 in activities like anti-inflammatory and anti-parkinson's activity. The two test compounds C1 and C2 were synthesized and the acute toxicity dose was found to be 550 mg/kg bd.wt. In the present study, we evaluated anti-Parkinson's activity of HSP 90 inhibitors in reserpine and haloperidol induced experimental animal models. In this study, effects of HSP 90 inhibitors (55 and 100 mg/kg, *p.o.)* were studied using *in vivo* behavioral parameters like catalepsy, muscle rigidity, and locomotor activity. . Hsp90 is an abundant protein in the cytosol of eukaryotes and bacteria, where it is called HtpG. High temperature protein G (HtpG) a bacterial heat shock protein 90 (Hsp90), is essential for thermotolerance in some prokaryotes. Hsps are involved in various routine

biological processes such as transcription, translation and post translational modifications, protein folding, and aggregation and disaggregation of proteins. Thus it is important to understand holistic role of Hsps in response to stress and other biological conditions in fungi. Hsp104, Hsp70 and Hsp40 are found predominant in replication and Hsp90 is found in transcriptional and post transcriptional process. The formalin induced and carrageenan induced hind paw edema model was used to study anti-inflammatory activity. 50 mg/kg and 100 mg/kg dose was selected. Acute edema in the left hind paw of the animals was induced by sub plantar injection of 0.1 ml (1%) carrageenan suspension in normal saline and formalin. HSP 90 inhibitors significantly ($p<0.05$) reduced the paw edema in carrageenan treated rats. The effect was maximum at 3hr after the carrageenan injection. From the results it was found that the two test compounds C1 and C2 possess antimicrobial, anti-inflammatory and anti-parkinson's activities.

Keywords: antimicrobial, anti-inflammatory, anti-parkinson's, HSP 90 inhibitors.

D-108

To Study the Role of IDO Inhibition in L-methionine Induced Vascular Dementia in Mice

Jagroop Singh, Anureet Kaur and Rajesh Kumar Goel

Department of Pharmaceutical Sciences and Drug Research, Punjabi University, Patiala- 147002, Punjab, India
singh.7jagroop@gmail.com

Abstract:

Vascular dementia (VaD) is a neurodegenerative cerebrovascular disorder pertaining to stroke, ischemic or hemorrhage leading to reduced blood flow which is mainly characterized by significant decline of cognition (knowledge, attention, executive functions, learning and memory, judgement, evaluation, reasoning, problem solving, decision making, calculations, language), thus affecting everyday activities. VaD is second most common cause of dementia after AD. Chronic treatment with L-methionine was given orally for a period of 4 weeks to induce vascular dementia. Quercetin was administered orally in the dose of 10mg/kg, 20mg/kg and 40mg/kg and donepezil in dose of 0.7mg/kg; i.p. for a period of 14 days along with L-methionine. At the end of 4 weeks of protocol, animals were subjected to behavioral estimations. Four hour after the behavioral assessment, all animals were euthanized and discrete parts of mice brain (cortex and hippocampus) and lungs were separated for biochemical and neurochemical analysis. Supplementation of quercetin along with L-methionine dose dependently alleviated the cognitive deficits associated with vascular dementia with restoration of elevated IDO activity and well known antioxidant activity. Thus, the IDO targeting strategy will likely be a better therapeutic strategy for the treatment of cognitive impairement associated with vascular dementia.

Keywords: Vascular Dementia, Indole amine 2,3-dioxygenase, L-methionine, Donepezil, Quercetin.

D-109

Effect of Hydro-Alcoholic Extract of *Ipomoea Pes-Tigridis* Linn against Dimethylnitrosamine induced Liver Cirrhosis in Rats

N. Jegan, N. Chidambaranathan, M. Jesupillai and A. K. Mathivanan

K.M. College of Pharmacy, Madurai - 625107, Tamilnadu, India
jeganrajam@yahoo.co.in

Abstract:

The leaves of *Erythrina indica* are used in the folklore for the treatment of various illnesses. The present study was undertaken to investigate wound healing effect of leaves of *Erythrina indica* in Wistar rats using incision and excision wound models. A formulation of leaves extract was prepared in emulsifying ointment at a concentration of 10% and applied to the wounds. In the excision wound model showed significant ($p<0.001$) decrease in the period of epitheliazation. A significant ($p<0.001$) increase in the granuloma breaking strength was observed in incision model compared to control. The nitrofurazone ointment 1 % w/w was used as standard. The results suggested that leaf extract of *Erythrina indica* possess wound healing activity.

Keywords: *Erythrina indica*, **Wound healing, Excision wound, Incision wound.**

D-110

Preliminary Phytochemical and Neuropharmacological Activity of Ethanolic Extract of Leaves of *Hamelia Patens*

Kaviya Priya R, Meena A and Sankari M

Department of Pharmacology, KK College of Pharmacy, Chennai - 600122, Tamil Nadu, India
kavimegha97@gmail.com

Abstract:

The present study was carried out to evaluate the CNS activity of ethanolic extract of *Hamelia patens* in animal models. The ethanolic extract of *Hamelia patens* was prepared using Continuous Soxhlet extraction. The neuropharmacological effect of ethanolic extract of *Hamelia patens* was evaluated by General behavioural studies, Anxiolytic, Muscle relaxant , Antidepressant, Motor co-ordination and nootropic activity. The ethanolic extract of *Hamelia patens* treatment showed significant anxiolytic action without incidence of behavioural toxicity. Infact cognitive abilities were found to be significantly improved. This is most important observation of the present investigation because modern medicine does not have any drug that would be useful in the treatment of anxiety and cognitive deficit simultaneously. Preliminary investigation showed that the ethanolic extract of *Hamelia patens* has potent pharmacological activity and can be considered safe when administered. These finding lend pharmacological justification to the traditional uses of *Hamelia patens* in the treatment of nervous disorder. Further bioactive studies will determine compound responsible for the same.

Keywords: Nootropic, Elevated plus maze, Motor co-ordination.

D-111

Ubiquitin – Proteosome System and Cell Specialization

Pravesh Yadav

Department of Pharmaceutical Sciences – Dr. Harisingh Gour Central University, Sagar - - 470003, Madhya Pradesh, India
praveshyadav778@gmail.com

Abstract:

The Ubiquitin/Proteasome System (UPS) is a highly regulated mechanism of intracellular protein degradation and turnover. Through the concerted actions of a series of enzymes, proteins are marked for proteasomal degradation by being linked to the polypeptide co-factor, ubiquitin. The UPS participates in a wide array of biological functions such as antigen presentation, regulation of gene transcription and the cell cycle, and activation of NF-κB. During early research on UBE2O, Researchers noticed large amounts of the enzyme present in immature red blood cells. The enzyme marks cell parts for destruction by tagging them with a small protein called ubiquitin. This tagging allows the proteasome to recognize the parts destined for destruction. That was a powerful clue. The combination of UBE2O's pronounced presence and its known function as cellular debris-remover made it a promising candidate for the role of a key regulator of cell specialization. The researchers observed that mice without the enzyme were anemic, a marker of red blood cell deficiency. The observation supported the notion that UBE2O may play a role in red blood cell development.The researchers also demonstrated that when isolated from immature red blood cells and tested in other cell types, UBE2O still marked the right proteins for destruction, suggesting that the enzyme is the primary regulator of red blood cell specialization. Their results revealed that immature red blood cells lacking UBE2O retained hundreds of proteins and failed to become specialized.Because the enzyme plays an important role in the development of red blood cells, the researchers say they hope their work could lead to therapies for certain blood disorders and blood cancers. The present study revealed that, in mice, UBE2O deficiency powerfully suppressed the symptoms of a blood disorder known as beta thalassemia. As the enzyme plays an important role in the development of red blood cells, the researchers say they hope their work could lead to therapies for certain blood disorders and blood cancers.

D-112

Phytochemical Screening, Antioxidant and Antidiarrhoel Activity of Melia Azedarach

Kshema Hasanthi

Department of pharmacology, G Pulla Reddy College of Pharmacy, Mehdipatnam - 507140, Hyderabad, Telangana, India
kshemahasanthi@gmail.com

Abstract:

The tree *Melia azedarach* (Famliy: *Meliaceae*) is known locally as bakain or drek (Hindi), Persian lilac or china tree (English), and fleurs lilas (French). In South America it is commonly known as "paraiso" or paradise and in the US as Indian lilac or white cedar. The whole plant or its specific parts (leaves, stem and roots) are known to half medicinal properties and half a long history of use by indigenous and tribal people in India. *Melia azedarach* is used as an ayurvedic medicine in India and unani medicine in Arab countries as an anti-oxidative, analgesic, anti-inflammatory, insecticidal, rodenticidal , anti-diarrhoeal, deobstruent, diuretic, anti-diabetic, catheretic, anti-rheumatic, anti-hypertensive it is highly nutritious having a calorific value of 5100 kcal/kg. Also, it is used to manufacture agricultural implements furniture, plywood, boxes, poles, tool handles and fuel wood. It is widely planted as a shade tree in coffee and abaca (Musa textilis) plantations. It is well known ornamental tree. The present review is therefore, an effort to give a detailed survey of the literature on its botanical details, phytochemical reports, pharmacological studies and its

therapeutic importance.

Keywords: melia azedarach, anti-oxidant, anti-diarrhoel.

D-113

Anti-bacterial, Anti-fungal and Anthelmintic Activity of Aqueous Extract of *Solanum xanthocarpum*

Ankita Dubey, Mahavir Chhajed, Atika Chhajed and Sanjay Jain

[1]Indore Institute of Pharmacy, Rau-Pithampur Road, Opp. IIM, Indore, Rau, Indore -453331, Madhya Pradesh, India
mahavirchhajed@rediffmail.com

Abstract:

Solanum xanthocarpum Sehrad. & Wendl. is widely used as anti-asthmatic from ancient ages. It is widely used in cough suppression preparation of Ayurvedic System of Medicine. In the present work, anti-bacterial and anti-fungal activity of the *Solanum xanthocarpum* Sehrad. & Wendl. were studied. The plant was authenticated at Department of Botany, Nagpur University, Nagpur. Aqueous extract of the whole plant was used for the study. Anti-bacterial activity of aqueous extract was studied and compared with norfloxacin as the standard and shows good activity on the gram-negative *E.coli* and gram-positive *S. aureus*. Anti-fungal activity of the aqueous extract was also studied using griseofulvin as standard and shows good activity against *A. niger* and *C. albicans.* Anthelmintic activity of the aqueous extract was also studied using albendazole as standard and shows moderate activity. The phytochemical screening of aqueous extract was studied and shows presence of sterols, alkaloids, glycosides, tannins, carbohydrates and proteins, in the plant; amongst them alkaloids might be responsible for these activities.

Keywords: Solanum xanthocarpum Sehrad, Anti-bacterial, Anti-fungal, Anthelmintic, phytochemical screening.

D-115

Scopoletin Reversed Diabetes Mediated Behavioural Dysfunctions But Could Not Antagonize the Effect of PI3K Inhibitor LY294002

Sita Sharan Patel, Ramsaneh Raghuwanshi, Ashish Acharya and Surendra Kumar Jain

Department of Pharmacology, Sagar Institute of Research and Technology - Pharmacy, Bhopal - 462041, Madhya Pradesh, India
sitasharan.ss@gmail.com

Abstract:

Clinically, depression and diabetes are co-morbid. Diabetes makes the symptoms of depression worse. Both depression and diabetes are the risk factor for cognitive impairment and hypolocomotion. Insulin signalling involved in many regulatory processes, including learning and memory. Scopoletin has been claimed for its beneficial effects against diabetes. The present study was performed to evaluate whether diabetes mellitus is associated with neuronal dysfunction and the effect of scopoletin. Rosiglitazone, is used as standard drugs for comparison. Multiple dose of streptozotocin (STZ) (50 mg/kg, i.p. for 5 consecutive days) resulted in depressive like behaviour, cognitive impairments and hypolocomotion in mice. STZ induced insulin resistance and hypercorticosteronemia in mice. Diabetes was associated with oxidative stress and inflammation of hippocampus. Chronic Scopoletin treatment (1 mg/kg, p.o.) significantly reverted diabetes mediated cognitive impairment, depressive like behaviour and impaired glucose tolerance. Scopoletin reduced hypercorticosteronemia, hyperglycemia, body weight loss and polydypsia in diabetic mice. Scopoletin administration significantly ameliorated hippocampal glucose transporter-4 (GLUT4) membrane translocation in diabetic mice. Chronic administration of LY294002 exacerbated the effect of diabetes in mice. Although, scopoletin ameliorated behavioural performance, GLUT4 translocation as well as showed antioxidant and anti-inflammatory effects but these effects were blocked significantly by PI3K inhibitor LY294002. These results suggest that chronic administration of scopoletin might prove to be effective for diabetes related neurological disorders.

Keywords: diabetes, neurological disorders, glucose transporter, PI3K inhibitor.

D-116

Sitagliptin as Combination Therapy in the Treatment of Type 2 Diabetes Mellitus

Roshani Sahu, Ashish Netam, Jhakeshwar Prasad, Bibhas Pandit and Trilochan Satapathy

Columbia Institute of Pharmacy, Vill-Tekari, Near Vidhansabha, Raipur – 491001, Chhattisgarh, India
roshanisahu777@gmail.com

Abstract:

The Study of Diabetes recommends metformin as the initial agent of choice in the treatment of type 2 diabetes mellitus. Unfortunately, most patients require multiple medications to obtain glycemic control. One of the newest additions to the antidiabetic armamentarium is the class of drugs known as dipeptidyl-peptidase IV (DPP-IV) inhibitors. This novel approach focuses on harnessing the beneficial effects of GLP-1, an incretin hormone released from the gut postprandially. The first DPP-IV inhibitor approved in the United States was Sitagliptin. It has been studied in both mono therapy and combination therapy. Combination studies with metformin realize a hemoglobin A1C reduction of 0.65%–1.1%. The combination of the two has a modest positive effect on body weight with the convenience of an oral route of administration. It has also been shown to be highly tolerable, efficacious and with little risk of hypoglycemia. This review will focus on combination therapy with Sitagliptin with emphasis on combination with metformin.

Keywords: DPP-IV inhibitor, Sitagliptin, metformin, type 2 diabetes, incretins.

D-118

Targeting Blood Brain Barrier by Omega 3 Fatty Acids

Bhupendra Bunkar

Department Of Pharmaceutical Sciences – Dr. Hari Singh Gour Central University Sagar - 470003, Madhya Pradesh, India
bhupendrasunaiya@gmail.com

Abstract:

The blood-brain barrier is composed of a network of endothelial cells that line blood vessels in the central nervous system. The cells in blood brain barrier are connected by tight junctions. While the blood-brain barrier is a critical evolutionary mechanism that protects the central nervous system from harm, it also represents a major hurdle for delivering therapeutic compounds into the brain that prevent most molecules from passing between them, including many drugs that target brain diseases. Already extolled for their health benefits as a food compound, omega-3 fatty acids now appear to also play a critical role in preserving the integrity of the blood-brain barrier, which protects the central nervous system from blood-borne bacteria, toxins and other pathogens, according to new research from Harvard Medical School. Team led by Chenghua Gu, associate professor of neurobiology at HMS, describes the first molecular explanation for how the barrier remains closed by suppressing transcytosis—a process for transporting molecules across cells in vesicles, or small bubbles.They found that the formation of these vesicles is inhibited by the lipid composition of blood vessel cells in the central nervous system, which involves a balance between omega-3 fatty acids and other lipids maintained by the lipid transport protein Mfsd2a. Mfsd2a is a transporter protein that moves lipids containing DHA, an omega-3 fatty acid found in fish oil and nuts, into the cell membrane. This study presents the first clear molecular mechanism for how low rates of transcytosis are achieved in central nervous system blood vessels to ensure the impermeable nature of the blood-brain barrier.In a 2014 Gu and colleagues discovered that a gene and the protein it encodes, Mfsd2a inhibits transcytosis and is critical for maintaining the blood-brain barrier. Mice that lacked Mfsd2a, which is found only in endothelial cells in the central nervous system, had higher rates of vesicle formation and leaky barriers, despite having normal tight junctions. To test the importance of this function to the barrier, the team created mice with a mutated form of Mfsd2a, in which a single amino acid substitution shut down its ability to transport DHA. They injected these mice with a fluorescent dye and observed leaky blood-brain barriers and higher rates of vesicle formation and transcytosis—mirroring mice that completely lacked Mfsd2a. A comparison of the lipid composition of endothelial cells in brain capillaries against those in lung capillaries—which do not have barrier properties and do not express Mfsd2a—revealed that brain endothelial cells had around two- to five-fold higher levels of DHA-containing lipids. A experiments revealed that Mfsd2a suppresses transcytosis by inhibiting the formation of caveolae—a type of vesicle that forms when a small segment of the cell membrane pinches in on itself. As expected, mice with normal Cav-1, a protein required for caveolae formation, and that lacked Mfsd2a exhibited higher transcytosis and leaky barriers. Mice that lacked both Mfsd2a and Cav-1, however, had low transcytosis and impermeable blood-brain barriers. Many of the drugs that could be effective against diseases of the brain have a hard time crossing the blood-brain barrier .So Blocking the activity of Mfsd2a may be a strategy for getting drugs across the barrier and deliver cargo such as antibodies against beta-amyloid or compounds that selectively attack tumor cells to treat a range of disorders such as brain cancer, stroke and Alzheimer's.

D-119

Pharmacological Activity Hydroethanolic Extract of Cissampelos pareira in Experimental Animals Models

Priyanka Thakur, Onkar Chand, Kartik Sharma, Banita Kumari and Anshul Chandel

Department of Pharmacology, Shiva Institute of B. Pharmacy,

Bilaspur -174001, Himachal Pradesh, India
priyanka123thakur123@gmail.com

Abstract:

Anxiety is a CNS disorder of physiological and behavioural alterations characterized by loss of interest, feeling of guilty and it may lead to wide variety of CNS disorders if remains untreated. It is a widespread psychiatric disorder affecting around 5% of population and it is difficult to predict the patient response to any given treatment. The present study aimed at studing the pharmacological activity of leaves of Cissampelos pareira in experimental animal models. The alkaloids act by inhibiting the monoamino oxidase (MAO), the enzyme responsible for the anxiolytic activity. The present study was undertaken to evaluate the anti-anxiety activity of Cissampelos pareira extract in mice at a dose of 100, 200, 400 mg/kg p.o. against standard Diazepam and control (1%gum acacia). Elevated plus maze, Light dark model and forced swim test model was conducted to record the time spent in open or light compartment and duration of immobility. Cissampelos pareira (200mg/kg p.o.) produced significant anxiolytic effect compared with Diazepam, which was evident from increased light compartment preference and decreased immobility when extract was used.

Keywords: Elevated plus maze, Light dark model, Forced swim test, Cissampelos pareira.

D-120

Photodynamic Therapy: A Specific Cancer Treatment

Tanwar Rohit, Virmani Tarun, Sanduja Mohit, Virmani Reshu and Gupta Jyoti

School of Pharmaceutical Sciences, MVN University, Palwal - 121106, Haryana, India tanwar.rohit3@gmail.com

Abstract:

Photodynamic Therapy (PDT) is a clinically approved (1993) therapeutic procedure for causing selective cytotoxic activity toward malignant cells. PDT involves administration of a photosensitizer that absorb light of specific wavelength. In presence of oxygen, a series of event lead to direct tumor cell death by producing reactive oxygen species, microvasculature blockage and induction of local inflammatory reaction in tumor cell. Photofrin is the widely used photosensitizer in PDT treatment. Clinical studies revealed that early stage cancer can be curable with PDT and it can prolonged the life of patients with inoperable cancer. PDT has been used in many countries for lung Tumour, brain tumour, head and neck tumour, breast cancer, oesophagal cancer etc. Due to specificity for tumor cell and less toxicity for healthy cells PDT become popular treatment in various developed countries.

Keywords: Photodynamic Therapy, Photosensitizer, Reactive oxygen species, Cancer.

D-121

Anti-Inflammatory and Anti-Granuloma Activity of a Naturally Occurring Isothiocyanate from Broccoli (*Brassica Oleracea)*

Sukanya Sahu, Swagatika Panda, Sangeeta Mohanty and Abhisek Pal

School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar - 751003, Odisha, India
sukanyasahu5@gmail.com

Abstract:

The anti-inflammatory and the anti-granuloma effect of a naturally occurring isothiocyanate from broccoli (*Brassica oleracea*), was evaluated for its anti-inflammatory activity in the Carrageenin, histamine , egg-albumin induced rat paw oedema models of acute inflammation and the cotton pellet-induced granuloma rat model of chronic inflammation. Isothiocyanate at dose of 2 and 5 mg/kg, standard drug diclofenac sodium at 10 mg/kg, or vehicle were administered orally before injection of the pro-inflammatory compound. Furthermore, pro-inflammatory cytokines in rat PBMC (IL-6 and TNF-α) was determined by ELISA followed by pathological tests - Serum Hepatic enzymes (SGOT, SGPT, ALP Levels) and Antioxidant Enzymes (GSH, Catalase, SOD) on Cotton-Pellet induced granuloma model in rats. **The test compound ITC showed significant anti-inflammatory activity against paw edema at the highest test dose of 5 mg/kg. In the cotton pellet-induced granuloma model, the compound showed dose dependent anti-granuloma activity, with the highest effect at 5 mg/kg.** Additionally, the release of inflammatory cytokines such as IL-6 and TNF-α which is responsible for inflammatory activity, gets attenuated by ITC ($^{-p} < 0.05$; $^{\rightarrow p} < 0.01$). Moreover, toxic control rats showed significant decreased levels of GSH, Catalase, SOD and increased level of serum hepatic enzymes. ITC however reversed the above changes in dose dependant manner which signifies the antioxidant properties of test compound.

Keywords: Isothiocyanate, Inflammation, Cytokine,

Anti-inflammatory.

Keywords: *Butea Monosperma*, **anti-diabetic, Endoplasmic Reticulum stress ,hypoglycemic effect, Alloxan.**

D-123

Evaluation of Therapeutic Response of Add On Tiotropium Bromide to Formoterol Plus Budesonide in Bronchial Asthma With Reference to Spirometer

Gopinath K Vinayakam, B Vasundara Devi and Diviti Ranganayakulu

[1]Sri Padmavathi School of Pharmacy, Tirupati – 517503, Andhra Pradesh, India
gopinath.karnam@gmail.com

Abstract:

Evaluation of therapeutic efficacy of adds on therapy Tiotropium bromide to Formoterol 6 mcg plus Budesonide 400 mcg/200 mcg with reference to FEV1/FVC %. It is a parallel, prospective, interventional case study. Total of 9 prescriptions and 7 PFT reports of a patient are analyzed since 2008 to 2015. The impairment and risk of asthma assessed by spirometer and SGRQ. And drug induced complication-Central Serous Chorioretinopathy (CSC) by Fundus Fluorescent Angiography (FFA) and Optical Coherence Tomography (OCT). The suspected adverse drug reaction of CSC is collected and documented. The % change in predicted FEV1/FVC of Formoterol and Budesonide are 73.47(^{ns} ρ =0.193) and add on Tiotropium bromide are 75.56(^{ns} **ρ = 0.143) in relative with baseline 66.38.** Similarly % change in HRQOL is -94.86 which is significant (*ρ=<0.0160). Test results confirmed that the ‹probable› ADR - CSC due to prolonged usage of corticosteroids. The cost of Asthma is Rs 13709/-annum and drug induced CSC is account for Rs 15000/- per episode. The study concluded that no significant change in spirometer by add on Tiotropium bromide to Formoterol and Budesonide. The suspected ADR - Budesonide induced CSC is notified to PVPI. And the subject intern changed to a prescription of NSAIDS roflumilast.

Keywords: Therapeutic efficacy, FEV_1/FVC %, Budesonide, CSC and FFA.

D-125

NSAIDS Therapy in Alzheimer's Disease

S.S. Shukla, R. K. Tiwari and R. Pandey

Department of Herbal Drug Development, Columbia Institute of Pharmacy, Raipur - 492001, Chhattisgarh, India
shivpharma007@gmail.com

Abstract:

Alzheimer's disease (AD) is considered as cerebral deposits of β-amyloid (Aβ) peptides and neurofibrillary tangles (NFT) enclosed by inflammatory cells. Epidemiological studies have depicted that continued use of non-steroidal anti-inflammatory drugs (NSAIDs) lower the possibilities of progress of AD and cunctation the onset of the disease. It has been stated that some NSAIDs spot pathological indication of AD by interacting with various pathways, inclusive of blockage of cyclooxygenase (COX) and incitement of the peroxisome proliferator-activated receptor γ. Various experimental studies depicts that a subgroup of NSAIDs such as ibuprofen, flurbiprofen, indomethacin and sulindac possess Aβ-lowering characteristics in both AD transgenic mice and cell cultures of peripheral, glial and neuronal origin. COX inhibition usually occurs at low concentrations *in vitro* (nM-low μm range) and the Aβ-lowering activity is seen at elevated concentrations (≤ 50 μm). Studies with flurbiprofen or ibuprofen in AD transgenic mice depict that the effect on Aβ levels or deposition are obtained at plasma levels similar to those obtained in humans at therapeutic dosage. Still, it remains a mistry whether substantial concentrations are reached in the brain. This is an important feature that will allow stating the dose-window and the treatment in future clinical trials. The amalgamation of anti-amyloidogenic and anti-inflammatory activities of certain NSAIDs may turn out a profile significantly appropriate to their clinical use as disease-modifying agents for the management of AD.

Keywords: Alzheimer's disease, β-amyloid, NSAIDs, COX.

D-126

Evaluation of *In Vitro* Cytotoxic Potentials of 2-hydroxy Chalcones against MCF7 and HCT116 cell lines

C. Mallikarjuna Rao, N. Kishan, Subhankar Biswas and Nitesh Kumar

Department of Pharmacology, Manipal College of Pharmaceutical Sciences, Manipal University, Manipal - 576104, Karnataka, India
mallik.rao@manipal.edu

Abstract:

In our previous study, several 2-hydroxy chalcones were synthesized and established for their anticancer activities against colon cancer cell lines (HCT116). In the present study, two potent compounds [1-(2,4-dihydroxy-phenyl)-3-(4-dimethylamino-phenyl)-propenone (C-1) and 1-(2-hydroxy-4-methyl-phenyl)-3-p-toli-propenone (C-2)] were selected and evaluated for their cytotoxic potential on MCF-7 (human breast cancer cells) and HeLa (cervical cancer cells) cell lines. The compounds were synthesized by Claisen Schmidt condensation reaction and were evaluated for their cytotoxicity in two cancer cell lines (MCF-7 and HeLa cells) and one normal cell line (HEK cell line -Human embryonic kidney cell line), following 48h exposure, using Sulforhodamine B assay. Scratch wound assay was performed on MCF-7 cell line to evaluate the anti-migratory potential of C-1 and C-2 after 24h and 48h of incubation. Based on the positive findings, the compound C-1 was selected and evaluated for its effect on different phases of the cell cycle in MCF7 and HeLa cell lines after 48h of treatment. Compound C-1 showed the non-selective cytotoxic effect on all tested cell lines with IC50 values of 27.55, 60.00 and 59.11 µM on MCF7, HeLa and HEK cell lines respectively. In scratch wound assay, doxorubicin, C-1 and C-2 significantly ($p < 0.05$) prevented the proliferation of cells compared to normal at both time points (24h & 48h). However, no significant difference was observed among Doxorubicin, C-1 and C-2 treatments. In cell cycle analysis, the compound C-1 showed cell cycle arrest in S-Phase at 60µM concentration only in HeLa cell lines. The compound C-1 possesses promising anticancer action.

Keywords: Anticancer, 2-hydroxy chalcones, Sulforhodamine B assay, Cell cycle, Scratch wound assay.

D-127

Evaluation of Antidiabetic Activity of Methanolic Extract of *Euphorbia Lopogona* by Using Streptozotocin Induced Model

T. Ravi Chander, H. Parameshwar and Y. Narasimha Reddy

Department of Pharmacology, Vaagdevi Pharmacy College, Warangal – 506002, Telangana, India
trc2884@gmail.com

Abstract:

Pancreas is one of the important organ of the body, it plays very important role in regulation of body functions. Various herbal medicines were used traditionally for diabetes. *Euphorbia lopogona* (Euphorbiaceae) is found from Southeast China to tropical Asia and India was traditional folk medicine in India and it is available throughout the South India. The Methanolic Plant extract of *Euphorbia lopogona (*MEL*) used to* conduct the study as selected doses 200 & 400mg. In this study we evaluated anti-diabetic activity against various diabetes induced models. Hyperglycemia was induced with streptozotocin, glibenclamide 10mg /kg b.wt. *p.o.* was used as standard and Leaves of *Euphoria lopogona* were selected for this study. MEL at a dose of 400 mg/kg b.w. showed significant oral glucose tolerance in normal rats and antihyperglycemic activity in streptozotocin induced type 2 diabetic rats. Overall result of the study revealed that leaves of *Euphoria lopogona (*MEL*)* possess marked hypoglycemic and antihyperglycemic activities and may have beneficial effects in type 2 diabetes mellitus.

Keywords: *Euphoria lopogona,* **streptozotocin, glibenclamide.**

D-128

Effect of Polyherbal Formulation on MCF-7 Breast Cancer Cell Lines

Deeparani K. Urolagin and S. Jayakumari

Research scholar, VISTAS VELS University, Tamil Nadu, Chennai, India
deepaurolagin@gmail.com

Abstract:

This experimental study is designed to evaluate the efficacy of naturally occurring plants in the prevention of chemically induced breast cancer using 7,12-dimethyl benz antracene (DMBA) in female rats.Here we are using 3 plants anticancer herbal plant parts. Ixora coccinea (JungleFlame) is a flowering plant in the family Rubiaceae. The flowers of Ixora coccinea are used against various disorders such as reddened eyes, eruptions, catarrhal bronchitis. Piper chaba (hippali) is a flowering vine in the family Piperaceae is native to South and Southeast Asia.It is having antimicrobial, antioxidant and anticancer activity. Grapes is a species of vitis vinifera family vitiaceae, is native to southern Europe and Western Asia.The major polyphenols of red wine (resveratrol, quercetin, and catechin) have been individually shown to have anticancer properties. Female rats were given single dose of DMBA/any inducing agent in vegetable oil by oral gavages, anesthetized with anesthetic agent by inhalation & pellet containing placebo explanted subcutaneously in dorsal area. Tumors are measured

by diagnostic agents. Different breast cancer cell lines obtained, cultured with antibiotics, incubated and colorimetric assay is applied. Asynchonomously growing cells are transferred into well cultured plates containing medium & incubated then assay is performed.Histopathological evaluation is done by using tissue in different solution. Tumors are evaluated by statistical equations & P value calculated at the end of experiment.

Keywords: *Ixora coccinea, Vitis viniferae,Piper longum,***Breast cancer.**

D-129

Analgesic Activity of Leaves of "Barringtonia Acutangula"

Biswabhushan Mishra, N T Pramathesh Mishra, Arnabaditya Mohanty and

P K Sahu

Siksha O Anusandhan University, Bhubaneswar – 751003, Odisha, India

bapu00bbm@gmail.com

Abstract:

The present study is undertaken to evaluate analgesic effect of petroleum ether extract of leaves of Baringtonia acutangula. Albino mice is used and doses of 200mg/kg and 400mg/kg body weight were used. Reaction time after 30min, 45min, 60min were observed. The result were compared with control group. Both the extract showed significant analgesic activity ($p<0.05$). Ethanolic extract is more effective than petroleum ether extract. Ethanolic extract of Baringtonia acutangula should show significant analgesic activity.

D-130

Modulation of Calcium Homeostasis and Insulin Secretion in Pancreatic Beta-Cells

Ashish Kumar Netam, Trilochan Satapathy and Bibhas Pandit

Columbia Institute of Pharmacy, Vill-Tekari, Near Vidhansabha, Raipur – 493111, Chhattisgarh, India
ashish.netam52@gmail.com

Abstract:

Disrupted pancreatic beta (β) cell function is a key event in the pathogenesis of diabetes mellitus, a metabolic disorder resulting in elevated blood sugar levels. Pancreatic beta cells are responsible for the secretion of insulin, which promotes the uptake of blood glucose into peripheral tissues. These cells are unique cells that secrete insulin in response to an increase in glucose levels, play a significant role in glucose homeostasis. Additionally, autocrine insulin signalling contributes to the maintenance of properly functioning β-cells. The insulin receptor tyrosine kinase is activated by many ligands and recruits insulin receptor substrates to its intracellular domain. These substrates can activate two major signaling pathways, the Protein Kinase B (PKB) Pathway and the Mitogen Activated Protein Kinase (MAPK) Pathway. Both signaling branches are suggested to be involved in the maintenance of β-cell function and survival. Depolarization leads to the opening of voltage-gated Na^+ channels and subsequently voltage-dependent Ca^{2+} channels. The increase in intracellular Ca^{2+} triggers the exocytosis of insulin-containing vesicles. Thus, electrical activity of pancreatic beta cells plays a central role in Glucose-stimulated insulin secretion. This approaches, we focus on the principal ionic channels involved in Glucose-stimulated insulin secretion and how classic and new proteins, hormones, and drugs regulate it.

Keywords: Pancreatic beta cells, Insulin, Glucose homeostasis, PKB and MAPK.

D-131

Pytochemical Screening of Methanolic Extract of Corchorus Olitorus

Dattatray Patil and Alokpal Jain

Deparment of Pharmacetical Sciences, Sarvepalli Radhakrishnan University, Bhopal - 462026, Madhya Pradesh, India
dkpatiljal28@yahoo.com

Abstact:

The arial part of plant material of extracts of *Corchorus olitorius*, the family Malvaceae, is commonly called *khudra*, the plant extensively used in Sudanese traditional medicine. The bioactive compounds present in the plant are responsible for the medicinal properties of the plant. The present investigation is aimed in screening the bioactive compounds present in the arial part of plant material of *Corchorus olitorius* an important ethnomedicinal plant. The qualitative analysis for the present phytochemicals was performed using methanolic extracts of plant of *Corchorus olitorius* plant by various standard techniques available. Phytochemical analysis revealed the presence of alkaloids, flavonoids, terpenoids, glycosides, steroids and phenols in methanolic extract. Since the plant contain high quantities of these new bioactive potential compounds, it is reliable to possess large number of pharmacological values

like antioxidants, antifungal, antibacterial, antiabortifacient, anti-inflammatory, antiulcer, diuretics activities and are being employed for the treatment of different ailments in the indigenous system of medicine.

Keywords: *Corchorus olitorius*, **Phytochemical, bioactive potential compounds.**

D-132

Inhibitory Effects of Ecstasy (MDMA) on Mirtazapine metabolism in Isolated Perfused Rat Liver Model

K.L. Naga Rani and D. Brahma Srinivas

Dept. of Pharmacy Practice, Hindu college of Pharmacy, Guntur - 522002, Andhra Pradesh, India
karasani.nagarani@gmail.com

Abstract:

Nowadays MDMA (3,4-methylendioxymethamphetamine), known as ecstasy, is widely abused among the youth because of euphoria induction in acute exposure. However, abusers are predisposed to depression in chronic consumption. Mirtazapine (MRZ), an antidepressant agent, may be prescribed in MDMA-induced depression. MRZ is extensively metabolized in liver by CYP450 isoenzymes. 8-hydroxymirtazapine (8-OH) is mainly produced by CYP2D6. N-desmethylmirtazapine (NDES) is generated by CYP3A4.MDMA is also metabolized by the mentioned isoenzymes and demonstrates mechanism-based inhibition (MBI) in association with CYP2D6. In the present study, our aim was to evaluate the impact of MDMA on the metabolism of MRZ in isolated perfused rat liver. The subjects of the study were categorized into two experimental groups. Rats in the control group received MRZ-containing Krebs-Henselit buffer (1 µg/ml) & treatment group received aqueous solution of 1 mg/ml MDMA (3 mg/kg) intraperitoneally 1 hour before receiving MRZ. Perfusate samples were analyzed by HPLC. Results showed 80% increase in the parent drug concentrations and 50% decrease in the concentrations of both metabolites in our treatment group compared to the control group. In the treatment group, Hepatic clearance (CL_h) and intrinsic clearance (Cl_{int}) showed 20% and 60% decrease when compared to control group. All findings prove the inhibitory effects of ecstasy on both CYP2D6 and CYP3A4 hepatic isoenzymes.

Keywords: Mirtazapine, Ecstasy, Isolated perfused rat liver model.

D-133

Pharmacological Evaluation of Triphala Churna in Streptozotocin (I.C.V.) Induced Dementia in Rats

Sandhya Badoni, Purabi Deka and Arun Kumar

Department of Pharmaceutical Sciences, Shri Guru Ram Rai Institute of Technology & Science, Patel Nagar, Dehradun - 248001, Uttarakhand, India
sandhyabadoni07@gmail.com

Abstract:

The aim was to investigate the memory improving activity of Triphala Churna hydro-methanolic fruits extract on learning and memory functions in Streptozotocin (I.C.V) induced Dementia in rats by using Morris water maze and elevated plus maze. AchE activity, lipid peroxidation, Superoxide dismutase, glutathione level of brain homogenate was estimated in control/ STZ (I.C.V)/ standard / Triphala Churna fruits extract treated rats. Albino wistar rats weighing 80-100 g were randomized into 7 equal groups as follows: normal group received normal saline (1ml/kg p.o.) , STZ treated group (3 mg/kg, i.c.v) were administered in two dosage regimen i.e. on first day and third day.), Standard group: Streptozotocin (3mg/kg i.c.v) + Vitamin E (100mg/kg/day p.o.) were administered , Standard group: Streptozotocin (3mg/kg i.c.v) + Rivastigmine (2mg/kg/day p.o.) were administered . The learning and memory impaired rats were treated with Triphala Churna Formulation 1, Triphala Churna Formulation 2 and Triphala Churna Formulation 3 (100 mg/kg p.o.). Administration of Triphala Churna fruits extract reinstated learning and memory impairment prompted by STZ (I.C.V) in the Elevated plus maze and Morris water maze. The level of brain AchE & brain lipid peroxidation was decreased and brain antioxidant enzymes such as glutathione, superoxide dismutase were increased. Triphala Churna fruits extract has improving effect on learning and memory impairment rats produced by Streptozotocin (I.C.V) and may have useful effect in the treatment of Dementia and Alzheimer's disease.

Keywords: Triphala Churna, AchE, Vitamin E, Rivastigmine, Streptozotocin (I.C.V.).

D-134

Scrub Typhus: Emerging Threat

Shalini Kumari, Jagdish Chand, Anmol Bhatia, Indu and L. Raju

Abhilashi College of Pharmacy, Tanda, Ner Chowk, Distt Mandi

– 175002, Himachal Pradesh, India
thakur.shalini978@gmail.com

Abstract:

Scrub typhus is a public health problem causing severe morbidity and mortality. Scrub typhus is an acute, febrile, infectious illness which is caused by ***Orientia*** (formerly rickettsia) ***tsutsugamushi***.. It is transmitted to humans by the bite of the larva of trombiculid mites (chiggers) which is a small Gram-negative, obligate intracellular organism almost microscopic, and red in colour. Infected chiggers are found particularly in areas of heavy scrub vegetation during the wet season. In India, the presence of scrub typhus has been known for several years. The disease is widely spread all over the country and was reported in several states out of which Himachal Pradesh is mostly affected. We recently reported an outbreak of scrub typhus in Himachal Pradesh. In an entomologic study in Himachal Pradesh, vector species *Leptotrombidium deliense* and *Gahrliepia* (*schoengastilla*) spp.had recorded. Scrub typhus has killed about 24 people in Himachal Pradesh, and affected about 855 others so far this year. It is an occupational disease frequently found in people who work in the fields and are in the habit of gardening and is alleged to have taken a serious turn this year due to laxity in controlling the mite. We reviewed out all the preventive measures for curing and treating this fatal diseases.

Keywords: Typhus, Larva, India, Himachal Pradesh, Treatment.

D-135

The Impact of *Carum Carvi* on Serum Prolactin and Cortisol in Nursing Rats: Preclinical Evidence towards Galactagogue Claim

Amit Gupta, Himanshu Bhusan Sahoo, Amrita Bhaiji and Alok Pal Jain

RKDF College of Pharmacy, SRK University, Bhopal - 462026, Madhya Pradesh, India
amitgbhopal@gmail.com

Abstract:

Aim: *Carum carvi*; is one of the earliest cultivated herbs in Asia, Africa and European countries. The aromatic substances of this herb have attracted to many researchers worldwide to experimentally validate to its therapeutic uses. This study was focused to investigate the galactagogue effect of aqueous extract of C. *carvi* seeds (ACCS) on *wistar* rats. Materials and Methods: Five groups of *wistar* lactating rats (200-250 g) were selected; each group carried six animals. Group I was treated as control (distilled water); Group II treated as standard (Domperidone - 2.5 mg/kg) and Group III, IV and V treated as test groups (administered orally with ACCS at 150, 300 and 600 mg/kg body wt.). All these experimental groups were continued with respective treatments for l4th day of parturition. During this 14 days period, the parameters like milk yield, body wt. of both pups and mother was measured daily. On 15th day, the serum prolactin and cortisol level was estimated from blood samples and total protein and carbohydrate content from the mammary gland of mother rats respectively and compared with control as well as standard group. Results: Oral administration of ACCS increased the milk yield, body weight (pups and mother rat), glycogen and protein content, serum prolactin and cortisol level as compared to the control animals. In addition, the galactagogue effect of ACCS was followed dose dependent manner as compared to standard. Conclusion: The present study revealed that the ACCS possesses significant galactagogue activity by enhancing milk production and prolactin concentration in rats.

Keywords: C. *carvi*, galactagogue, serum prolactin/ cortisol, glycogen.

D-136

Proteasome Inhibitor Bortezomib: A Double Edged Sword in Cancer Therapy

Devanshi Vaghela, J S Vaghela and Choudhary Anju R

Bhupal Nobles' College of Pharmacy, Udaipur - 313001, Rajasthan, India
devanshi.vaghela.71@gmail.com

Abstract:

Proteasome inhibitor Bortezomib have been gaining intense attention as an attractive target for cancer treatment. It promotes tumor cell death by degradation of key proteins. It is used as front line treatment for newly diagnosed multiple myeloma patients and for treatment of relapsed refractory multiple myeloma and mantle cell lymphoma. It is the first proteasome inhibitor anticancer drug. Its mechanism is through upregulation of NOXA, which is a proapoptotic protein, and NOXA may interact with the anti-apoptotic protein of Bcl-2 subfamily Bcl XL and Bcl-2 and result in apoptotic cell death in malignant cells. Another mechanism is through suppression of NF-kB signaling pathway resulting in down regulation of its antiapoptotic target genes.

Keywords: Proteasome inhibitors, bortezomib, multiple myeloma, cancer.

D-137

Genome Sequencing: An Emerging Tool in Medicine

Choudhary Anju Rooparam, J.S Vaghela and Anshu Sharma

Bhupal Nobles' College of Pharmacy, Bhupal Nobles' University, Udaipur - 313001, Rajasthan, India
choudharyanju900@gmail.com

Abstract:

Genome sequencing – reading our complete set of DNA instructions – is a powerful tool for understanding and diagnosing disease, and has become integral to precision medicine, a movement to bring the right treatment to the right person and the right time. Pharmacogenomics a relatively recent branch of Pharmacogenetics uses population genetic information to research, design and develop new drugs and explore the uses and dosage of these drugs in clinical practice. The knowledge of sequencing will help to cure many diseases. Genomic medicine is making an impact in the fields of oncology, pharmacology, rare and undiagnosed diseases and infectious disease. Oncology, in particular, is at the leading edge of incorporating genomics, as diagnostics for genetic and genomic markers are increasingly included in cancer screening, and to guide tailored treatment strategies.

Keywords: Genome sequencing, precision medicine, Pharmacogenomics.

D-138

Review on Use of Lysosome in Alzheimer's Disease

Dilsar Ilyas Gohil

Parul institute of Pharmacy and Research, Parul University
P.O. Limda, Ta.Waghodia, Vadodara - 391760, Gujarat, India
gohildilsar9624@gmail.com

Abstract:

Alzheimer's disease, most common type of dementia, is the progressive disease that destroys memory and other important mental function. Alzheimer's being the most common condition affecting around 1.6 million population in the world. In India more than 4 million people suffering from some form of dementia. With Top 10 reasons for the death in US which can not be cured, Prevented and slowed. Every 67 seconds someone in US is developing this disease. There is no known cure other than symtomatic cure for Alzheimer's. Lysosome is the primary degradative components responsible for clearing intracellular waste products and damage protein. Abnormal protein degradation and deposition induced by lysosomal dysfunction may be primary contributor to age related neurodegeneration. In Alzheimer's disease the formation of amyloid plaques inside the brain, which consist of toxic protein fragments called "β-amyloid" surrounded by swollen axon. Lysosome degrades old or demage component of the cell. Lysosomes need to be transported from axon to the cell body to get mature and degrade chemical burden. But in swollen axons they struck and accumulated inside the axon swelling associated with amyloid plaques and fails to mature. So use of lysosomes in cellular garbage disposal process is new therapeutic approch to prevent progession of Alzheimer's disease. In this approach it's possible that with earlier detection and treatment, it may be possible to prevent and delay Alzheimer's disease in the future.

Keywords: Lysosome, Alzheimer's disease, β-amyloid, Axon transport.

D-139

A Prospective Randomized Double Blind Study Evaluating the Role of Ramosetron in Prevention of Post-Spinal Shivering (PSS) in Obstetric Patients

Megha Garg and Rohit Kumar Varshney

Teerthankar Mahaveer College of Pharmacy, TMU, Moradabad – 244001, Uttar Pradesh, India
megha.723garg@gmail.com

Abstract:

Intra/post-operative shivering is frequently observed in parturients posted for elective cesarean delivery (C/D) under spinal anaesthesia. Several studies have advocated the anti-shivering effect of 5-HT_3 antagonists, although none has revealed convincing results. The mechanism behind anti-shivering effect of 5-HT_3 antagonists is that it acts by inhibiting serotonin reuptake at the pre-optic anterior hypothalamic region. The study aims to evaluate the prophylactic effect of a single intravenous dose of Ramosetron (0.3 mg), compared with placebo (NS), on the prevention of post-spinal shivering during elective C/D. The study involves 80 parturients of American Society of Anesthesiologists (ASA) physical status I/ II, posted for elective C/D under spinal anesthesia who were randomly divided into 2 equal groups; Group N: 0.9% normal saline (4 ml) immediately before induction of spinal anesthesia and Group R: Inj. Ramosetron (0.3 mg) diluted to 4 ml volume. Shivering at

any time on a [0–4] scale and total dose of Tramadol required for its treatment was recorded. The study also involves recording of haemodynamic parameters and incidence of nausea and vomiting. Statistically significant data was obtained while comparing incidence of shivering and maximum shivering at any time (p=0.001). A lower incidence of nausea and decreased total dose of Inj. Tramadol was also observed in Ramosetron group. Ramosetron (0.3 mg) advocated being an effective drug in preventing post-spinal shivering among parturients posted for elective C/D. Moreover, its role in preventing maternal nausea together with better haemodynamic parameters further supports the advantageous role of Ramosetron in our group of patients.

Keywords: Cesarean Section, Post-spinal Shivering, Ramosetron.

D-140

Bioassay-Guided Active Fractionation of a Novel Antitumor Agent from Methanolic Extracts of *Cuscuta reflexa*

Subhrajit Biswal, D Pradhan and Shantirmaya Mohapatra

UDPS, Utkal University, Bhubaneswar - 751004, Odisha, India
subrarchana143@gmail.com

Abstract:

Cuscuta Reflexa species (Fam: Convolvulaceae) have been used in both Ayurvedic and Traditional Indian Medicine (ITK); The phytochemical study of *C reflexa* was under taken with small scale extraction of stem (300 g) for cytotoxic screening and dereplication purpose. The crude ethanolic extract of *C reflexa* was partitioned into different fractions of hexane, dichloromethane and methanol. All the five fractions CR & CR1 were screened for their anti-proliferative effect in the disk diffusion assay (In vitro) against six cancer cell lines. The bioassay-guided isolation of a new antitumor agent (cuscutin) was carried out from the ethanolic extract (CR) of *C reflexa*. Its structure was elucidated on the basis of extensive spectroscopic techniques (IR, MS and NMR). The pure compound 1 was evaluated against twelve cell cancer lines for the determination of its antiproliferative potency. In disk diffusion assay the dichloromethane fraction (CR) showed excellent activity at very low concentration. The cuscutin exhibited strong and selective activity against two cancer cell lines with the IC50=7.8 µg/ml and 11.0 µg/ ml respectively. The selectivity and potency of the pure compound 1 was in concordance with the activity profile of the fraction CR and ethno-medicinal uses of this plant.

Keywords: Convolvulaceae; Cuscuta reflexa; Stem; Cytotoxicity; Crude fractions; cuscutin.

D-142

Exercising Your Brain: A Review of Human Brain Plasticity and Training-Induced Learning

Avinash PVS and A. Prathyusha

Hindu College of Pharmacy, oppsite to Bhaghawan Bala Kuteer School, Nallapadu, Guntur – 522004, Andhra Pradesh, India
avinashpvs57@gmail.com

Abstract:

Human beings have an amazing capacity to learn new skills and adapt to new environments. However, several obstacles remain to be overcome in designing paradigms to broadly improve quality of life. Arguably, the most notable impediment to this goal is that learning tends to be quite specific to the trained regimen and does not transfer to even qualitatively similar tasks. This severely limits the potential benefits of learning to daily life. This review discusses training regimens that lead to the acquisition of new knowledge and strategies that can be used flexibly across a range of tasks and contexts. Possible characteristics of training regimens are proposed that may be responsible for augmented learning, including the manner in which task difficulty is progressed, the motivational state of the learner, and the type of feedback the training provides. When maximally implemented in rehabilitative paradigms, these characteristics may greatly increase the efficacy of training.

D-143

Evaluation of Protective Effect of Darunavir against Neurodegeneration in an Aβ Plaque Model of Alzheimer›s Disease

Swati Sharma, Nymisha Yalavarthi and R. Vadivelan

Department of Pharmacology, JSS college of Pharmacy, (A Constituent College of Jagadguru Shri Shivratheshvara University, Mysuru) Ootacamund – 643001, Tamil Nadu, India
sharmaswati2611@gmail.com

Abstract:

Alzheimer's disease (AD) is a progressive, degenerative disorder that attacks the brain's nerve cells, or neurons, resulting in loss of memory, thinking and language skills, and behavioral changes. Most crucial step in the development of AD is the formation of Aβ plaques. These depositions are sourced from APP processing by proteases. β and γ-secretase

involves in improper cleavage of APP resulting in Aβ plaques formation. Presenilins bearing aspartyl site as the active site is the major component in gamma secretase. Darunavir is a HIV protease inhibitor. Alpha, beta and gamma secretases and HIV-protease also belongs to the same class of enzymes called the aspartyl protease enzyme family sharing with pepsin, cathepsin and renin. In this study I.C.V administration of Aβ plaques caused a significant memory deficit as evaluated in the radial arm maze, and IR actimeter, whereas, Biochemical parameter i.e. presinilins are estimated by using RT-PCR kit. Histology of hippocampus is taken at the end of the study to determine the neuronal Density. Chronic administration of Darunavir (60 and 120 mg/kg) for a period of four weeks Starting after 7days of Aβ plaques administration resulted in decreased presenilin levels and improved neuronal count and memory retention. Therefore, the remarkable therapeutic effect of Darunavir, mediated through inhibition of presinilin action on processing of APP in brain indicated that Darunavir at chronic dose levels was able to bypass blood brain barrier and was able to show neuroprotective activity.

Keywords: Aβ plaques formation, Presenilins, Darunavir, neuroprotective activity.

D-144

Evaulation of Neuropharmacological Profile of *Butea Monosperma*

Satyabrata Dash, Prashant Tiwari and Pratap Kumar Sahu

School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar - 751003, Odisha, India
satyabratadash97@gmail.com

Abstract:

The goal of Neuropharmacology is to apply information about drugs and their mechanisms of action, develop safer and more effective treatments and eventually curative and preventive measures for a host of nervous system abnormalities. Neuropharmacological profile is broadly divided into behavioural, neurological and autonomic changes after administration of increasing doses of drugs. Behavioural profile includes awareness, mood and motor activity. Neurological Profile includes CNS excitation, posture, motor incoordination, muscle tone and reflexes. Autonomic Profile includeswrithing, pupil size, palpebral opening, exophthalmoses, urination, salivation, piloerection, hypothermia, skin color and heart rate. Other activities includes respiratory rate, lacrimation and death etc. So, considering above facts as per Irwin test. We administered methanolic extract of *B. Monosperma* (100mg/kg, 500mg/kg, 1000mg/kg) body weight and observed animals after 1, 2, 3 and 4 hours after drug administration. We found significant effect of methanolic extract of *B. Monosperma* on neuronal profile and we observed no neuronal toxicity (any abnormal behaviour). Hence, from the result of Neuropharmacological profile study, the doses of drug can be decided to proceed for further study.

Keywords: Neuropharmacology, *Butea monosperma*, CNS.

D-145

Pharmacological Evaluation of Ethyl 5-Acetyl-4-Methyl-2-(Tosylamino) Thiophene-3-Carboxylate for Its Anti-Inflammatory, Antioxidant and Analgesic Activity

Anchitha Teresa George, Jinumol K S, Winson Sam and Girish Kumar K

College of Pharmaceutical Sciences, Govt. Medical College, Thiruvananthapuram – 685581, Kerala, India
anchithateresa@gmail.com
assistant.professor@gmail.com

Abstract:

In the present study, Ethyl 5-acetyl-4-methyl-2-(tosylamino) thiophene-3-carboxylate was synthesized and evaluated for Anti-inflammatory, Antioxidant and Analgesic activities. The *in vitro* anti-inflammatory studies by SRBC Membrane Stabilization Assay, Cyclooxygenase (COX) inhibition assay showed significant activity. The newly synthesized derivative showed significant protection against hypotonicity induced lysis of erythrocyte membrane. In COX inhibition assay the IC_{50} value was found to be 102.95µg/mL. The antioxidant potential of the compound was revealed by DPPH radical Scavenging activity and nitric oxide scavenging method with IC50 values 102µg/mL and 47.22µg/mL respectively. The *in vivo* anti-inflammatory activity was confirmed by carrageenan induced rat hind paw edema.Different concentration of test derivative, 200mg/kg, 400mg/kg, 800mg/kg body weight when given orally as a suspension the paw volume were reduced by 28 ± 2.9, 42 ± 2.7 and 63 ± 2.9 % respectively after 3rd hour. *In vivo* screening for analgesic activity using Eddy's hot plate and tail immersion test in rats also showed significant activity. Increase in reaction time at 120 min was found to be 9.7±0.21, 8.8±0.31, 9.5±0.34, 9.7±0.56 for standard, low dose, middle dose and high dose group respectively. In tail immersion, the increase in reaction time at 120 minute was found to 8.8± 0.48, 9.0±0.52 and 10±0.49 for low dose (200mg/kg), middle

dose (400mg/kg) and high dose (800mg/kg) respectively. Thus the given compound may have significant anti-inflammatory, antioxidant and analgesic activities.

Keywords: Ethyl 5-acetyl-4-methyl-2-(tosylamino) thiophene-3-carboxylate, Cyclooxygenase, DPPH, $IC_{50,}$ Eddy's hot plate, anti-inflammatory, antioxidant and analgesic.

D-146

In vitro Pharmacological Evaluation of 4,5-Dimethyl-2-[(phenylsulphonyl)amino] thiophene-3-carboxamide for Anticancer and Anti-Angiogenic Activity

Vismaya, Ajisha J L, Winson Sam and Girish Kumar K

College of Pharmaceutical Sciences, Government Medical College, Thiruvananthapuram - 685581, Kerala, India
ajishajyothis@gmail.com

Abstract:

4,5-Dimethyl-2-[(phenylsulphonyl)amino]thiophene-3-carboxamide (DMGS1) was designed and synthesised and PASS analysis showed significant cytotoxic activity. After subjected to chemical characterisation, the compound was subjected to *in vitro* cytotoxicity study by Mitochondrial Membrane Potential Assay by TMRE staining, Nuclear staining using DAPI, Comet assay and DNA fragmentation assay. The *in vitro* anti-angiogenic activity was evaluated by Matrigel-based tube formation assay. The treatment of MCF7 and HT-29 cells with DMGS1 caused the loss of mitochondrial membrane potential, nuclear condensations and fragmentations by TMRE staining and DAPI staining respectively. The MCF7 cells also showed loss of DNA integrity upon DNA fragmentation assay and Comet assay. All these results showed significant anticancer activity of the synthesised compound. On Matrigel-based tube formation assay, 50 µL of 1 µg/µL of DMGS1 prevented the tube formation and appeared unorganised cells. This indicates that DMGS1 may have anti-angiogenic effect. All these results indicate that the test compound 4,5-Dimethyl-2-[(phenylsulphonyl)amino] thiophene-3-carboxamide may have significant anticancer and anti-angiogenic activity.

D-147

Anti-Angiogenesis Effect of *Moringa oleifera* *L. in* Chick Chorioallantoic Membrane (CAM) Angiogenesis Assays

Navaf MT, Vengal Rao Pachava and Praveen Thaggikuppe Krishnamurthy

Department of Pharmacology, JSS College of Pharmacy, Ooty, Tamilnadu, India
(A Constituent college of Jagadguru Sri ShivarathreeswaraUniversity, Mysore, Karnataka, India)
navafpnr@gmail.com

Abstract:

The aetiology of cancer involves a multitude of biochemical and pathophysiological abnormalities, caused as a result of various genetic and environmental factors making it challenging to bring out an effective therapy. Amongst these, angiogenesis portrays a crucial role in the survival and subsequent metastases of tumours, eventually making it a target for anti-cancer drug discovery. Despite the availability of many drug candidates with anti-angiogenic activity, they often tend to produce complications. Based on our previous findings, ethyl acetate (EA) extract of *Moringaolei*fera has shown significant cytotoxicity against vero cells *invitro*. In the current study, EA extract of *M. oleifera* was employed in Chick Chorioallantoic Membrane (CAM) assay to evaluate anti-angiogenic activity. The assay was performed using 1µg, 10µg and 100µg concentrations of EA extract of *M. oleifera* to establish a dose response relationship. The findings revealed a significant dose dependent inhibition of angiogenesis with maximum inhibition at highest tested dose level. In conclusion, EA extract of *M.oleifera* demonstrated significant anti-angiogenic activity.

Keywords: Anti- angiogenesis, *Moringaoleifera*, Chorioallantoic membrane assay.

D-148

Corticosteroids Induced Psychiatry Distrubances

Chaitanya Dakarapu

Hindu College of Pharmacy, Amaravathi Road, Guntur - 522002, Andhra Pradesh, India
chaitudakarapu@gmail.com

Abstract:

Corticosteroids are widely used to relieve signs and symptoms arising from many diseases, including common inflammatory and autoimmune disorders affecting a number of organ systems. However, corticosteroids also induce significant adverse effects; in particular, a range of severe psychiatric

adverse effects may occur including delirium, depression, mania, psychosis and cognitive/memory impairment. These adverse effects occur in up to 60% of patients taking corticosteroids and recent studies show an increased rate of psychopathologies in this population. Long-term adverse effects on mood and behavior are severely debilitating, thereby influencing the quality of life, employment and health status of individuals taking corticosteroids. Strategies used to manage corticosteroid-induced psychiatric disturbances through psychotropic drugs vary significantly. This commentary summarizes existing literature on mechanisms underlying corticosteroid-induced psychiatric adverse effects and evidence associated with using psychotropic drugs to manage these effects. Despite its importance, there is an absolute dearth in the literature examining pharmacists' understanding and perceptions of psychiatric adverse effects of corticosteroids. Educational programs need to be implemented so that pharmacists can counsel patients about how to recognize corticosteroid-induced psychiatric disturbances. Physicians do not consistently alert patients to watch for behavioral changes, and patients may feel that mood changes they experience fall within the category of 'normal behavior,' and thus are less likely to report them. Given that patients taking corticosteroids usually have complex medical histories, discussions of adverse effects with pharmacists are vital to improve health outcomes in this population.

Keywords: Corticosteroids; Psychiatric disturbances; Psychotropic drugs.

D-149

Evaluation of Novel Glitazone for Its Anti-Diabetic Activity and Diabetes Induced Cognitive Impairment

Ande Dinesh Kumar and S.N Manjula

Department Of Pharmacology, JSS College Of Pharmacy, Mysuru – 570015, Karnataka, India
andedinesh86@gmail.com

Abstract:

Type-2 Diabetes being a chronic disorder characterized is by hyperglycemia, hypocholesteremia and hypertriglyceridemia, caused by insulin insufficiency or insensitivity by body cells. Glitazones being PPAR gamma targeted drugs are said to increase the insulin sensitizing efficiency of the cells. This study aimed at creating an animal model mimicking the type-2 diabetes condition in humans for which High fat diet and multiple dose of streptozotocin induced diabetes model which was tested against a novel glitazones from a newly synthesized series. And diabetes associated cognitive impairment was assessed after the treatment of the drug. The drug was effective against the increased glucose levels in the body and even the cholesterol and triglycerides levels drop down after the treatment which was markedly increased after the High fat diet and multiple dose of streptozotocin model. This drug was proven effective against the diabetes associated cognitive impairment by this study.

Keywords: Diabetes, Cognitive impairment, Glitazones.

D-150

Current Pharmacologic Management Strategies in Aneurysmal Sub Arachnoid Hemorrhage

MD. Arshad, P. Naveen Kumar and Ch. Malathi Suvarna

Gland Institute of Pharmaceutical Science, Sy. No: 551, Shangri-la, Kothapet (village), Shivampet (Mandal), Medak – 502220, Telangana, India
mohammadarshad1218@gmail.com

Abstract:

Aneurysmal sub arachnoid hemorrhage (aSAH) is a particularly devastating neurologic insult as the majority of patients suffer morbidity and mortality at the time of rupture, and from subsequent complications. While at least one-third of patients die shortly after experiencing a ruptured cerebral aneurysm, ~60% of survivors develop debilitating neurologic deficits throughout their course of treatment. In numerous cases, spastic narrowing of large cerebral vessels, termed cerebral vasospasm, has been associated with delayed cerebral ischemia (DCI) and stroke 4 to 21 days post-hemorrhage. Despite decades of animal research and numerous clinical trials, highly effective pharmacological treatment options for aSAH patients are lacking. Herein, results from clinical trials examining pharmacologic therapies for delayed cerebral vasospasm, DCI and functional outcomes in aSAH patients are discussed, including the current status of nimodipine and other dihydropyridines, endothelin receptor antagonists, magnesium sulfate, and 3-hydroxy-3-methyl-glutaryl-CoA reductase inhibitors.

D-151

Evaluation of Psychosis Causing Potential of Various Carbapenems in Mice Models

Alka Tresa Sebastian, Biniya Balakrishnan and Binil Raj S S

College of Pharmaceutical Sciences, Government Medical College, Thiruvananthapuram - 695011, Kerala, India
alkatresaseb@gmail.com

Abstract:

Carbapenems are β – lactam antibiotics which exhibits broad spectrum activity. In recent years, several case reports were published about the Carbapenems neuronal toxicity including various psychotic disturbances such as hallucinations and delusions. No scientific study is available to explain the psychosis causing potential of various Carbapenems. This work was designed to evaluate the psychosis causing potential of various parenteral Carbapenems available in India such as Imipenem, Meropenem, Ertpenem and Doripenem. Therapeutic, sub-therapeutics and three times therapeutic dose of Carbapenems were administered intra peritoneally for 14 days. Evaluation of psychosis causing potential of Carbapenems was done using different mice models such as forced swim test, tail suspension test, elevated plus maze, hole-board test, mirrored chamber test, open field habituation test, novel object recognition test stereotypy causing potential, evaluation of muscle grip strength and locomotor activity. Our study revealed that Imipenem-Cilastatin in both therapeutic and three times therapeutic dose produced significant depression like effect in mice models. Imipenem-Cilastatin and Ertapenem at therapeutic dose produced a significant anxiogenic activity and Imipenem-Cilastatin produced impaired cognition in novel object recognition and open field habituation test at therapeutic and three times therapeutic dose. Increased rearings are also observed with Carbapenems which are studied in all doses of stereotypy evaluation. Study in various mice models revealed that Carbapenems especially Imipenem-Cilastatin produced significant depression, anxiety, cognition impairment and stereotypic behaviour. So this drug should be used with caution. In our study Meropenem was found to be safe compared to other Carbapenems.

Keywords: Carbapenems, Psychosis, Imipenem-Cilastatin.

D-152

Hepatoprotective Activity of Homeopathic Dilution *of Chionanthus virginica in* Acetaminophen Induced Liver Toxicity in Zebrafish (*Danio rerio*)

Shaikh Heba, Shaikh Ayman, Shaikh Anam, Aafiya Dadan and Shaikh Abusufyan

School of Pharmacy, AIKTC, New Panvel - 410206, Maharashtra, India
shaikhheba@gmail.com

Abstract:

Liver is the important organ responsible for vital functions like storage, metabolism, detoxification etc. Acetaminophen is the most common drug used for the treatment of fever. At higher dosage it alters the enzyme level which lead to hepatotoxicity. In the present study, we aimed to study protective effect of homeopathic dilution of *Chionanthus virginica* against acetaminophen induced liver injury in zebrafish. Three specific biomarkers such as liver degeneration, changes in liver size and yolk sac retention were used for assessing hepatotoxicity induced by acetaminophen in zebrafish larvae. Treatment with homeopathic dilution of *Chionanthus virginica* significantly ($P<0.05$) restore acetaminophen induced liver degeneration, change in liver size and yolk sac retention in zebrafish larvae which indicate its hepatoprotective activity.

D-153

Pathophysiology of Migraine: A Tale of Frustation

Muskan and Milind Parle

Department of Pharmaceutical Sciences, GJUS&T, Hisar, Haryana, India
muskanbindal5@gmail.com

Abstract:

Migraine is a mysterious disorder characterized by pulsating headache, usually restricted to one side of the head. The word Migraine is derived from Greek word *hemikrania* refers to pain on one side of the head. It has been ranked 19th in the worldwide diseases causing disabililty by World Health Organisation. Typical attack of migraine are characterized by severe throbbing head pain, sensitivity to light (photophobia) , sensitivity to sound (phonophobia) , nausea , vomiting and exacerbation of pain by head movement. There are various pathophysiological mechanisms entailed in the development of migraine such as the role of cortical spreading depression, abnormal brain stem activity, trigeminal nerves, calcitonin gene related peptide , nitric oxide , serotonin receptors , oxidative stress and mitochondrial dysfunction. It can be treated by indulging in acupressure, drugs therapy and home remedies. Drugs used in prophylaxis of migraine are β-adrenergic blockers, α-2 receptor, adrenergic agonists , anti-epileptics , tricyclic antidepressants , calcium channel blockers , cycloheptadiene , angiotensin converting enzyme/receptor inhibitors and 5-HT antagonist. The drugs used in the treatment of migraine are 5HT1B/1D agonists, analgesics, NSAIDS , antiemetic , ergotamine , dihydroergotamine , anti-emetics , dopamine

antagonists and corticosteroids. The drugs block the activity of a molecule called calcitonin gene-related peptide , or CGRP are used in the sudden attack of migraine. In the present poster , a humble attempt has been made to highlight the underlying pathophysiological mechanisms and treatment of migraine.

D-154

Implication of HDAC and GSK3β in Insulin Resistance Induced Neurodegeneration

Violina Kakoty, Sruthi Ramagiri, Sourabh Sharma and Rajeev Taliyan

BITS Pilani, Rajasthan, India
pompykakoty666@gmail.com

Abstract:

Introduction: Insulin resistance is a metabolic syndrome that is proven to give rise to neurodegenerative disorders including Parkinson disease (PD). PD is known to affect certain areas of the brain like substantia nigra which eventually damages hippocampus causing cognitive dysfunction. Epigenetic modulation during chronic stress and an increased glycogen synthase kinase 3β (GSK3β) have been implicated in metabolic disorders. Therefore, this study was undertaken to investigate the neuroprotective effect of low dose combination of HDACi (SAHA) and GSK3βi (Indurubin 3-monoxide) in experimental PD. Material and methods: High fat diet (HFD) model and low dose of 6-hydroxy dopamine (6-OHDA) was used to induce PD. Behavioral parameters were accessed using rotarod, narrow beam walk test, morris water maze test and passive avoidance task. Proinflammatory cytokines as a marker of neuro-inflammation i.e tumour necrosis factor-α (TNF-α) and interleukin-6 (IL-6) were used. Oxidative stress was analyzed using standard marker i.e malonyldialdehyde (MDA) and antioxidant level. Results: HFD fed animals with low dose of 6-OHDA administration have shown an increased levels of TNF-α, IL-6 and MDA while antioxidant enzyme levels of reduced glutathione was significantly reduced as compared with control animals. Moreover, behavioral abnormalities and cognitive deficits were observed in HFD fed plus 6-OHDA treated animals, using rotarod, narrow beam walk test, MWM and passive avoidance test, indicating poor grip strength, muscle coordination, gait abnormalities and cognition due to basal ganglia and hippocampal damage. However, after treatment with a combination of low dose HDACi and GSK3βi, an improvement in performance of behavioral tasks, grip strength, muscle coordination, gait abnormalities and cognition were observed along with reduction in oxidative stress (MDA) and neuroinflammation (IL-6, TNF- α). Conclusion: Based on the above results it can be suggested that the low dose combination of HDACi and GSK3βi can be used for the treatment of PD.

D-156

Diet Restriction Influences on Diabetic Rat Kidneys: Histological Evidences

Pawan Krishan, Gaaminepreet Singh and Onkar Bedi

Department of Pharmaceutical Sciences and Drug research, Punjabi University, Patiala, Punjab, India
pawankrishan@gmail.com

Abstract:

In the present study impact of calorie restricted diet was tested on the renal morphological changes in type- 1 diabetic rats. Diabetes induced persistent hyperglycemia can impair tissue antioxidant defense, mitochondrial dysfunction and inflammatory infiltration. These pathological events may further disrupt the adaptive processes that manifest as irreversible histological alterations in kidneys. Diet restriction is a widely accepted therapeutic approach for the treatment of variety of disease including cancer, hypertension, neurodegenerative disease. However limited studies have explored the influence of dietary restriction intervention on renal morphological changes occurring in type-1 diabetic rats. Induction of type-1 diabetes by streptozotocin administration caused marked hyperglycemia that remained constantly elevated through the four weeks of study period in rats fed *ad libitium* diet. Hematoxylin and eosin staining of kidney sections from diabetic rats revealed glomerular swelling, tubular vacoulation, and degenerative changes that are the hallmark of the glomerular injury. Dietary restriction treatment did not cause any significant changes in glucose levels or any deleterious changes in kidney sections from control rats. The diabetic rats treated with restricted diet exhibited significantly lower hyperglycemia levels compared to diabetic rats fed *ad libitium* diet but both these groups presented glucose levels which remained significantly higher as seen against the control rats. Dietary restriction exposure completely prevented any histological alterations in diabetic kidney sections as observed by the absence of glomerular swelling, tubular vacoulation and mesangial expansion.

Keywords: Diet restriction, nephropathy, type-1 diabetes.

D-157

Development of Natural Polymer Hydrogel Films for Sustained Delivery of Bioactive

Satish Patel, Manju Singh and Deependra Singh

University institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur – 492010, Chhattisgarh, India
satishpatel05nov@gmail.com

Abstract:

Ursolic acid entrapped chitosan hydrogel (UACH) films were prepared by solution cast method. UACH films were characterized by scanning electron microscopy, Fourier transform infrared spectroscopy, equilibrium water content, Water vapor transmission rate and *in vitro* release studies using dissolution apparatus. SEM confirmed presence of the uniform porous network of both blank and UACH films. The incorporation of ursolic acid in hydrogel was confirmed FTIR. The UACH film was smooth, flexible, non-brittle and showed excellent swelling ability. EWC (87.60%) and WVTR (2468 ± 32.8) met the condition of ideal wound dressing. The biological activity of ursolic acid was assessed by antioxidant and antibacterial assay. Antioxidant assay confirmed that ursolic acid and UACH film have excellent antioxidant properties by scavenging both radicals at stable increasing rate which increases with time due to fixed release of ursolic acid. Antibacterial activity of ursolic acid in UACH film was found to be retained as observed by disc diffusion method. These observations shown that chitosan hydrogel film can be an ideal delivery system for sustained released of ursolic acid.

Keywords: Chitosan, Hydrogel, Ursolic acid.

D-159

Novel Neuroprotective Mechanism of Flupirtine against 3-Npa Induced Memory Impairement and Motor Incordination in Experimental Model of Huntington's Disease

Avnesh Kumar, Vipin Kumar Garg and Rubi Rani

Department of Pharmaceutical Technology, Meerut Institute of Engineering & Technology, Meerut – 250005, Uttar Pradesh, India
avnesh.singh@miet.ac.in

Abstract:

In this study, we have evaluated the effect of Flupirtine on behavioural and oxidative marker in 3-Nitropropanoic Acid (3-NPA) induced Huntington's disease in rats. Exposure of rats to 3-NPA have deleterious consequences on the brain of rats. 3-NPA is capable of inducing Huntington's disease in rats which results in neurobehavioural aberrations. Experimental rats recieved a single dose of 3-NPA (10 mg/kg, intra-peritoneally) upto 14 days. Therapeutic group were given 50 mg/kg as low dose and 100 mg/kg as high dose of Flupirtine. While the prophylactic group first recieved the Flupirtine (50 &100 mg/kg, orally) followed by the administration of 3-NPA (10 mg/kg, i.p). Rats were subjected to behavioural testing to measure motor co-ordination, locomotor activity, anxiety, and cognition on various days during the experimental work. Flupirtine increases the body weight, Retention time, locomotor activity, muscle grip strength and cognition improvement but decreases the anxiety dose dependently in both therapeutic and prophylactic groups. At the end of the study animals were sacrificed and subjected to biochemical estimation by brain tissue homogenate. The levels of GSH and CAT were increased but the levels of MDA and SOD were decreased dose dependently in both therapeutic and prophylactic groups. In conclusion, this study, suggests neuroprotective and memory enhancing effects of Flupirtine in a rat model of HD. These effects might be due to its NMDA receptor antagonist activity, antioxidant and cholinesterase inhibitory activities.

Keywords: 3-Nitropropanoic acid, Flupirtine, Huntington's disease.

D-160

Cardioprotective Potential of MHY-1485 an mTOR Activator against Ischemia/Reperfusion Injury in Ovariectomized Female Rat Heart

Avileen Kaur and Saurabh Sharma

Cardiovascular Division, Department of Pharmacology, I. S. F. College of Pharmacy, Moga - 142001, Punjab, India
avileenkaurbrar@gmail.com

Abstract:

Aim: The present study has been designed to investigate the pharmacological preconditioning potential of mTOR in estrogen deficient ischemia/reperfusion (I/R) injured rat heart. Material and Methods: Estrogen deficiency was produced in female wistar rats by surgical removal of both ovaries and these animals were used four weeks after the surgery. Isolated rat heart was subjected to 30 min ischemia followed by 120 min of reperfusion (I/R). The heart was subjected to pharmacological preconditioning with the mTOR activator MHY-1485 (1-(2-aminocarbonylbenzofuran-5-yl) piperazine) (2μM). BEZ-235 (3-(4-chlorobutyl)indole-5-carbonitrile), an mTOR inhibitor was also given in the last episode of reperfusion before I/R. Myocardial infarction was assessed in terms of increase in lactate dehydrogenase (LDH), creatinine kinase-MB (CK-MB), myeloperoxidase (MPO) level and infarct size (triphenyltetrazolium chloride staining). Immunohistochemistry

analysis was done for assessment of tumour necrosis factor (TNF)-α level in cardiac tissue. eNOS and mTOR expression were estimated by rt-PCR.

Results: Pharmacological preconditioning with MHY-1485 significantly attenuated I/R-induced myocardial infarction, TNF-alpha level, release of LDH and CK-MB and increased mTOR and eNOS expression as compared to ovariectomized I/R control group. However, BEZ-235 prevented the ameliorative effect of estradiol that shows mTOR plays an important role in preconditioning effect. Thus, it may be concluded that mTOR has a protective preconditioning potential against I/R injury.

Keywords: BEZ-235, Estradiol, Ischemic preconditioning, Ischemia reperfusion injury, MHY-1485, Ovariectomy.

D-161

Nephro and Hepatoprotective Effects of *Lepidium meyenii root powder*

Ravinder Khatri, Deepa Khanna and Sanjeev Kalra

Rajendra Institute of Technology and Sciences, Department of Pharmacology, Sirsa -125055, Haryana, India
7drdeepa@gmail.com

Abstract:

Carbon tetrachloride, a clear, colorless, volatile, heavy and nonflammable industrial halomethane, which is found in low levels in ambient air and exhibits the capacity for free radical generation thus causing kidney and liver injuries in rats. CCl_4 produces the highly toxic trichloromethyl free radical (•CCl3) and/or trichloromethyl peroxyl free radical (•OOCCl3). These radicals induce renal injury and hepatic injury because free radicals bind to intracellular proteins, leading in turn to protein denaturation, lipid peroxidation in the cell membrane, and oxidative DNA damage respectively. Histology of CCl_4-treated group showed showed glomerular and tubular necrosis as well as severe loss of hepatic architecture. *Lepidium meyenii* commonly known as peruvain ginsing or Maca is an annual herbaceous plant belonging to the ethnic group of Lepidieae in the Brassicaceae family. In the present investigation administration of CCl_4 (1 ml/kg, *i.p.*, once) significantly produce nephro-hepatic toxicity as assessed by histological changes in kidney and liver. Pretreatment of *Lepidium meyenii* (125mg/kg/day and 250mg/kg/day, *p.o.*, 10 days) prevented the kidney and liver injury in dose dependent manner by showing significant histological alterations.

Keywords: Carbon tetrachloride, ***Lepidium meyenii,*** **Maca.**

D-162

Macrophages: From Immunity to Heart Healing

Varsha Singh

Department of Pharmaceutical Sciences, Dr. Hari Singh Gour Central University, Sagar – 470003, Madhya Pradesh, India
vs01411@gmail.com

Abstract:

Macrophages, the white blood cells are primarily known for removing pathogens, cellular debris and other unwanted materials from the body. According to a research it was found that macrophages are also essential for the healthy functioning of the heart by helping conduct the electric signals that coordinate the heartbeat. They are found in tissues throughout the body and have recently been shown to have additional functions related to the tissues where they reside. While macrophages are required for healing damaged tissues in the heart, their presence within healthy heart muscle suggests a role in normal heart function. Overall, the findings suggest that cardiac macrophages are essential participants in the cardiac conduction system and that changes in their numbers or properties may contribute to heart rhythm abnormalities.

Keywords: macrophages, coordination of heartbeat , heart rhythm abnormalities.

D-163

Anticonvulsant Potential of Novel Furanocomarin Derivatives and Their Structure Activity Relationship

Gurjit Singh, Neha Sharma, Anudeep Kaur, Palwinder Singh and Rajbir Bhatti

Department of Pharmaceutical Sciences, Guru Nanak Dev University, Amritsar, Punjab, India
rbhatti75@gmail.com

Abstract:

Furanocoumarins are an important class of secondary plant metabolites occuring naturally and may be synthesized from linear (psoralens) or angular (angelicins) condensation of a coumarin with a furan ring. The current investigation is aimed at exploring the anticonvulsant action of furanocoumarin derivatives in experimentally induced convulsions, modulation of voltage gated sodium channel (VGSC), Ca^{2+} channel and nitric oxide by furanocoumarin derivatives and effect of furanocoumarin derivatives on memory impairment

and depression on swiss albino mice and structure activity relationship (SAR) for the synthesized furanocoumarin derivatives. Convulsions were induced by i.p. administration of pentylene tetrazole (50 mg kg^{-1}). Amongst all the synthesized furanocoumarin derivatives FC-5 and FC-3 derivatives were found to have anticonvulsant potential. Pretreatment with L-arginine was found to reverse the protective effect of FC-5 treatment on mild jerk onset, mild jerk frequency, seizure onset and duration of tonic clonic phase. Furthermore, treatment with veratrine (VGSC modulator), A23187/Ca^{+2} ionophore was found to reverse the anticonvulsant effect of the furanocoumarins. Therefore it may tentatively be concluded that anticonvulsant potential of furanocoumarin derivative may be mediated by complex interplay of VGSC, Ca^{2+} channels and NO.

D-164

Neuropathic Pain-Amelioration through Flavonoids

Bhawna Gulliya and A.C. Rana

Institute of Pharmaceutical Sciences, Kurukshetra University, Kurukshetra - 136119, Haryana, India
bhawnagulliya28@gmail.com

Abstract:

Neuropathic pain develops as a result of lesions or disease affecing the somatosensory nervous system either in the periphery or centrally. There are many underlying mechanisms including increase firing of partially damaged neurons, increased number of sodium channels and impairement of inhibitory circuits at the level of dorsal horn or brain(or both) allowing pain impulses to travel unopposed. Central neuropathic pain can occur in people who have or who have experienced-- strokes, multiple sclerosis, Parkinson's disease, brain tumors, limb amputations, brain injuries, or spinal cord injuries. Central pain syndrome is characterized by a mixture of pain sensations, the most prominent being a constant burning. A loss of sensation can occur in affected areas. Neuropathic pain associated with peripheral nerve injury is characterized by dysesthesia, hyperalgesia and allodynia. Peripheral neuropathic pain is frequently observed in patients with long standing diabetes, cancer, AIDS, leprosy, cervical disc protrusion, and after surgery. Although, current drugs available for the effective management of neuropathic pain such as tricyclic antidepressants, antiepileptic drugs, cannabinoid receptor agonists and sodium channel blockers are effective, but, their usage is associated with many side effects. Hope for cure by herbal means have been provided by different flavonoids. Different researches have concluded that myricetin, hesperidin, nargingenin and some other flavonoids can be used clinically to ameliorate neuropathic pain.

Keywords: Dysesthesia, hyperalgesia, allodynia, flavonoids.

D-165

SGLT2- An Emerging Potential Target for Treatment of Type-2 Diabetes Mellitus

Sobhi Gaba, Kuldeep Kumar and Jitender Singh

Lord Shiva College of Pharmacy, Sirsa – 125055, Haryana, India
sobhigaba@gmail.com

Abstract:

Diabetes is a global epidemic with devastating human, social and economic impacts. It is a chronic metabolic disorder characterized by hyperglycemia due to body's inability to generate insulin or is accompanied by insulin resistance. Two broad categories of diabetes are type 1 and type 2: Type 1 diabetes results from autoimmune disease involving pancreatic beta cells causing insulin deficiency whereas Type 2 diabetes (T2DM) is characterized by variable degrees of insulin resistance, impaired insulin secretion and increased glucose production. According to recent survey, there are nearly 285 million people with diabetes worldwide and the disease prevalence is expected to increase to 438 million by 2030. The conventional methods for treatment of T2DM (such as use of biguanides, sulphonylureas, alpha glucosidase inhibitors, thiazolidinones, insulin injections, etc.) are well known to be associated with lots of shortcomings like lactic acidosis, weight gain, gastrointestinal irritation, nausea, etc. Consequently the quest for development of new and effective methods to control this chronic disease continues. Major breakthrough in this arena includes discovery of potential new therapeutic category of anti-hyperglycemic agents i.e. SGLT2 inhibitors. This approach reduces renal glucose re-absorption in the proximal renal tubules providing an insulin independent mechanism to lower blood glucose. Various types of SGLT2 inhibitors, detailed mechanism of action, there advantages and the current challenges regarding these molecules will be presented.

Keywords: Diabetes, T2DM, SGLT2 inhibitors.

D-167

HPTLC Finger-printing and Anti-inflammatory Activity of *Prosopis cineraria* Ethanolic Extract

Abhishek Pandey, Atul Kaushik and Suman Jain

School of Studies in Pharmaceutical Sciences, Jiwaji University,

Gwalior, India
pandey_pharma@yahoo.co.in

Abstract:

Plant of arid zone *Prosopis cineraria* (Fabaceae) from Prosopis species, enriched with various medicinal properties. It is traditionally used for the treatment of inflammatory disorders such as rheumatism and wound healing. The present study evaluates the anti-inflammatory potential of *Prosopis cineraria* ethanolic extract in in-vitro model. The *Prosopis cineraria* ethanolic extract (PCEE) was prepared by maceration, preliminary phytochemical screening were carried out and analyzed by HPTLC to identify the active compound. The standardized extract (100 and 300 mg/kg, orally) was evaluated for anti-inflammatory activity by using carrageenan induced paw edema model. and inflammation was noted up to 5 h. Indomethacin (10 mg/kg) was used as reference standard. Prelimlinary phytochemical screening revealed the presence of terpenoids, flavonoids and phenolics in fair amount. HPTLC finger-printing revealed the presence of compound lupeol. PCEE treatment (100 and 300 mg/kg) showed significant reduction in inflammation in carrageenan induced paw edema. In carrageenan-induced paw edema model, After 5th h, PCEE (100 and 300 mg/kg) showed a significant inhibition of the mean increase in paw volume ($p < 0.01$, $p < 0.001$, respectively) as compared to control group. PCEE exhibited significant anti-inflammatory activity. Anti-inflammatory effect of PCEE may be contributed by due to the presence of lupeol and other phenolic compounds. In conclusion this study validates the folk use of *Prosopis cineraria* as remedy for inflammation and associated inflammatory disorders.

Keywords: HPTLC, arid zone, lupeol, inflammation.

D-168

Evaluation of Antiarthritic Activity of Methanolic Extract of *Barleria prionitis* on CFA Induced Arthritis in Rat Model

E. Janani, G. Ariharasivakumar G.Hariprasath and N. Kalidass

Kmch College of Pharmacy Coimbatore - 641048, Tamil Nadu, India

sanjaaari@gmail.com

Abstract:

The aim of the study was to evaluate the antiarthritic activity of methanolic extract of *Barleria prionitis* in CFA induced rat. The levels of phytochemicals were quantified and HPTLC study was conducted for triterpenoid using Lupeol as reference. *In vitro* antioxidant property of MEBP was evaluated using DPPH, ABTS and Phosphomolybdenum assay and the *in vitro* antiarthritic activity was assessed by protein denaturation method. Evaluation of arthritis was done in female wistar rats by injecting 0.1ml of CFA on Left hind paw and the study was conducted for a period of 28 days. The paw diameter measurement and arthritic scoring and serum biochemical parameters such as CRP and RF factor were assessed. Antioxidant potential of liver and paw tissue was determined. MEBP possessed considerable amount of flavonoid, phenols and triterpenoids.The triterpenoid content was found to be 0.115mg/kg. The Results of arthritic scoring and paw diameter suggest that MEBP at 400mg/kg significantly ($p < 0.001$) reduced the oedema in CFA arthritis. In *In vitro* antiarthritic activity extract showed significant inhibition in protein denaturation at higher concentration. Serum biochemical parameters such as RF and CRP have been significantly reduced in drug treated group when compared with arthritic control. MEBP at 400mg/kg significantly reduced lipid per oxidation and increased the SOD, Catalase and glutathione peroxidase levels and produced significant antioxidant activity**.** Attributed to the potent antioxidant and anti-inflammatory activity, we can conclude that the methanolic extract of *Barleria prionitis* showed significant anti- arthritic activity.

Keywords: Methanolic extract of *Barleria prionitis* (MEBP), Complete Freund' Adjuvant (CFA).

D-169

Molecular Mechanism of Signal Transduction: A Review

Sneha Chakrabarty, Charul Lautre, Jhakeshwar Prasad, Ashish Kumar Netam and Trilochan Satapathy

Columbia Institute of Pharmacy, Tekari, Raipur - 493111, Chhattisgarh, India
cuteprincessneha1997@gmail.com

Abstract:

Cellular signaling plays an important role in alteration of cellular physiology and initiation of pharmacological response. Cells usually communicate with each other through extracellular messenger molecules called ligand which can travel a short distance and stimulate cells with the release of second messenger molecule by a cell that is engaged in sending messages to the downward in same cell or to the other cells in the body. Cells can only respond to a particular extracellular message if they express receptors for that ligand specifically recognize and bind that messenger molecule and the interaction between the ligand and receptor induces a conformational change in the receptor that causes the signal to be relayed across the membrane to the receptor's cytoplasmic domain. A signaling pathway is activated by a diffusible second messenger and another in which a signaling pathway is activated by recruitment of proteins to the plasma membrane. Most signal transduction pathways involve a combination of these mechanisms. In this review we have tried to elaborate diagrammatically the details about the various pathways responsible for signaling for easy understanding for the future research.

Keywords: Ligand, Receptors, Signaling, Second messenger, Pharmacological response.

D-170

Obesity and Its Effects

Vikas Dixena and Saurabh Shrivastava
Shri Rawatpura Sarkar Institute of Pharmacy, Kumhari, Durg – 490042, Chhattisgarh, India

vikasdixena1995@gmail.com

Abstract:

Obesity is a complex metabolic disorder resulting from the abnormality between energy intake and energy expenditure. Obesity is the abnormal or excessive fat gathering that may harm health. As per WHO, overweight is a Body Mass Index (BMI) greater than or equal to 25 and obesity is a BMI greater than or equal to 30. In 2014, more than 1.9 billion adults, 18 years and older, were overweight. Of these over 600 million were obese. Genetic makeup, overeating, eating high-fat foods, and not being physically active are the factors that might affect your weight. It is associated with insulin resistance, dyslipidemia and cardiovascular disease. Being obese increases your risk of diabetes, heart disease, stroke, arthritis, and some cancers. Obesity can have a dramatic impact on your body. The situation interrelated to obesity can be damaging to your health. However, many of these complications can be avoided or cured through weight loss.

Keywords: Obesity, Overweight, Cholesterol, Hyperglycemia.

D-172

Anti Anemic Activity of Fruit of *Prunus Domestica* in Phenylhydrazine Induced Anemic Rat

Pawan Goud, Shivendra Raghuwanshi, Ankur Joshi, Sapna Malviya and Anil Kharia

Modern Institute of Pharmaceutical Sciences, Indore – 453111, Madhya Pradesh, India
pawangoud63@gmail.com

Abstract:

The present study was conducted to verify the effect of *Prunus domestica* on experimentally induced anemia in wistar strain albino rats. Twenty four rats were divided into 4 groups of 6 rats each. Group I received 0.1% CMC solution and served as control, all other groups were given 40 mg/kg of phenyl hydrazine intra peritoneal for 2 days to induce anemia. Group II received 40 mg/kg phenylhydrazine and served as anemic control, Group III received standard drug (vitamin B_{12}) (100mg/kg), Group IV received fruit extract of *Prunus domestica* (100mg/kg) for 13 days the standard and test drug was given orally. On completion of activity blood was collected through tail vein in EDTA coated tubes for further determination of parameters i.e., RBC count, Heamoglobin count & percentage hematocrit.

Keywords: Anemia, Anti-anemic, Phenylhydrazine, Vit. B_{12}, *Prunus domestica.*

D-173

Antidepressant Activity of Hydroalcoholic Extract of *Lepidium Sativum* Linn

Ankur Joshi and Neelesh Malviya

Modern Institute of Pharmaceutical Sciences, Indore – 453111, Madhya Pradesh, India
ankurpharmacology@gmail.com

Abstract:

The present study was design to evaluate the effect of *Lepidium sativum* hydro-alcoholic extract as well as its interaction with conventional anxiolytic and antidepressant drugs using tail suspension test and forced swim test (FST) and to evaluate the possible mechanisms involved in its actions. The fruit of *Lepidium sativum* were collected and authenticated. Extraction of dried fruits was carried out using soxhlet apparatus to obtain its Hydro alcoholic extract. The extract of *Lepidium sativum* showed the significant antidepressant activity comparable to the standard drug. The oral administration of *Lepidium sativum* extract at 150 mg/ kg and 300 mg/kg respectively as compared to the control treated group showed an antidepressant activity comparable to that of standard drug. The antidepressant effects of *Lepidium sativum* extract seem to be mainly associated with the activation of dopamineergic system and possess potential anxiolytic and antidepressant activities.

Keywords: Antidepressant activity, ***Lepidium sativum*****, forced swimming test, tail suspension test.**

D-174

Excision Wound Healing Activity of the Hydro-alcoholic Extract of *Lycoperscon esculentum* Seeds in Wistar Albino Rats

Priyanshu Shekhar, Ankur Joshi, Sapna Malviya and Anil Kharia

Modern Institute of Pharmaceutical Sciences, Indore – 453111, Madhya Pradesh, India
priyanshupatna011@gmail.com

Abstract:

Lycoperscon esculentum has been known for many potential uses. Fruit is a part of human diet and it is also used in cosmetics and medical field. The hydro-alcoholic extract of *Lycoperscon esculentum* seeds were investigated for wound healing potential in rats. *Lycoperscon esculentum* seeds were dried, crushed in coarse powder hydro alcoholic extract was obtained and turned to ointment form. In the course of this study, 18 male wistar albino rats weighing approximately 150-200g were used in this research. Group 1 serve as control group (Ointment Base), Group 2 as reference control (Standard) were treated topically with Povidone-Iodine Ointment USP, Group 3 as test control were treated with 10% *Lycoperscon esculentum* ointment. Wound healing was monitored on days 4, 8, 12, & 16 day and histopathological evaluation was carried out on the samples. Hydroalcholic extract of seeds showed significant results as compared with the control and standard.

Keywords: Wound healing; ***Lycoperscon esculentum*** **(seeds); hydro-alcoholic extract; ointment; bactericidal activity.**

D-175

Agmatine Inhibits Ethanol Self-Administration in Rats in Operant Conditioning Paradigm

SS Gujar, SB Nambiar, DY Gawande and BG Taksande

Department of Pharmacology, S.K.B College of Pharmacy, Kamptee, Nagpur, Maharashtra, India
shreyansgujar412@gmail.com

Abstract:

This study was designed to investigate the effect of agmatine on ethanol reinforcement. Ethanol reinforcement experiments were conducted in standard two lever operant chamber (PAN LAB, Spain). Rats were trained to self-administer ethanol (200 mg % v/v) for seven sessions, at a frequency of one session a day (30-minute). Rats showing stable lever pressings for ethanol self-administration during the first four sessions were treated with agmatine (5-10 µg/rat, intra-p-VTA) 15 minutes prior to the fifth and sixth sessions and number of lever pressings was recorded for intra-pVTA ethanol self-administration during the 30-minute session in operant chamber. In operant conditioning protocol, over a period of 7 days, ethanol significantly increased the number of lever presses. As expected the response was significantly reduced when ethanol was replaced with aCSF during the fifth and sixth sessions. On the contrary, reinfusion of ethanol at the seventh session restored the number of lever presses. Administration of agmatine (5 and 10 µg, intra-pVTA 15 min prior to ethanol on 5th and 6th conditioning session resulted in significant decreased in lever presses. Imidazoline antagonist inhibited the effect of agmatine. Thus the results observed herein, although preliminary suggest the inhibitory influence of agmatine on ethanol reward and reinforcement.

Keywords: Agmatine, Ethanol reinforcement, Operant chamber, Imidazoline receptors.

D-176

Studies on the Role of Agmatine in Repeated Ethanol Exposure and Withdrawal Induced Impairment of Fear Conditioning and Extinction

Dabare R.U, Kale M.B, Aglawe M.N and Taksande B.G

Department of Pharmacology, S.K.B College of Pharmacy,

Kamptee, Nagpur, Maharashtra, India
ruchikadabre29@gmail.com

Abstract:

Repeated cycles of alcohol intoxication and withdrawal lead to impairment of cognitive function. As agmatine plays important role in learning and memory, synaptic plasticity and neuroprotection, this study was planned to explore the role of agmatine in repeated exposure and withdrawal induced impairment of learning and extinction of fear. Expression of withdrawal symptoms in single ethanol withdrawal (SEW) and repeated ethanol withdrawal (REW) animals were initially confirmed by impaired locomotor activity and development of anxiety in open field test and elevated plus maze respectively. REW and SEW animals showed significant impairment in fear conditioning and extinction compared to animals without withdrawal. Agmatine significantly altered freezing time during fear conditioning and extinction in SEW group. During repeated ethanol withdrawal, administration of agmatine from first withdrawal shows significant conditioning and extinction of fear compared with that administered from second and third withdrawal. These finding clearly implicates that agmatine modifies maladaptive changes during withdrawal and facilitates fear learning and extinction may have enormous therapeutic potential.

D-177

Determination of Guaifenesin in Human Plasma by Liquid Chromatography-Tandem Mass Spectrometry (LCMS-MS) Method

Nirmala Yadav, Ayaz Ahmed and Sanjeev Mishra

Department of Pharmaceutical Sciences, Indira Gandhi University, Meerpur, Haryana, India
nirmalsonu2005@gmail.com

Abstract:

A simple sensitive, selective and rapid liquid chromatography-tandem mass spectrometry (LCMS-MS) method was developed and validated for quantitation of guaifenesin in human plasma. Guaifenesin-d3 was used as internal standard. Following solid phase extraction, the analyte was chromatographed using an isocratic mobile phase on a reversed-phase C_{18} column and analyzed by MS in multiple reaction-monitoring (MRM) mode (positive ion mode). The limit of quantitation for this method was 8 ng/mL and the linear dynamic range was 8-2200 ng/mL. The sensitivity and specificity of this method make it suitable for clinical pharmacokinetics studies of guaifenesin. As MS-MS methods are capable of discriminating more efficiently as compared to LC or LC-MS between the analyte and matrix signals, thus providing an improved limit of detection for trace-mixture analysis.

Keywords: sensitive, phase, internal standard, extraction, retention time.

D-178

Vinpocetine Attenuates Levodopa Induced Dyskinesia and Biochemical Abnormalities in 6-OHDA Infused Rats

Darshpreet Kaur, Sabeena Sharma and Rahul Deshmukh

Department of Pharmaceutical Sciences & Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda - 151001, Punjab, India
darshpreet91@rediffmail.com

Abstract:

Parkinson's disease (PD) is the second most common neurodegenerative disorder. L-DOPA (Levodopa) is the standard drug available for treatment of PD. However, chronic use of L-DOPA is associated with dyskinesia in PD patients. Increased level of oxidative stress markers along with neuroinflammation has been well reported in animal models as well as in human PD patients. Vinpocetine is a well-known antioxidant and anti-inflammatory agent along with phosphodiesterase-1 inhibitory activities. Recently it has been reported to reduce neuronal death in various in-vitro and in-vivo animal models of PD. In the present study we have investigated the effect of vinpocetine on LIDs in 6-hydroxydopamine (6-OHDA) lesioned rats. 6-OHDA was infused in dorsal striatum unilaterally. Three weeks after 6-OHDA infusion the animals were treated with L-DOPA and carbidopa twice a day for 15 days consecutively to develop dyskinesias. The dyskinetic rats were treated with vinpocetine (5, 10 and 20 mg/kg i.p) from days 21-35. Biochemically levels of oxidative stress markers along with neuroinflammatory markers were assessed in striatal brain homogenates. Intrastriatal administration of 6-OHDA followed by treatment with L-DOPA and carbidopa produced stable motor deficits, dyskinesias and cause increased oxidative stress and neuroinflammatory markers. Chronic treatment with vinpocetine significantly attenuated dyskinesias along with in 6-OHDA treated rats. The current data demonstrate that vinpocetine could prove to be a useful candidate molecule for the treatment of movement disorders as well as in the management of LID.

Keywords: Vinpocetine; L-DOPA induced dyskinesia; 6-OHDA; Parkinson's Disease; Movement disorders.

D-179

Photopharmacology - A Novel Approach

Anjali Gupta, Shikha Raheja, Pradeep Kamboj and Viney Lather

JCDM College of Pharmacy, Sirsa, Haryana, India
anjaligupta5754@gmail.com

Abstract:

Selectivity to target tissue/site is a problem with many of the drugs; many of the sites of drug actions (enzymes, receptors, ion channels, and carrier molecules) are expressed in other sites/tissues/organs and the action of drugs therein leads to intolerable side effects. Selectivity to target specific site/organ can be increased by various strategies including photopharmacology. Photopharmacology uses molecular photoswitches to establish control over the action of bioactive molecules. The aim is to reduce the systemic drug toxicity and the emergence of drug resistance. These switching units allow the use of light as an external control element for pharmacological activity, which can be delivered with very high spatiotemporal precision. This field of photopharmacology is rapidly advancing with newer and promising avenues in past few years. The advancements in optical technologies and better photoswitch technologies can enhance better spatiotemporal control over drug action and hence impart enhanced safety and efficacy of the photopharmaceutical agents compare to their conventional methods. Many clinical studies on pharmacological agents are been conducted and may give the beneficial results in future.

D-180

PASS Assisted Prediction of Potential Anti-Parkinson Phytoconstituents

Rajan Kumar, Rakesh Kumar, Neha Sharma and Navneet Khurana

Department of Pharmaceutical Sciences, Lovely Professional University, Phargwara, Punjab, India
rajankumar2788@yahoo.com

Abstract:

Parkinson's disease (PD) is most common motor related neurodegenerative disorder. In PD, there is loss of dopaminergic neurons that occurs in the substantia nigra pars compacta which leads to lack of dopamine and appearance of symptoms like rigidity, tremors and postural instability. The available drug therapy provides only symptomatic relief but not able to cure the underline cause of the PD. So, there is a need to search and develop a compound which can provide symptomatic relief as well as also cure the underline pathological reason. Prediction of Activity Spectra of Substances (PASS) is a worthful software which can help to predict the anti-parkinson activity of compounds. In pre-clinical studies, various phytochemicals are reported to have anti-parkinson activity. To support their activity, PASS software is a useful tool. This software allows to predict the biological activity of the compound on the basis of its chemical structure. For the prediction of anti-parkinson activity, Canonical Simplified Molecular-Input Line-Entry System (SMILES) are used which are obtained from PubChem website. The predicted activity also compared with marketed compound like levodopa. In this study, we tried to compile the information regarding the PASS predicted anti-parkinson activity of some important phytoconstituents.

Keywords: Parkinson's disease, PASS, Levodopa.

D-181

Pain Assessment in Animal Models: New Approaches and Methods

Arvind Singh Jadon and Manoj Sharma

School of Studies in Pharmaceutical Science, Jiwaji University, Gwalior, Madhya Pradesh, India
iamarvindjadon@gmail.com

Abstract:

Pain is ultimately a perceptual phenomenon. Research into pain and its relief in animals has utilised a wide range of techniques with the aim of findings objective measures that can quantify the experience of pain suffered by the animal. Many scoring methods that include physiologic and behavioural variables have been published, but few have been validated. Any pain scale or methodology used for pain assessment must be able to distinguish individual sensitivities. Pain scales based on the presence or absence of species-specific behaviors, and that minimizes the interpretation of those behaviors, are likely to be more accurate than generic scales that rely heavily on subjective assessment and interpretation. All current methods used to measure pain in animals are prone to errors of under- or overestimation. Even if the amount of pain is correctly estimated, determining how well the individual animal is coping with pain may be difficult. In consequence, there are no reliable indicators to detect low and middle-grade clinical pain in the mouse. In this article we will discuss about several research measures developed in recent years such as spectral analysis of the electroencephalogram, ethological analysis of behaviour, physiological approach i.e. Heart beat rate and variability, pain

associated gene regulation have proven to be extremely useful in this area and contributed significantly to our understanding of animal pain and the techniques that we use in its alleviation.

Keywords: pain scale, animal Pain assessment, clinical pain.

D-182

New Approaches in Alternatives to Animal Testing Methods in Drug Discovery

Poonam Bhadauriya, Arvind S Jadon and Manoj Sharma

School of Studies in Pharmaceutical Science, Jiwaji University, Gwalior, Madhya Pradesh, India
poonambhadauriyajadon@gmail.com

Abstract:

Discovery of new lead compounds for novel therapeutic targets is a multi-step process involving drug design, synthesis and its pharmacological screening1. Selection of an animal model is one of the most important steps in any of the experimental pharmacological study. The number of animals used in research has increased with the advancement of research and development in medical technology. Every year, millions of experimental animals are used all over the world. Various alternatives to animal testing were proposed to overcome the drawbacks associated with animal experiments and avoid the unethical procedures. Alternatives to using animals in testing serve the same purposes that using whole animals does protecting and improving human health and comfort. The technologies on which alternatives are based result primarily from biomedical and biochemical research. The development of alternatives to animals in testing has accelerated in recent years with the establishment of programs having development and implementation of alternatives as their goal. However, the barriers to adoption of these tests are more than the technical barrier of developing and validating a new technology. A brief description of these alternatives and advantages associated is discussed in this review with examples.

Keywords: alternatives to animals, 3-R concept, animal experimentation.

D-183

Evaluation of Analgesic Activity of *Cadaba trifoliata* (roxb) WT. & ARN

M. Jesupillai, N. Jegan, M. Sundarapandian and I. Adaikkalaraj

K.M. College of Pharmacy, Madurai - 625107, Tamil Nadu, India
jesupillai82@gmail.com

Abstract:

Cadaba trifoliata (roxb) Wt. & Arn, is a shrub, grows up to eight meter in height. It belongs to the family Capparaceae. C. trifoliata has not yet been explored scientifically for the analgesic property.This encourages us to perform the present study, which includes preliminary phytochemical screening of methanol extract of Cadaba trifoliata and its possible analgesic activity in experimental models.The plant pa Cadaba trifoliate extracted exhaustively with methanol (150 ml×3), using a Soxhlet. The animal divided in to four groups. Estimation of analgesic activity done by Tail flick ,Hot plate method and Acetic acid induced writhing test, In tail flick model, MCT increased significantly ($p<0.01$) the latent period of tail flick response by 45.02% and 63.48% at 200 and 400 mg/kg respectively. For pentazocine it was 85.99 %. In hot plate model, MCT produced a significant ($p<0.01$) increase in basal reaction time by 45.58% and 54.38% at 200 and 400 mg/kg respectively. While pentazocine showed 76.27% inhibition. It was observed that the activity increases with dose. There was a significant ($p<0.01$) writhing inhibition in acetic acid induced writhing in mice. The percentage inhibition was found to be 49.84% and 60.0% at 200 and 400 mg/kg respectively, which was comparable to the 69.19% shown by the diclofenac sodium. Acetic acid induced writhing in mice is well-known to involve peripheral mechanism and the hot plate model is established for central mechanism in pain process. Acetic acid causes abdominal constriction by increasing lipooxygenase, PGE_2 and $PGF_{2\alpha}$ in the peritoneal fluid, which also causes the stimulation of peritoneal receptor . In case of thermal stimulation the pain production is mediated through the release of prostaglandins and bradykinin. The findings of the present study revealed that aerial parts of Cadaba trifoliata possess significant central and peripheral analgesic activity property.

Keywords: Acetic acid, Cadaba trifoliate, pentazocine, bradykinin, analgesic.

D-184

Monitoring of Adverse Drug Reactions in Elderly Patients in Five Tertiary Care Hospitals

P. Roja Tejaswi, Sk. Nazneen and Sk. Faizan Ali

Hindu College of Pharmacy, Amravathi Road, Guntur - 522002,

Andhra Pradesh, India
pondugalatejaswi@gmail.com

Abstract:

Aim: Present study was carried out to assess the incidence of adverse drug reactions (ADR) and assessment of causality, severity, preventability and additional financial burden associated with reported suspected ADRs. Methodology: A prospective spontaneous reporting study was conducted over a period of six months in inpatients of medicine wards and medical intensive care unit at five Tertiary care Hospital, Guntur. Causality assessment of ADR was carried out using Naranjo's scale Reported ADRs were categorized on the basis of severity by using Hartwig et al scale. Average cost in treating an ADR was also calculated. Results: A total of 319 suspected ADRs were reported and evaluated from 78 patients showing an overall incidence of 9.17%. Most of the ADRs were augmented type, whose pharmacology is known. 66% ADRs were classified as "POSSIBLE" in view of causality, while 87% were found to be "MILD" in case of severity. Preventability was found to be 22.87%. Average cost in treating an ADR in hospitalized inpatients was found to be approximately of Rs.1328.71. Conclusion: Incidence of ADRs was more in hospitalized patients compared to ADR induced hospital admission. Clinical pharmacist must work together with physicians to aid reporting of ADR both in hospital and community settings which may reduce the additional financial burden associated with ADR treatment

Keywords: Adverse drug reaction, Monitoring, clinical pharmacist.

D-185

Effect of Curcuma Amada on Stress Modulated Sexual Disorder in Male Mice

Sreehari Yajamanam and Mukul Tambe

G. Pulla Reddy College of Pharmacy, Hyderabad, Telangana, India
srihariyajamanam@gmail.com

Abstract:

Background: Sexual function is a complex process involving brain, hormones, emotions, nerves, muscles, blood vessels and is very sensitive to stress. Therefore, stressful lifestyle usually induces sexual dysfunction. Recent studies reported that chronic physical and psychological stresses modulate neurotransmission in the median pre-optic area and decrease penile blood flow, resulting in Erectile Dysfunction. It also reported that activation of Hypothalmo-Pitutary-Adrenal (HPA) axis leads to enhancement of plasma cortisol levels and increase sympathetic system function, this leads to excessive oxidative stress and stress related disorders including sexual dysfunction. Curcuma amada renowned plant in ayurveda system of medicines used as aphrodisiac, appetizer, diuretic, asthma and in bronchitis. Objective: The objective of the study was to evaluate the effect of Curcuma amada on stress modulated sexual disorder in male mice. Method: Male wistar mice weighing between 20 - 25gm were divided into 5 groups of mice in a group (n=6).Group 1: Normal control received distilled water 1ml/kg (without stress) Group 2: stress control received water 1ml/kg Group 3: received standard drug sildenafil citrate 5mg/kg p.o. Group 4: received low dose of hydro-alcoholic extract of Curcuma amada p.o.(LDCA 100mg/kg) Group 5: received high dose of hydro-alcoholic extract of Curcuma amada p.o. (HDCA 200mg/kg). All the treatments were given for 28 consecutive days before Immobilzation stress (IMB stress). During stress induction water and food was withdrawn for 6 hrs in a day. Result and Conclusion: Exposure to IMB stress for 28 days continuously increases MDA and cortisone, decreases GSH levels, sperm density and alters histology of testes. This may be due to generation of reactive oxygen species in rat testes, treatment with Curcuma amada, rhizomes have decreased MDA and cortisone level, increased GSH, sperm density and further it has restored histoarticulture of testes. This activity may be due to its potential antioxidant activity and due to presence of phytochemical constituents like glycosides, saponins and flavonoids in extract.

Keywords: Curcuma amada, Immobilization stress, Sexual disorder, Aphrodisiac activity.

D-186

Pain Assessment in Animal Models: New Approaches and Methods

Arvind Singh Jadon and Manoj Sharma

School of Studies in Pharmaceutical Science, Jiwaji University, Gwalior, Madhya Pradesh, India
iamarvindjadon@gmail.com

Abstract:

Pain is ultimately a perceptual phenomenon. Research into pain and its relief in animals has utilised a wide range of techniques with the aim of findings objective measures that can quantify the experience of pain suffered by the animal. Many scoring methods that include physiologic and behavioural variables have been published, but few have been validated. Any pain scale or methodology used for pain assessment must be able to distinguish individual sensitivities. Pain scales based

on the presence or absence of species-specific behaviors, and that minimizes the interpretation of those behaviors, are likely to be more accurate than generic scales that rely heavily on subjective assessment and interpretation. All current methods used to measure pain in animals are prone to errors of under- or overestimation. Even if the amount of pain is correctly estimated, determining how well the individual animal is coping with pain may be difficult. In consequence, there are no reliable indicators to detect low and middle-grade clinical pain in the mouse. In this article we will discuss about several research measures developed in recent years such as spectral analysis of the electroencephalogram, ethological analysis of behaviour, physiological approach i.e. Heart beat rate and variability, pain associated gene regulation have proven to be extremely useful in this area and contributed significantly to our understanding of animal pain and the techniques that we use in its alleviation.

Keywords: pain scale, animal Pain assessment, clinical pain.

D-187

Evaluation of Potent Muscle Relaxant Activity of Methanolic Fruit Extract of *Basella alba* in Swiss Albino Mice

Akshitha, Swathi Baswa and Vamshi Vishnu Yamsani
Department of Pharmacology, Aurobindo College of Pharmaceutical Sciences, Gangadevipally, Warangal, Telangana, India
basvaswathi@gmail.com

Abstract:

Skeletal muscle relaxants are the agents that are used to treat both muscle spasm and spasticity, acting both as antispasmodic and antispasticity agents. *Basella alba* is traditionally used for various diseases because of its medicinal properties. The present study was conducted to evaluate the skeletal muscle relaxant activity of the methanol extract of fruits of *Basella alba* comparison with leaf extract and standard diazepam. *Basella alba* L. (Synonym: Basella rubra Roxb.) is an extremelyheat tolerant, fast growing perennial vine which belongs to family Basellaceae. Numerous bioactive compounds such as flavonoids, Saponins, Phenolic and tannins have been isolated from fruits of *Basella alba*. Some of these bioactive compounds have been worked out for one or the other medicinal attributes. In the present study, evaluate the potent muscle relaxant effect of *Basella alba* methanolic fruit extact and compare with leaf extracts at a dose of 25 and 50 mg/kg body weight on swiss albino mice by using Rota-rod apparatus and Actophotometer. The spontaneous locomotor activity with different doses of *Basella alba* methanolic leaf and fruit extacts (25 and 50 mg/ kg p.o.) showed dose dependent decrease in locomotor activity when compared to control. Methanolic fruit extracts of *Basella alba* showed more potent action on the muscle co-ordination than leaf extracts. The results of the present study, concluded that the methanolic fruit extract of *Basella alba* possess significant skeletal muscle relaxant activity.

Keywords: *Basella alba* fruit, Rota- rod apparatus, Albino mice, Skeletal muscle relaxant.

D-188

Cerium Oxide Nanoparticles as Emerging Hope For Rheumatoid Arthritis

Prince Allawadhi, Amit Khurana, Divya Vohora and Chandraiah Godugu
Department of Pharmacology, School of Pharmaceutical Education and Research (SPER), Jamia Hamdard, New Delhi, India
allawadhiprince@gmail.com

Abstract:

Arthritis and related disorders, including rheumatoid arthritis (RA) are common, affecting millions of people throughout the world. RA treatment is hampered due to lack of patient compliance therapy and novel treatment interventions to tackle the burgeoning prevalence of RA. Cerium oxide nanoparticles (CONPs) have emerged as potent anti-inflammatory agent which may prove beneficial for the therapy of RA. Nanoparticles were thoroughly characterized by zetasizer, FTIR, SEM and pXRD. Inflammation was induced in Raw macrophage 264.7 cells with lipopolysaccharide (LPS) having dose of 500 ng/mL. The cell viability in presence of CONPs was assessed by MTT assay. Effect of CONPs (25-100 µg/mL) on LPS induced nitrosative stress was evaluated by Griess reagent method. In addition, effect of CONPs intervention on cellular reactive oxygen species (ROS) and SOD were assessed by DCFDA and Mitosox staining, respectively. Mitochondrial membrane potential (MMP) was assessed by JC1 staining. For *in vivo* study, rheumatoid arthritis will

be induced by Freund's complete adjuvant (0.2 mL/rat) by sub-plantar administration in region of right hind paws through intradermal (ID) route at day first only followed by treatment with cerium oxide nanoparticles at three doses (0.5, 1 and 2 mg/Kg). The in vivo assessment of protective effect of CONPs will be carried out by assessment of all relevant parameters (scoring, X-ray, biochemistry, ELISA, RT-PCR). CONPs have shown dose dependant reduction in the cellular nitrite secretion as assessed by Griess reagent method. The results of DCFDA and Mitosox clearly indicate remarkable protection of macrophages from LPS induced oxidative stress. In addition, the results of JC1 staining show protective effect of CONPs against LPS induced MMP changes. Moreover we did not observe significant cell death of macrophages even upto 1 mg/mL of CONPs indicating remarkable safety profile of CONPs. The in vivo study is currently under progress. Our study suggests that CONPs may be used for effective therapy of RA and may overcome the associated complications.

D-189

Cerebroprotective and Antioxidant Effects of Phoenix Dactylifera against Transient Middle Cerebral Artery Occlusion-Induced Ischemia in Rats

Rohini R. Pujari and Neeraj S. Vyawahare
Department of Pharmacology, P. E. Society's Modern College of Pharmacy (Ladies), Moshi, Pune, Maharashtra, India
rohinirpujari@gmail.com

Abstract:

Ischemic stroke is a leading cause of death throughout the world. Brain is a soft target of stroke and depending upon the site of ischemia the affected person shows neurological signs including loss of consciousness and memory, impaired muscle coordination and paralysis. Also, higher cortical functions including amnesia, delirium, language and speech may be impaired in stroke survivors. Multiple mechanisms including excitotoxicity, calcium overload and enhanced oxidative stress have been suggested in the aetiology of ischemic stroke. Enhanced oxidative stress has been reported to modulate ischemic reperfusion injury. Reactive free oxygen species including superoxide radicals generated during and after ischemia appear to play a crucial role in development of neuronal damage. Phoenix dactylifera (PD) is traditionally claimed to be nervine tonic but not yet been explored for its neuroprotective activity. According to established documents PD has shown the presence of some important phytoconstituents such as polyphenols and flavonoids which have already been documented to play major role in neuroprotection against various experimental models of cerebral ischemia/reperfusion. The aim of the present study was to determine the antioxidant and neuroprotective effect of methanolic extract of PD fruits (MEPD) at 30, 100, 300 mg/kg p.o. against transient middle cerebral artery occlusion (Transient MCAO). The cerebral ischemia was induced by occluding middle cerebral artery for 2 hrs, followed by 24 hours reperfusion in rats. After reperfusion the rats were subjected to neurological function testing, and then scarificed for the histopathological and biochemical studies of their brains. Transient MCAO and reperfusion caused significant rise in the neurological score along with significant depletion in superoxide dismutase (SOD), catalase (CAT), glutathione (GSH), glutathione peroxidase (GPx), glutathione-S-transferase (GST), glutathione reductase (GR) and significant increase in lipid peroxidation (LPO). The histopathological studies showed severe neuronal damage in the brain. All the alterations except depletion in GPx, GST levels induced by cerebral ischemia were significantly attenuated by 15 days pretreatment with MEPD at 100, 300 mg/kg p.o. whereas the dose 30 mg/kg was insignificant in this regard. These results indicated the potency and efficacy of Phoenix dactylifera against transient middle cerebral artery occlusion induced oxidative stress and neuronal damage which suggest its usefulness in treatment of stroke.

D-190

Preclinical Evaluation of Anti-Ulcer Activity of A Polherbal Mixture

Rafel Mahammad, Swagata Ghosh, Mriganka Sekhar Bala and Mrityunjoy Majumdar
Master of Pharmacy, Department Of Pharmacology,

Netaji Subash Chandra Bose Institute Of Pharmacy, Chakdaha, West Bengal, India
rafel.md29@gmail.com

Abstract:

In the current research, a polyherbal mixture (pm) consisting of (expressed juice of leaves from 7 different plants) was prepared and evaluated for its anti-ulcer activity. Young male albino wistar rat weighing between 150- 200 gm were selected for the study. Animals were divided into 4 groups whereas Group I served as untreated control, Group II as standard (omeprazole 20mg/kg), Group III treated with pm 2.5 ml/kg and Group IV treated with pm 5ml/kg. In aspirin induced anti-ulcer model aspirin 200 mg/kg was used to induce gastric ulcer in all groups 1 hour after, drug treatment. After 4hrs, all the rats were sacrificed ulcer index were determined. To evaluate the role of pm on stress induced ulceration progress in rats subjected to water immersion for 4 hours as a stress condition model. All the animals received treatment as per their group 30 min prior to the water immersion. After 4hrs of immersion in water the animals were sacrificed, ulcer index were determined. In both anti-ulcer model omeprazole, pm low dose and high dose shown significant reduction in ulcer index while compared with the untreated control, all of them also reduced the ulcer formation by 83%, 70% and 83% respectively in aspirin induced model and 69%, 53% and 65% in stress induced model.

Keywords: Anti-ulcer, Aspirin-induced ulcer, Stress induced ulcer, Omeprazole.

D-191

Hepatoprotective Activity of *Andrographis paniculata* on Poultry Chicken

Rituparna Manna, Marzia Fazal, Avishek Bhattacharjee and Mrityunjoy Majumdar
Department of Pharmacology, Netaji Subhas Chandra Bose Institute of Pharmacy, Chakdaha, West Bengal, India
rituparnamanna94@gmail.com

Abstract:

In current research a herbal formulation processed from extract of kalmegh IP, *Andrographis paniculata* (AP), containing andrographolide 10% by IP assay, was evaluated for its hepatoprotective activity on poultry birds (*Gallus gallus domesticus*) by using alcohol induced hepatotoxicity model. Total 30 nos. of 10 days old poultry chicks were selected and divided into 5 groups (GP). The chicks were pretreated daily with GP 1- vehicle (tween 80), GP 2-vehicle (2% V/V tween 80), GP 3- Silymarin (100mg/kg), GP 4-AP (0.5ml/kg), GP 5-AP (0.5ml/kg) p.o, GP 2, 3, 4 received ethanol (3.75ml/kg) p.o for a period of 25 days. On 26th day thiopentone sodium (40mg/kg, i.p) induced sleeping time, SGOT, SGPT, ALP and % increase in total body mass was evaluated. The formulation showed significant hepatoprotective activity compared to standard drug silymarin in alcohol treated animals. In thiopentone sodium (40mg/kg, i.p) induced sleeping time the test drug showed significant decrease in time. The formulation even exhibited better increase in body mass by activating the metabolic activity of liver while compared with untreated control. From the above findings it may be concluded that the formulation has significant hepatoprotective activity which may be used for regular basis on poultry, so that the produced meat and liver from the poultry will be free from toxic substances, safe to consume and even may bring commercial benefit to the poultry industry.

Keywords: *Andrographis paniculata*, Poultry, Hepatoprotective, Thiopentone sodium, Silymarin.

D-192

Hyaluronic acid-Antioxidant Bio Conjugates as Potential Drug for Anticancer Therapy

Manjunatha P Mudagal and Ahmed Hazim Mohsin
Department of Pharmacology, Acharya & B.M Reddy College of Pharmacy, Acharya Dr. Sarvepalli Radhakrishnan Road, ACHIT Nagar Post, Soldevanahalli, Hessarghatta Road Bangalore - 560107, Karnataka, India
manjunathpm@acharya.ac.in

Abstract:

The Objective of the current proposal was to evaluate the antineoplastic activity of Apocynin-Hyaluronic acid conjugate *in-vitro* on HBL-100, MCF7 cell lines, and *in-vivo* against Ehrlich Ascites

Carcinoma (EAC) cancer cells induced Swiss albino mice. Cytotoxic effect of Apocynin-Hyaluronic acid conjugate was measured by MTT assay and therapeutic efficacy of Apocynin-Hyaluronic acid conjugate *in-vivo* was evaluated against (EAC) induced Swiss albino mice, all groups were induced with EAC by injecting 1×106 cells/ml/ mouse intraperitoneally group-I served as cancer control (DMSO 4 ml/kg), group-II Apocynin (65 mg/ kg), group- III Apocynin-Hyaluronic acid conjugate (65 mg/kg), and group IV 5-Flurouracil (20 mg/kg) was used as a standard drug, were administered Intraperitoneally for 15 days, after post treatment blood was collected from animals for hematological investigations, the set of 4 groups of 9 mice each were continued with the treatment daily for observing life expectancy. Apocynin-Hyaluronic conjugate shown cytotoxicity for HBL-100 and MCF7cell lines in dose dependent manner and treatment with (65 mg/kg) dose of Apocynin-Hyaluronic acid conjugate on EAC induced mice significantly maintained hematological parameters and also enhanced the life span of cancer induced mice when compared with Cancer control.

All the observations enable to conclude that Apocynin-Hyaluronic acid conjugate has antineoplastic effect from its *in-vitro* evaluation and confirms that (65 mg/kg) dose of Apocynin-Hyaluronic acid conjugate possess protective effect against (EAC) induced Swiss albino mice.

Keywords: Apocynin-Hyaluronic acid conjugate, Ehrlich Ascites Carcinoma, HBL-100 and MCF7 cell lines, 5-Flurouracil.

D-193

Protective Effect of *Ficus glomerata* Leaf Extract in Streptozotocin Induced Early Diabetic Renal Complications

Shaikh Abusufyan, Shaikh Ayman, Mohammed Ibrahim and Khan Mohib

School of Pharmacy, AIKTC, New Panvel – 410206, Navi Mumbai, Maharashtra, India

abushaikh07@yahoo.com

Abstract:

Nephropathy is one of the important complication associated with the diabetes and clinical studies have reported difficulty in its management. Many indigenous herbs have been reported to lower blood sugar level in diabetic individuals. In the current research effect of leaf extract of *Ficus glomerata* was evaluated in streptozotocin induced diabetic renal complications. Wistar rats were injected with STZ (55 mg/kg, i.p.) to produced experimental diabetes. Two weeks after stabilization of diabetes, the leaf extract of *Ficus glomerata* was administered in diabetic rats for further two weeks. The changes in body weight, blood glucose, serum urea and creatinine level and tissue antioxidant status were evaluated two week post treatment. The results of *Ficus glomerata* leaf extract treatment were compared with diabetic control and normoglycaemic animals. In addition, histopathological change in kidney was also studied. Diabetic rats treated with leaf extract of *Ficus glomerata* showed significant ($P < 0.05$) reduction in blood glucose, serum urea and creatinine level and also improved the compromised antioxidant status in diabetic rats. Histopathological study also showed protective effect of *Ficus glomerata* against early nephrotic changes in the kidney. Thus, the current study revealed protective effect of *Ficus glomerata* leaf extract against early diabetic nephropathy and warrants the need for further research to elucidate its mode of action.

Keywords: Diabetic nephropathy, *Ficus glomerata*, Streptozotocin induced diabetes.

D-194

Protective Effect of *Ficus glomerata* in Streptozotocin Induced Early Diabetic Neuropathy

Raunak Vakil, Shaikh Heba, Sahikh Anam and Shaikh Abusufyan

School of Pharmacy, AIKTC, New Panvel- 410206,

Navi Mumbai, Maharashtra, India
raunakvakil43@gmail.com

Abstract:

Neuropathic pain is an important symptom of diabetic neuropathy and clinical studies have reported difficulty in its management. Many indigenous herbs have been reported to lower blood sugar level in diabetic individuals. The present investigation aims to evaluate protective effect of leaf extract of *Ficus glomerata* in streptozotocin induced early neuropathic pain in rats. Wistar rats were injected with STZ (55 mg/kg, i.p.) to produced experimental diabetes. Two weeks after stabilization of diabetes, the leaf extract of *Ficus glomerata* was administered in diabetic rats for further two weeks. The changes in body weight, blood glucose level, thermal hyperalgesia and cold allodynia were studied on every week of the treatment. The results of *Ficus glomerata* leaf extract treatment were compared with diabetic control and normoglycaemic animals. The blood glucose was estimated using glucometer. Diabetic rats treated with *Ficus glomerata* showed significant ($P < 0.05$) reduction in blood glucose level and reduces both thermal hyperalgesia and cold allodynia as compared to diabetic control group. Thus, the leaf extract of *Ficus glomerata* has potential effect in the treatment of neuropathic pain related to diabetes and warrants the need for further research to elucidate its mode of action.

Keywords: Diabetic neuropathy, *Ficus glomerata*, Streptozotocin induced diabetes.

D-195

Protective Effect of Spermidine against Excitotoxic Neuronal Death Induced By Quinolinic Acid in Rats: Possible Neurotransmitters and Neuroinflammation Modulation Mechanism

Ramandeep Kaur, Sumit Jamwal and Shamsher Singh
Neuropharmacology Division, Department of Pharmacology, I.S.F College of Pharmacy, Moga - 142001, Punjab, India
ramandeepbph@gmail.com

Abstract:

Introduction: Huntington disease (HD) is hyperkinetic movement disorder characterized by loss of GABAergic medium spiny neurons in striatum. Quinolinic acid (QA), a produces excitotoxicity, ATP depletion, oxidative stress, neuroinflammation, as well as selective GABAergic neuronal loss. Therefore, we investigated spermidine, an endogenous molecule with free radical scavenging, anti-inflammatory, and N-methyl-D-aspartate receptor antagonistic properties, for its beneficial potential if any, in QA-induced Huntington's like symptoms in rats. Method: Rats were administered with QA (200 nmol/2 µl saline) bilaterally on 0 day. Spermidine (5 and 10 mg/kg, p.o.) was administered for 21 days once a day. Behavioral parameters observations were done on 1st, 7th, 14th, and 21st day after QA treatment. On 21st day, animals were sacrificed and rat striatum was isolated for biochemical, neuroinflammation, and neurochemical analysis. QA treatment significantly altered body weight, locomotor activity, motor coordination, oxidative defense, pro-inflammatory levels, GABA, glutamate, catecholamines level and purines level. Result: Spermidine (5 and 10 mg/kg, p.o.) significantly attenuated these alterations in body weight, motor impairments, oxidative stress, neuroinflammatory markers, GABA, glutamate, catecholamines, adenosine, and their metabolites levels in striatum. The neuroprotective effect of spermidine against QA-induced excitotoxic cell death is attributed to its antioxidant, N-methyl-D-aspartate receptor antagonistic, anti-inflammatory properties, and prevention of neurotransmitters alteration in striatum. Conclusion: The neuroprotective effect of spermidine is attributed to its free radical scavenging, antioxidant activity and inhibition of NMDA receptor, which spares the neurons from death and thereby preventing neurotransmitters alteration in striatum.

Keywords: Quinolinic acid, Huntington disease, N-methyl-D-aspartate.

D-196

ARNI- A New Step ahead In the Management of Heart failure (A Review)

Mustafa Ali Mirza
Bharath Institute Of Technology, Ibrahimpatnam,

Hyderabad, Telangana, India
alimirza2395@gmail.com

Abstract:

The burden of cardiovascular disease (CVD) is continuously and progressively raising worldwide. Essential hypertension is a major driver of cardiovascular events, including coronary artery disease, myocardial infarction, ischemic stroke and congestive heart failure. This latter may represent the final common pathway of different cardiovascular diseases, and it is often mediated by progressive uncontrolled hypertension. Despite solid advantages derived from effective and sustained blood pressure control, and the widespread availability of effective antihypertensive medications, the vast majority of the more than 1 billion hypertensive patients worldwide continue to have uncontrolled hypertension. Among various factors that may be involved, the abnormal activation of neurohormonal systems is one consistent feature throughout the continuum of cardiovascular diseases. These systems may initiate biologically meaningful "injury responses". However, their sustained chronic overactivity often may induce and maintain the progression from hypertension towards congestive heart failure. The renin-angiotensin-aldosteron system, the sympathetic nervous system and the endothelin system are major neurohormonal stressor systems that are not only able to elevate blood pressure levels by retaining water and sodium, but also to play a role in the pathophysiology of cardiovascular diseases. More recently, the angiotensin receptor neprilysin inhibitor (ARNI) represents a favourable approach to inhibit neutral endopeptidase (NEP) and suppress the RAAS via blockade of the AT1 receptors, without the increased risk of angioedema. LCZ696, the first-in-class ARNI, has already demonstrated BP lowering efficacy in patients with hypertension, in particular with respect to systolic blood pressure levels, improved cardiac biomarkers, cardiac remodelling and prognosis in patients with heart failure. Sacubritil –valsartan (Entresto, Novartis, still commonly referred to as LCZ696) is a combination drug described as a new class of dual-acting angiotensin receptor-neprilysin inhibitor (ARNi). This combination drug has been successfully studied in patients with heart failure with both preserved (HFpEF) and reduced ejection fraction (HFrEF). In this review, the evidences in patients with HFpEF and HFrEF are summarized,

Keywords: sacubritil+valsartan ,dual acting agent , heart failure.

D-197

Soluble Epoxide Hydrolase Inhibitor, *t*-TUCB, Protects Against Myocardial Ischemic Injury in Rats

Purushottam Singh, Ayush Shrestha and Praveen T. Krishnamurthy

Department of Pharmacology, JSS College of Pharmacy, Ooty - 643001,
Tamil Nadu, India
(A constituent college of Jagadguru Sri Shivarathreeshwara University, Mysuru, India)
purushottamsingh40@gmail.com

Abstract:

The aim of the present study is to evaluate the protective role of a soluble epoxide hydrolase(sEH) inhibitor, trans-4-{4-[3-(4-trifluoromethoxyphenyl)-ureido] cyclohexyloxy} benzoic acid (*t*-TUCB), in isoproterenol (ISO)-induced myocardial ischemic injury in rats. Pretreatment with *t*-TUCB at dose of 3, 10 and 30 mg/kg p.o, for a period of 14 days significantly prevented the changes in EKG

parameters (QTc interval prolongation, ST height depression, pathological Q waves formation and T-wave inversion), serum cardiac biomarkers (CK-MB and LDH), relative heart weight, myocardial calcium levels, infarct size and the oxidative status in the cardiac tissue (lipid peroxidation, catalase and superoxide dismutase levels) when compared with the untreated control animals ($P < 0.05$). Therefore, it is evident from the current study that *t*-TUCB is a potent sEH inhibitor and significantly prevents ISO-induced myocardial ischemic injury in rats.

Keywords: Ischaemic injury; isoproterenol (ISO); soluble epoxide hydrolase inhibitor; *t*-TUCB.

D-199

In vitro Cytotoxicity of Black Pepper Oil and Carrot Seed Oil On Human Skin, Gastric And Brain Cancer Cell Line

Chetan Manjunath and Nitin Mahurkar
Department of Pharmacology, H.K.E.Society's, Matoshree Taradevi Rampure Institute of Pharmaceutical Sciences, Gulbarga - 585105, Karnataka, India
chetanmanjunath1@gmail.com

Abstract:

Essential oils namely black pepper oil and carrot seed oil were used for anticancer studies. The main objective of the study was to evaluate the cytotoxicity of selected essential oils on human skin, gastric and brain cancer cell line using MTT assay. Phytochemical analysis as well as acute oral toxicity tests were carried out in female albino mice with black pepper oil and carrot seed oil according to OECD guidelines 425. *In vitro* anticancer activity of test drugs were performed using A431, MNK-45 and U-87 MG cell line. Phytochemical analysis has shown the presence of carbohydrates, alkaloids, flavonoids and glycosides in black pepper oil. The carrot seed oil has shown the presence of carbohydrates, alkaloids, flavonoids, steroids and glycosides. Acute toxicity studies showed both the essential oils were found to be safe at 2000 mg/kg body weight. Cytotoxic results have shown that carrot seed oil exhibited strongest cytotoxicity towards three human cancer cells namely skin cancer (A431), gastric cancer (MKN-45) and brain cancer (U-87 MG) cell lines with IC_{50} values of 111.23, 245.5, 160.1 respectively. Black pepper oil exhibited strongest cytotoxicity towards gastric cancer (MKN-45) and brain cancer (U-87 MG) cell line. The studies reveal that different concentrations of black pepper oil and carrot seed oil have shown statistically significant (***$P < 0.0001$) anticancer activity.

Keywords: Anticancer activity, carrot seed oil, black pepper oil, cancer cell lines, MTT.

D-200

Anti-allergic Effect of Vanda Spathulata and Evolvulus Alsinoides on Compound 48/80 Induced Allergy in Mice

Sajja Ravindra Babu
Malla Reddy Institute of Pharmaceutical Sciences, Maisammaguda, Hyderabad, Telangana, India
ravicology@Gmail.Com

Abstract:

Introduction: The prevalence of allergic diseases worldwide is rising dramatically in both developed and developing countries. These diseases include asthma,rhinitis, anaphylaxis, drug, food, and insect allergy, eczema and urticaria (hives) and angioedema. This increase is especially problematic in children and young adults. Allergy not only causes long-term immune dysfunction, but also has underlying inflammation, which forms the underlying factor for other non-communicable diseases[1]."Allergic anaphylaxis" is immunologically mediated and involves IgE, IgG and immune complexes. It is a serious allergic reaction that is rapid in onset and may cause death. Assessing the risk for anaphylaxis is difficult. Underlying asthma, particularly if poorly controlled, cardiovasular disease, and delayed medical attention, are risk factors for fatal outcomes of allergic anaphylaxis[1]. Methods: 1. Compound 48/80-induced systemic anaphylaxis The Compound 48/80-induced systemic anaphylactic reaction was examined using a slight modification of the protocol described by shailaja G et al. (2007). Mice (n=10 per regimen) were given an intraperitoneal (IP) injection of compound 48/80 at a dose of 8mg/kg body weight.The control animals received saline

only. Disodium- chromoglycate (10 mg/kg) was administered intraperitoneally as reference standard. Methanolic extract of *vanda spathulata* and *evolvulus alsinoides* were administered at doses of 100, 200 and 400mg/kg orally l hr before the Compound 48/80 injection.Mortality was calculated using the following formula.

Mortality (%) = (Number of of dead mice/Total no.of experimental mice) x 100

Results and Discussion:

Effect of VSME on compound 48/80-induced systemic anaphylaxis.

In vehicle (saline 0.9%) treated group, IP injection of compound 48/80 induced fatal shock in 100% of the mice. Pretreatment with VSME at concentrations 100, 200 and 400mg/kg for 1hr, the mortality induced by compound 48/80 was dose-dependently reduced. VSME(100, 200 and 400mg/kg B/W,p.o) showed mortality rate 80%, 40%, and 10% when compared with control group. Disodium chromoglycate (10mg/kg) treated group showed 100% protection against compound 48/80 induced mortality. From the above results VSME(200 and 400mg/kg) showed 60% and 90% protection against comp 48/80 induced anaphylaxis.

Group	Treatment	Dose (mg/kg)	Compound 48/80 (8mg/kg, i.p)	Mortality (%)
1	Control (saline 0.9%)	1ml	+	100
2	Disodium- cromoglycate	10mg/kg, i.p	+	0
3	VSME	100	+	80
4	VSME	200	+	40
5	VSME	400	+	10

Values are expressed as mean ± SEM. n=10 mice/group. VSME(*Vanda spathulata* methanolic extract).

Effect of methanolic extract of *Evolvulus alsinoides* on compound 48/80-induced systemic anaphylaxis in mice.

In vehicle(saline 0.9%) treated group, compound 48/80 showed 100% mortality. When EAME was administered orally at a dose of 100, 200 and 400mg/kg for 1 hr prior to exposure to 48/80, mortality was dose-dependently reduced. EAME(100,200 and 400mg\kg B/W,p.o) showed mortality rate to 90%, 60%, and 40% when compared with control group. From the above results VSME(400mg/kg) showed greater protection against compound 48/80 induced anaphylaxis.

Group	Treatment	Dose (mg/kg p.o)	Compound 48/80 (8mg/kg, i.p)	Mortality (%)
1	Control(saline)	1ml	+	100
2	Disodium- cromoglycate	10mg/kg, i.p	+	0
3	EAME	100	+	90
4	EAME	200	+	60
5	EAME	400	+	40

Values are expressed as mean ± SEM. n=10 mice/group. EAME(*Evolvulus alsinoides* methanolic extract).

Conclusion:

Ithe present study concludes that methanolic extract of *vanda spathulata* and *evolvulus alsinoides* at 200 and 400mg/kg, shows significant anti allergic activity on compound 48/80 induced systemic anaphylaxis and pruritus activity possibly due to the presence of flavonoids, saponins and tannins.

D-201

Effect of Metallic Curcumin on Breast Cancer Cells

Gourab Sarkar, Manini Acharjya, Madhuri Acharjya and P.K. Panda

University Department of Pharmaceutical Sciences, Utkal University, Bhubaneswar - 751004, Odisha, India

gourab.sarkar2011@gmail.com

Abstract:

Curcumin, which is extracted from the plant *Curcuma longa,* has been used in the therapeutic arsenal for clinical oncology. This spice can be found in curry powder and now receiving considerable attention as a possible chemo preventative and chemotherapeutic action. Curcumin {1,7-bis(4-

hydroxy-3-methoxyphenyl)-1,6-heptadiene-3,5-dione}, was extracted from turmeric. Turmeric (*Curcuma longa*), a tropical herb of the Zingiberaceae family, native to southern Asia, primarily consumed in the form of powdered rhizome, the yellow pigment is one of the major natural spice used for centuries in Indian cuisine. But when curcumins are bonded with metal ions then these are known to posses potential activities in the areas of biological, analytical, microbial, insecticidal, antibiotic, tumor inhibitor, growth factors and food addictive etc. this is due to either the unused co-ordination sites present on the metal and ligand systems or due to the selective oxidation state of the complexed metal ions in the co-ordination sphere. Cu (II)-curcumin complex has the ability to damage DNA. Treatment of breast cancer cells (MCF-7 Cell line) with curcumin copper complex at a concentration of 10µM exhibited enhanced cytotoxicity effect. Due to its enhanced cytotoxic effect and improved free radical quenching ability on breast cancer cells as compared to curcumin along with its ability to induce apoptosis and anti-proliferative activity in the cancer cells higher than curcumin made it a promising anti-cancer agent.

Keywords: *Curcuma longa*, MCF-7 Cell line, Zingiberaceae.

D-202

Screening And Selection Of Most Active Constituent Of *Canscora Decussata* For Enhancing Memory And Motor Coordination Using Grid Based Ligand Protein Interaction With Energetics And Quantified Using HPTLC

Vignesh Balaji E, G. Venkatesh, Roja A, Ravi Kumar Rajan and Abdul Khayum K
Department of Pharmacology, PSG College of Pharmacy, Coimbatore - 641004, Tamil Nadu, India
vigneshra96@gmail.com

Abstract:

The aim of the study is to evaluate the active constituents of *Canscora decussata* (family: *gentianaceace*) for the treatment of memory impairment and motor incoordination through computer aided drug design and HPTLC method. Acetylcholine is a cholinergic neurotransmitter which gets converted into acetate and choline on hydrolysis by acetyl choline esterase enzyme. Due to this the acetylcholine level increases in presynaptic junction leading to increased cholinergic neurotransmission. Acetylcholine esterase inhibitors prevent the hydrolysis of acetylcholine by blocking acetylcholine esterase enzyme. Structure based drug design (SBDD) was carried out using thirty phytoconstituents present in *Canscora decussate* (CD) using GLIDE module of maestro 11 provided by Schrödinger 2017-2 suite . Along with docking studies, the binding free energy (ΔG bind) was also calculated using prime MM/GBSA. Pharmacokinetic and toxicological parameters were predicted using QikProp tool of maestro 11. Crystal structure of acetylcholine esterase was taken from protein data bank (PDB ID: 4EY6) having resolution of 2.4Å. Docking study shown, rutin as a top hit ligand and considerable ADMET predictions. After SBDD, rutin was quantified using HPTLC (CAMAG LINOMAT V 3) keeping standard concentration of rutin at 100µl/ml with the mobile phase: (ethyl acetate: glacial acetic acid: formic acid: water; 10:1:1:0.6v/v/v/v). Quantitative estimation of ethanolic extract of CD showed the rutin presence with 20.70ng/g of extract. Our study suggests that rutin component of CD may be responsible for the memory enhancement and motor coordination of CD. A further study will be an important step for elucidating the proper mechanism of rutin in memory enhancement and motor coordination.

Keywords: Acetylcholine esterase, Structure based drug design (SBDD), GLIDE, MM/GBSA, and QikProp.

D-203

Antioxidant and Antiulcer Activity of Curculigo orchioides Rhizomes Extract on Experimental Animals

Brijesh K. Sharma and Alok Pal Jain
College of Pharmacy, Sarvepalli Radhakrishnan University, Bhopal - 462026, Madhya Pradesh, India
bksmpharm@gmail.com

Abstract:

Curculigo orchioides Gaertn (Hypoxidaceae) is used traditionally in Indian system of medicine as carminative, indigestion, vomiting, diarrhoea and aphrodisiac. Ulcer in either the stomach or

duodenum is called as peptic ulcer, which is one of the common problem in human population. This study aimed to evaluate the antiulcer activity of Curculigo orchioides rhizome. Curculigo orchioides rhizome extract 50-200mg/kg administered orally, twice daily for 5 days for prevention from aspirin induced, ethanol, cold restraint stress and pylorus ligation induced ulcer. Estimation of antioxidant enzyme activity and various gastric secretion parameter like volume of gastric juice, acid output, pepsin and gastric pH value carried out in CRS and PL induced ulcer model respectively.COE showed dose dependent decrease in ulcer index in different ulcer model with decrease in SOD and LPO while increase in CAT level in PL induced ulcer model. COE also showed marginal decrease in volume, acid pepsin concentration and output. The result showed that COE possesses antiulcer property with significant antioxidant potential.

Keywords: Curculigo orchioides, Antiulcer, Antioxidant.

D-204

Evaluation Of Analgesic Ativity Of The Plant *Talinum Fruticosum(l.) Juss*

Partha Pratim Barman and Smritirekha Chanda Das
Department of Pharmaceutical Chemistry,
Girijananda Chowdhury Institute of Pharmaceutical Science, Guwahati - 781017, Assam, India
parthapratimbarman24sep@gmail.com

Abstract:

Talinumfruticosum(L) Juss (Family-Talinaceae) a potent medicinal plant found in Northeast, is usedfor the treatment of inflammation, hyperglycemia, antioxidant etc. The present study was undertaken to evaluate the analgesic activity on the basis of traditional claims. Aqueous and alcoholic extracts of *Talinum fruticosum*(L) Juss (arial parts of the plant)were evaluated for the analgesic activity using eddy's hot plate and heat conduction method. In Eddy's hot plate method the aqueous extract showed significant analgesic activity at the doses of 500 mg/kg ($p<0.01$) and 1000 mg/kg ($p<0.001$) and alcohol extract showed significant analgesic activity at the dose 1000 mg/kg ($p<0.001$). In heat conduction method both extracts showed significant analgesic activity at the doses of 500 & 1000 mg/kg ($p<0.001$) as compared to control group, when analyzed statistically by Tukey Kramer Multiple Comparison Test. The result obtained show that the aqueous and alcohol whole plant extracts of ***Talinum fruticosum***(L) Juss possesses significant analgesic activity which confirms the traditional claims of the plant.

Keywords: *Talinum ruticosum*(L) Juss, Talinaceae, arial part, Analgesic activity.

D-206

A Review on Swine Flu (H1N1 Flu)

Shaheen Parveen, Suman Shah and Vikas Sharma
Columbia institute of pharmacy, Raipur,
Chhattisgarh, India
bindassshaheen100@gmail.com

Abstract:

Swine flu refers to swine influenza or the viral infection caused by any one of the several types of swine influenza virus .The term "influenza" derived from Italian word "influence" was coined in 1357AD as the disease was thought to be caused by influence of stars .Only people who used to have direct contact with pigs were observed to get swine flu in past. But H1N1 virus is a new swine flu and it contains genetic material of birds and human influenza virus. It is a influenza A virus .The aim of this study is to create a general awareness and attitude toward swine flu amongst the people of country. The swine flu H1N1 reasserted subtype caused the first pandemic in last 40 years, resulting in substantial illness, hospitalization of millions of peoples and thousands of death throughout the world. Swine flu also called as hog, or pig flu. The problematic virus is first detected in America 2009 and the virus is the most widely studied virus in the present day. It can produce a number of symptoms in both adults and children .In India day by day the graph of infected persons has been climbed up. so in this review ,a brief overview on swine flu is presented highlighting the characteristics of the causative virus ,the disease and its public health consequences ,advances made in its diagnosis ,vaccine and control, and there precautionary measures to be adapted.

Keywords: Swine influenza, Pandemic, H1N1 virus, Hog.

D-207

Screening of Sugar Modified Nucleoside Analogues for Anti-Herpes Activity by Using MTT, SRB and CPE Assays

Akhil A.E, Tameem A, Sriharsha S.N and Jesindha B
Hillside College of Pharmacy and Research Centre, Bangalore - 560062, Karnataka, India
akhilcute1997@gmail.com

Abstract:

Herpes is an infection caused by HSV (herpes simplex virus). There are two types: HSV-1 (type 1) and HSV-2 (type 2). The ability of the cells to survive a toxic insult has been the basis of most cytotoxicity assays. MTT (Methyl thiazolyl Tetrazolium) assay is based on the assumption that dead cells or their products do not reduce tetrazolium. Currently prescribed reverse transcriptase inhitbitors such as, Zidodine, Stavudine etc suffer with serious side effects such as granulocytopenia, haematological and teratogenic toxicity. Among prescribed antiviral nucleosides lamivudine is considered safer, because devoid of adverse effect. It could be so because 5 membered sugar modified residue. Similar sugar modified nucleosides with structural resemblance to lamivudine has been synthesized and screened for Anti-Herpes activity. All sugar modified nucleoside analogues **1-5** showed protection at tested virus challenge dose. The compounds **4** and **5** containing bromo and chloro substituents at the 5th position of pyrimidine moiety showed potent inhibition of virus at CTC_{50} (µg/ml) 153.05 ± 3.56 in MTT assay and 157.12 ± 5.12 in SRB assay for compound **4.** Similarly CTC_{50} (µg/ml) 172.05 ± 5.56 in MTT assay and 177.12 ± 6.12 in SRB assay for compound **5**.

Keywords: Sugar Modified Nucleosides, Cytopathic Effect, Methyl thiazolyl Tetrazolium (MTT), Sulphorhodamine B.

D-208

Assessment of Alcoholic Flush Reaction in Different People Who are Regular in Alcohol and Measures to Reduce Alcoholic Flush

Pulloori Pooja
Sree Chaitanya Institute of Pharmaceutical Sciences LMD Colony, Thimmapur, Karimnagar, Telangana, India
poojapulloori.1996@gmail.com

Abstract:

Alcoholic flush syndrome is a condition in which the individuals develop flushes or blotches associated with erythema on face, neck, shoulders etc. This reaction is a result of accumulation of acetaldehyde, a metabolic byproduct of catabolic metabolism of alcohol. **Materials and methods:** Our study is prospective observational study conducted for a period of 14 months in 3 tertiary care hospitals and few rural areas using a questionnaire prepared based on information collected from the patients with patient consent and ethical committee by the hospital. The data was analysed by different software and was typed in Microsoft word 2010. **Results:** Out of 702 people, 639 people cooperated with us and provided the information that was demographics, side effects, complications, treatment regimens, counseling methods and the results were discussed. **Discussion:** Out of 702 people, 639 people are interested to give the information of which maximum were males 421 (65.58%), females 218 (34.12%), educational level of secondary 368 (57.58%), Nutritional status of mainly average 394 (61.65%) and reason for consumption is due to financial disturbances 315 (49.29%) and during consumption they use to light maximum of 2 packs per day 235 (36.77%), and minimum of 500ml 283 (44.28%) consumed by the people to overcome the stress is of moderate. The side effects due to alcohol were mainly nausea and vomiting 135 (22.12%) and headache of 112 (17.52%), complications occurred due to alcohol were esophageal cancer 106 (16.58%) and liver cirrhosis 97 (15.17%). The treatment given for alcohol cessation is mostly disulfiram 277 (64.87%) is given. The counseling techniques are followed to avoid alcohol. The most commonly followed counseling technique in these patients was CBT (36.82%) and aids for alcohol cessation was discussed. **Conclusion:** Our study concluded that the people who are suffering with alcoholic flush syndrome mainly were males due to their financial problems and the stress facing in their life. To get relieve from the problems,

the people are highly addicted to alcohol and faced several side effects and complications due to over alcohol consumption. Our government should take measures and provide awareness programs about stoppage of over usage of alcohol which makes the life better. Unemployment is also one of the common reason for alcohol consumption. As clinical pharmacists, we should provide utmost information to the chronic alcoholics and counsel them regarding complications and adverse effects occur in future.

D-209

Histological Changes Mediated by *Bergenia ligulata* in Gentamicin Induced Nephrotoxicity

Aarti Midha, Deepa Khanna and Sanjeev Kalra
Rajendra Institute of Technology and Sciences, Department of Pharmacology, Sirsan -125055, Haryana, India
7drdeepa@gmail.com

Abstract:

Kidney is an important organ, whose functions are altered by the chemical variables like drugs and environmental contaminants. Gentamicin induced nephrotoxicity involved the reduction of renal blood flow, oxidative stress, lipid peroxidation and inflammation. Gentamicin-treated alterations in the kidney appeared in the form of histological changes. Stone breaker (Pashanbheda) is a well-known Indian drug referred as *Bergenia ligulata* belonging to family Saxifragace. It provides significant help in dissolving preformed stones. In the present investigation Gentamicin was administered intraperitoneally (*i.p.*) at a dose of 80mg/kg/daily, while ethanolic extract of *Bergenia ligulata* used was suspended in 2% Gum acacia and given orally. The presence of injury in kidney by gentamicin was revealed by histopathological examination, which was reverted by pretreatment of *Bergenia ligulata at two different doses*.

Keywords: Gentamicin, *Bergenia ligulata,* Pashanbheda, Nephrotoxicity.

D-210

Role of Negative Pressure Wound Therapy in Diabetic Foot Ulcers

P. Thriveni, SK Parveen, Amarnath and Rispa, Hindu College of Pharmacy, Amaravathi Road, Guntur – 522002, Andhra Pradesh, India
thrivenipulusu0424@gmail.com

Abstract:

The purpose of this study was to evaluate safety and clinical efficacy of the negative pressure wound therapy (NPWT) to treat foot ulcers in diabetic patients. This prospective trial enrolled 50 patients with a mean age of 45-55 years; 70% were male. Complete ulcer closure was defined as skin closure (100% reepithelization) without drainage or dressing requirements. Patients were randomly assigned to negative pressure wound therapy(NPWT) (vacuum-assisted closure) and received standard off-loading therapy as needed. The trial evaluated treatment until day 45 or ulcer closure by any means. Patients whose wounds achieved ulcer closure were followed at 3 to 6 months. Each study visit included closure assessment by wound examination and tracings. A greater proportion of foot ulcers achieved complete ulcer closure with negative pressure wound therapy (NPWT) within the 45 days active treatment. The median estimate for 100% ulcer closure was 45 days for negative pressure wound therapy (NPWT) . Negative pressure wound therapy (NPWT) patients experienced significantly fewer to secondary amputations. The proportion of home care therapy to total therapy 45 days for Negative pressure wound therapy (NPWT) . In assessing safety, no significant difference between the groups was observed in treatment-related complications such as infection, cellulitis, and osteomyelitis at 6 months. Negative pressure wound therapy appears to be as safe as and more efficacious than other conventional therapies such as moist dressings for the treatment of diabetic foot ulcers.

Keywords: Negative pressure wound therapy , Reepithelization , Osteomyelitis , efficacious , tracing .

D-211

Evidences of Diet Restriction in the Management of Diabetes

Onkar Bedi, Pawan Krishan and Gaaminepreet Singh
JRF, DST-SERB, New Delhi, Department of

Pharmaceutical Sciences and Drug Research, Punjabi University, Patiala, Punjab, India
jagrit143@gmail.com

Abstract:

Dietary restriction and nutritional therapy play an important role in the prevention of various chronic ailments which includes age related pathologies like diabetes and cardiovascular disorders. Pre-clinical research provides a basis for the therapeutic exploration of new dietary interventions for the clinical trials to potentiate the scientific management of diabetes and its related complications which further help in translating these nutritional improvements from bench to bedside. Similarly, numerous therapeutically proved preclinical dietary interventions like high fibre diet, caloric restriction, soy isoflavone - containing diets etc have shown the promising results for the management of diabetes and their linked complications. The highlights of present review is various pre-clinical evidences of diet restriction for the management of diabetes and which will be helpful for enlightening the new ideas of nutritional therapy for future research exploration. In addition, some potential approaches are also discussed which are associated with various nutritional interventions to fight against the progressive diabetes and the associated disorders.

Keywords: Dietary restriction (DR), nutrition therapy & caloric restriction (CR).

D-212

Evaluation of Antiarthritic Potential of *Curcuma Caesia Roxb* Rhizome

Mamta Kumari and Madan L. Kaushik
Department of Pharmacology, CT Institute of Pharmaceutical Sciences, Jalandhar, Punjab, India
mamtamn78@gmail.com

Abstract:

The objective of present study was to investigate the anti-arthritic effect of ethanolic and aqueous extract of *Curcuma caesia Roxb.* rhizomes on Freund's Complete Adjuvant (FCA) induced arthritis in male Wister rats. Rheumatoid arthritis (RA) is a chronic, painful autoimmune inflammatory disease which affects people especially women in high rate. The rhizomes of *Curcuma caesia Roxb.* were collected, shade dried and powdered. Then powered material was extracted with ethanol by maceration process. The aqueous extract was obtained by maceration with distilled water. The rats were divided into 4 groups comprising of 6 animals in each group as Control Group, Standard Group (Indomethacin 10mg/kg), Test Group-I, 200mg/kg.p.o. and Test Group-II, 200 mg/kg.p.o**.** for evaluate the anti-arthritic activity. Following parameters have been selected to evaluate the anti-arthritic effect such as paw volume, body weight, SGOT, SGPT, and hematological profile WBC, RBC, ESR and hemoglobin content were observed. The results indicate that paw edema is reduced in all treated groups compared with control group. The significant recovery was observed in body weight and hematological profile compared with control group. The level of SGOT and SGPT were not changes in drug treated groups except standard group. The ethanolic extract 200mg/kg is highly potent as compared to aqueous extract. The ethanolic extract of *C. caesia Roxb* may be beneficial for arthritis.

Keywords: Anti-arthritic, *Curcuma caesia Roxb,* Freund's Complete Adjuvant (FCA), Indomethacin.

D-213

Glaucoma: Review Paper

A. Sharni
Columbia Institute of Pharmacy, Tekari, Near Vidhan Sabha, Raipur – 493111, Chhattisgarh, India
asharni20@gmail.com

Abstract:

Glaucoma is a slow progressive degeneration of the retinal ganglion cells and the optic nerve axons, leading to irreversible blindness if left undiagnosed and untreated. Although increased intraocular pressure is a major risk factor of glaucoma, other factors include increased glutamate levels, alterations in N2O,metabolism, vascular alterations and oxidative damage caused by reactive oxygen species. Prevention/control of raised intraocular pressure is the primary goal in the management of glaucoma. Modern medicine focuses on three separate targets: IOP, outflow facility, and the retinal

ganglion cell, to help us achieve the ultimate goal of therapy and to preserve the visual function in these patients.These include the development of a new class of IOP lowering medications (Rho-kinase inhibitors), newer and safer techniques for surgically reducing IOP and the development of non-IOP dependant therapies such as neuroprotection. Glaucoma is the second leading cause of blindness. Worldwide, it is estimated that about 66.8 million people have visual impairment from glaucoma, with 6.7 million suffering from blindness.cholinergic drugs are the first class of agents which are used for treatment of glaucoma. Pilocarpine is available in concentrations ranging from 0.5 to 10% eye drops. Clonidine is the first available a-2 agonist, for the treatment of glaucoma.

Keywords: cholinergic drugs, a-2 agonist.

D-214

Pheochromocytoma: Recent Advancement and Medication

Prapti Pattanayak

Columbia Institute of Pharmacy, Tekari, Near Vidhan Sabha, Raipur – 493111, Chhattisgarh, India

prapti.pattanayak@gmail.com

Abstract:

Pheochromocytoma (PCC) is a neuroendocrine tumor of the medulla of the adrenal glands (originating in the chromaffin cells), or extra-adrenal chromaffin tissue that failed to involute after birth, that secretes high amounts of catecholamine, mostly norepinephrine, plus epinephrine to a lesser extent. Upto 25% of pheochromocytoma may be familial mutation of the gene and also because of the excess secretion of the catecholamines**.** High blood pressure is the main cause of pheochromocytoma. Approximately one-third of pheochromocytoma cases occur when patients inherit a mutated gene from their parents. Studies have linked several genes to the disease, but researchers are not sure how these genes contribute to the formation of this tumor**.** Standard treatments for pheochromocytoma include surgical removal of the tumor, medications and radiotherapy. Commonly prescribed medications include Alpha-adrenergic blockers beta blockers. Medical therapy is used for preoperative preparation prior to surgical resection, for acute hypertensive crises, and as primary therapy for patients with metastatic pheochromocytomas. Labetalol is a non cardioselective beta-adrenergic blocker and selective alpha-adrenergic blocker that have been shown to be effective in controlling hypertension associated with pheochromocytoma.

Keywords: Pheochromocytoma, Beta blockers, Alpha-adrenergic.

D-216

Changes in Gene Expression Contribute To Cancer Prevention by Cox Inhibitors

Charul Lautre, Sneha Chakrabarty, Jhakeshwar Prasad, Ashish Kumar Netam and Trilochan Satapathy

Columbia Institute of Pharmacy, Tekari, Raipur - 493111, Chhattisgarh, India

charullautre1997@gmail.com

Abstract:

Cancer is one of the most prevalent causes of human death world wide. Several natural agents and synthetic agents have been reported to play a pivotal role in the prevention of cancer. Recent research revealed that non-steroidal anti-inflammatory drug (NSAID) activated gene-1 (NAG-1) has been focused as a target of action against diverse cancers like colorectal, pancreatic, prostate, and breast etc. NAG-1 is a divergent member of the transforming growth factor-β (TGF-β) superfamily, which has pro-apoptotic and anti tumorigenic activities also. NSAIDs inhibit cyclooxygenase-1 (COX-1) and/or cyclooxygenase-2 (COX-2) activity and considerable evidence supports a role for prostaglandins in cancer development. COX inhibitors also alter the expression of a number of genes that influence cancer development. In this review our efforts have been devoted to explore the detail mechanism for the chemo preventive effect of NAG-1 gene by their up regulation.

Keywords: Chemoprevention, COX, NSAIDS, NAG-1.

D-217

An Experimental Study of Lovastatin Nanoemulsion Gel on Glucocorticoid Induced Osteoporosis in Male Rats

Ramandeep Kaur and Makula Ajitha
Centre for Pharmaceutical Sciences, Institute of Science and Technology, Jawaharlal Nehru Technological University, Kukatpally, Hyderabad - 500085, Telangana, India
rkmann_87@yahoo.co.in

Abstract:

In the present research, anabolic and anti-resorptive effects of statin nanoemulsion gel (SNG) were studied on glucocorticoid induced osteoporosis (GIOP) in male wistar rats. Rats (n=24) were divided into four groups (six animals each): (I) normal rats, (II) dexamethasone 25 mg/kg/d subcutaneous injection twice a week (control), (III) Dexamethasone (25 mg/kg/d, twice a week) + lovastatin nanoemulsion gel 5mg/kg/d transdermal daily (NG), (IV) Dexamethasone (25 mg/kg/d, twice a week) + Alendronate 0.03 mg/kg/d orally daily (ALD), for 60 days. Blood serum was collected at various time intervals: before and after osteoporosis induction, and after treatment of diseased condition. Serum was analyzed for calcium, phosphorus, alkaline phosphatase (ALP), creatinine, SGOP, and SGPT biochemical indices using fully automatic Sphera autoanalyzer. Histopathological study was performed on the distal femur region using hematoxylin and eosin staining. Dexamethasone induced severe bone loss, with reduced ALP levels ($p<0.05$), reduced calcium and phosphorus levels too. LNG treated groups showed significantly higher ALP ($p<0.05$), calcium ($p<0.01$) and phosphorus ($p<0.01$) levels whaen compared with disease control group. The present study results suggest potential effects of LNG in GIOP. However, further studies relating to clinical efficacy and safety in GIOP patients needs to be carried out.

D-218

Evaluation of Anti-Nociceptive Activity of Methanolic Extract of *Potentilla anserina* in Albino Rats

Shaik Sadik, Geetha K.M and Laxshmi Manisha
Department of Pharmacology, Oxbridge College of Pharmacy, Bengaluru, Karnataka, India
sadik849040@gmail.com

Abstract:

Potentilla anserina (Rosaceae) is traditional medicinal plant in India and it is available throughout the Northern hemisphere. This study was intended to evaluate the Anti-nociceptive activity of methanolic extracts of *Potentilla anserina* leaves in Acetic acid induced Writhing test and Eddy's Hot Plate method in albino rats at the dose level of 75, 150 and 300 mg/kg p.o and study was compared with the standard drug Indomethacin 10mg/kg p.o. The methanolic extract of *Potentilla anserina* showed significant Anti-nociceptive activity in acetic acid induced Writhing method i.p injection of PAME (75, 150,300 mg /kg) 1hr before a pain stimulus significantly reduced the nociceptive response. In the hot plate method there was no significant difference in nociceptive behavior.

Keywords: *Potentilla Anserina*, Indomethacin, Acetic acid.

D-219

Need of Pharmacovigilance for Herbal Products

Himanshi Walia
Chitkara College of Pharmacy, Chitkara University, Rajpur, Patiala, Punjab, India
mishu26296@gmail.com

Abstract:

INTRODUCTION The applicability of the herbal medicines has increased although certain reactions which may be lethal have been detected in many of the cases including tolerances, dependence, overdose, hypersentivity, teratogenecity etc. Therefore, in order to address these effects WHO has proposed certain guidelines to ensure the correct use of such preparations. **OBJECTIVE** The primitive objective of this study is to identify the numerous guidelines laid in the sector of pharmacovigilance for the safety, stability and efficacy of herbal formulations. This is necessary for the transparent identification of the various adverse events and provide required guidance on the basis of good pharmacovigilance data.

CHALLENGES FOR THE PHARMACOVIGILANCE OF HERBAL PREPARATIONS

Herbal medicines are chemically very rich and are obtained from heterogeneous sources. The preparation and formulation of herbal medicines can be affected by various factors such as geographical origin including climate, soil etc. Often hesitation is seen among the people to admit to their physicians that they use herbal preparations and thereby the therapy is affected.

PHARMACOVIGILANCE MONITORING METHODS

S.NO	SOURCE	DISCUSSION
1	REPORTS FROM HEALTH CARE PROFESSIONAL S	Directly affiliated with patient care
2	CUSTOMER RE-PORTS	Regarded as serious information source. Varies from person to person.
3	MANUFACTURERS	Legal concerns and cosumers demands
4	OTHER SOURCES	Include drug information centres,clinical studies,tests

CONCLUSION

Thereby we conclude that in order to assess the adverse effects caused by herbal preparations, a "herb vigilance" system is required to be conducted. The data can be obtained from patients and healthcare professionals. Pharmacovigilance is to be managed properly keeping in account all the laws and regulations with dependable guidance.

D-221

Review and Assessment for Prevention and Control of Influenza in Children: Current Status

Ankita Singh, Prashant Mathur, Meenakshi Bhatt and Preeti Kothiyal

Department of Pharmaceutical Sciences, SGRR University, Dehradun, Uttarakhand, India

anki9387@gmail.com

Abstract:

Influenza commonly known as the flu is highly contagious infection of the airways caused by Influenza viruses. It is often referred to as seasonal influenza because these viruses circulate annually in the winter season in the northern hemisphere. The timing and duration of influenza season various-outbreaks can happen as early as October but most often activity peaks in January or later. Between July 2010 and June 2014, 358 children died from infection with influenza. According to guidelines 2016-17 for the Annual universal influenza immunization is indicated with either a trivalent or quadrivalent inactivated vaccine. The 2017-18 influenza A (H1N1) vaccine strain differs from that contained in the 2016-17 seasonal vaccine. The 2017-18 (H3N2) influenza A vaccine strain and influenza B vaccine strain included in the trivalent and quadrivalent vaccines that are the same as those contained in the 2016-17 seasonal vaccines. Influenza A (H5N1) virus continues to cause sporadic human infections in some countries, with 72 cases (32 deaths) reported in 2009 in 5 countries. Reviewed Treatment or guidelines moderate or severe influenza such as individuals who are hospitalized with influenza like illness. Guidelines (2016-17) Oseltamivir use oral and zanamivir dry powder for injection and for serious and progressive illness. The American Academy of Paediatrics (AAP) recommends annual season influenza immunization for everyone 6 months and older including children and adolescent. We studied the articles from the year 2009-2017 for making the study better. The study concluded that Oseltamivir and Zanamivir are the medications which is used for the treatment.

D-222

Implicating Insulin in the Development and Progression of Proliferative Diabetic Retinopathy Patient: Whole Genome Microarray Insights

Nikhil Shri Sahajpal, Vipan Kumar Vig, Rajesh Kumar Goel, Dara G Wright, Alka Chaubey and Subheet Kumar Jain

Department of Pharmaceutical Sciences, Guru Nanak Dev University, Amritsar, Punjab, India

nikkhilsehajpal@gmail.com

Abstract:

Diabetic retinopathy is the leading cause

of blindness amongst working aged adults across the globe. Enormous work is being carried out to understand the pathophysiology of diabetic retinopathy. Initiating intensive insulin therapy in type 2 diabetes patients is a routine clinical practice throughout the world. However, this predisposes these patients to a marked increase in retinopathy risk, with initial 'worsening' of retinopathy in the first two years. Further, several in-vitro and preclinical experiments have been conducted to acknowledge these findings. However, no functional clinical evidence had been reported that implicated the pathological role of insulin in the development or progression of diabetic retinopathy. Thus, here we report for the first time, a direct implication of insulin and a correlation with vascular endothelial growth factor level in a proliferative diabetic retinopathy patient analysed using Thermo Fisher Scientific, USA, ELISA kits. Further, to investigate for any genomic attribution to this finding, whole genome microarray (Affymetrix CytoScan HD; Affymetrix Inc., Santa Clara, USA) was performed. Several genes were directly implicated in the development and progression of proliferative diabetic retinopathy which could be responsible for these pathological changes in this patient.

D-223

Investigation of Possible Involvement of Protein Tyrosine Phosphatase in Alcoholic Cardiomyopathy in Rats

Shivani Verma, Manpreet Kaur and Saurabh Sharma
Department of Pharmacology, ISF College of Pharmacy, Moga - 142001, Punjab, India
shivaniverma1293@gmail.com

Abstract:

Introduction Chronic ethanol intake has been documented to decrease the phosphorylation of PI3K/Akt (protein kinase B) survival kinase pathway. Increase in Protein tyrosine phosphatases activity may be a key mechanism in dephosphorylation of PI3K/Akt survival kinase pathway consequently leading to alcoholic cardiomyopathy (ACM). Therefore, the present study has been designed to investigate the effect of PTPase inhibitor- Sodium orthovanadate (SOV) in alcoholic cardiomyopathy.

Materials and Methods Alcoholic Cardiomyopathy in wistar rats was produced by administration of alcohol (5 ml of 20% alcohol per 100g i.e. 7.9 g/kg) for 60 days by intragastric intubation. **Parameters employed** Cardiomyopathy was assessed in terms of decrease in LVDP (mmHg), LVEDP, dp/dtmax, dp/dtmin, CFR, MABP and LVW/BW. Decrease in Protein content, LV collagen content and nitite level was also estimated in isolated heart homogenates. Furthermore increase in iNOS expression (RT-PCR) and TNF-α levels (ELISA) was also assessed as an index of inflammation. **Results** Ethanol administered for 60 days produces ACM assessed in terms of decrease in LVDP, dp/dtmax, dp/dtmin, LV protein content, CFR and increase in LVEDP, LVW/BW, MABP, LV collagen, LV cholesterol content, TNF-α, nitrite levels and iNOS expression. SOV 2.5mg/kg, 5mg/kg and 10 mg/kg significantly attenuated CM in terms of parameters employed. Furthermore, administration of SOV (10mg/kg) along with SMT (5mg/kg) increased the ameliorative effect of SOV.

Conclusion Therefore, it is concluded that sodium orthovanadate attenuates alcoholic cardiomyopathy in wistar rats possibly by inhibition of PTPases and decrease in TNF-α and iNOS expression.

Keywords: Alcoholic cardiomyopathy (ACM). Sodium orthovanadate (SOV) Left ventricular developed pressure(LVDP) Left ventricular end diastolic pressure (LVEDP) Left ventricle/body weight ratio(LVW/BW).

D-224

Monitoring Of Patients in Hospital Undergoing Chemotherapy

Rajni Yadav, Amit Roy and Ram Sahu
Department of Pharmacology, Columbia Institute of Pharmacy, Raipur, Chhattisgarh, India
rajniyadav303@gmail.com,

Abstract:

Cancer cells keep growing without control.

Chemotherapy is drug therapy for cancer. It works by killing the cancer cells, stopping them from spreading, or slowing their growth. However, it can also harm healthy cells, which causes side effects. The chemotherapy or chemo hormonal therapy for cancer treatment involves careful consideration of both the potential benefits and possible risks of therapy. There are substantial short- and long-term side effects from chemotherapy. These side effects vary, depending on the specific agents used in the adjuvant regimen as well as on the dose used and the duration of treatment. The research study will focus on the short- and long-term side effects (ADR) associated with the most commonly used adjuvant chemotherapy and measures taken to monitor them. The intensive research study was carried out at Sanjeevani cancer Care Hospital, Raipur. The patients taking chemotherapy cycles were the inclusion criteria and the patient's visiting outpatient department (OPD) were the exclusion criteria. The study was done on 60 patients of different cancer types and who were on different chemo cycle treatment based on the stage of cancer. The chemo regimens used mostly were CMF, CAF, AC, CEC, MF, FEC and FAC. Various side effects were reported by the combinations of chemo drugs such as nausea, fatigue, vomiting, nephrotoxicity, cognitive dysfunction, leukaemia, cardiac side effects, hair loss, sores in throat, myelosupression etc. Various other factors such as haematological parameters, blood pressure etc also fluctuated during chemotherapy cycles. All these parameters were included in the study for monitoring. The patient's health profile data were monitored by administering various drugs which can overcome the side effects and the findings reported were patient's experienced fewer problems during each chemo cycles. Patient counselling was done at every interval to increase patient compliance. Patient monitoring form was maintained for detail studying of patient history and the chemo drugs he/she was receiving which helped in monitoring them.

Keywords: Cancer chemotherapy, pharmacovigilance, side effects, monitoring.

D-225

Antifertility Activity of Extracts of Whole Plant of *Cynodon dactylon* Linn.

Arati Malpani and Nitin Mahurkar
Department of Pharmacology, H.K.E.Society's MatoshreeTaradeviRampure Institute of Pharmaceutical Sciences, Gulbarga – 585105, Karnataka, India
aratimalpani@yahoo.co.in

Abstract:

The objective of the study was to evaluate the antifertility activity of ether, chloroform and ethyl alcohol extracts of whole plant of *Cynodon dactylon* Linn. in female Wistar albino rats. Different extracts of *Cynodon dactylon* were prepared by hot percolation method using Soxhlet apparatus at 40°C for 48 h. Phytochemical analysis as well as toxicity (in mice) for different extracts of *Cynodon dactylon* were carried out according to OECD guidelines 425. Ether, chloroform and ethyl alcohol extracts of *Cynodon dactylon* (100mg/kg and 200mg/kg) were administered for 7 days from 1st day of pregnancy in the female Wistar albino rats and on 10th day laprotomy was performed and number of implants were recorded along with number of pups after delivery. Phytochemical analysis has shown the presence of carbohydrates, flavonoids, steroids, alkaloids, and glycosides in different extracts of whole plant of *Cynodon dactylon* Linn. All extracts were safe at a dose of 2000 mg/kg body weight. The results of antifertility activity show significant reduction in number of implants ($p<0.001$) and number of pups born ($p<0.0001$) in all extract groups (100mg/kg and 200mg/kg) compared to control. All extracts of whole plant of *Cynodon dactylon* Linn. showed potent antifertility activity which may be due to the presence of phytochemical constituents like flavonoids, steroids, alkaloids or glycosides. Among all three extracts, ethyl alcohol extract of *Cynodon dactylon* Linn (EyCD) had shown 100% abortifacient activity.

Keywords: Antifertility activity; abortifacient; *Cynodon dactylon* Linn.

D-226

Design and Optimization of a New Rat Exercise Screening Method to Perform the Weight Analysis and Anti-anxiety Effect of Drugs

Vaishali Patil, Priyanshi Sahu, Vinay Shastri, Jacky Dumbwani and Sanjay Jain
Indore Institute of Pharmacy, Rau-Pithampur Road, Opp. IIM, Rau, Indore - 453331, Madhya Pradesh, India
vaishalipatil301996@gmail.com

Abstract:

Many inventions show that models for various pharmacological activities are based on or run with the help of electricity like, Rota rod apparatus, electro convulsion meter, photo meter etc. The recent study is based on the mechanical energy factor. The new rat exercise screening method is based on the rotating disc on its axis with longitudinal rod, the muscle strength of rat rotate the disc in clock wise and antilock wise direction. The model can be used for various behavioral studies like ant anxiety effect of drugs and weight reduction studies. The model is based on the height factor for the behavioral studies and for weight reduction it is based on the rotation of disc by the muscle strength of the rat. The model can be modified as per the demand of study for varying weight of animals by reducing and increasing the dimensions of model. The new rat exercise model is designed and optimized for optimization of the model the height factor, decline angle, rotating direction and time of experiment were taken into consideration, The height was gradually increased from the minimum height of 30 cm to maximum height of 120 cm. and the optimum height of 70 cm was finalized.

Keywords: Rat exercise, Screening methods, Obesity, Anxiety, Behavioral models, Optimization.

D-227

Anti-Fatigue Effect of Glycyrrhizin on Chronic Fatigue Syndrome in Mice

Kavya Pandiri, D. Sravani and B. Veeresh
Department of Pharmacology, G Pullareddy College of Pharmacy, Osmania University, Hyderabad - 500007, Telangana, India
kavyapandiri95@gmail.com

Abstract:

Chronic fatigue syndrome (CFS) is an illness characterized by persistent and relapsing fatigue, often accompanied by numerous symptoms involving various body systems. The objective of the present study was to evaluate the protective effect of glycyrrhizin on Chronic Fatigue Syndrome in mice. Glycyrrhizin, a triterpenoid saponin is reported to possess Anti-inflammatory, Anti-pyretic and Anti-cancer, by virtue of its anti-oxidant property. Induction of CFS significantly decreased the immobility time; number of marbles buried, and decreased sociability and social novelty by concurrent increase in the MDA, catalase levels and decrease in GSH and SOD levels in brain while treatment with glycyrrhizin and a potent antioxidant carvedilol produced a significant reduction in immobility period. Fluoxetine a selective serotonin reuptake inhibitor produced a significant effect only on first and second day of its treatment. Biochemical analysis revealed that chronic swimming significantly induced lipid peroxidation and increased glutathione (GSH) levels in the brains of mice. The mice also showed increased levels of antioxidant defence enzymes, superoxide dismutase. Co-administration of antioxidants carvedilol, glycyrrhizin significantly reduced lipid peroxidation and restored the GSH levels increased by chronic swimming in mice. The present study suggests that treatment with glycyrrhizin significantly ameliorated the FST induced CFS and this is due to its antioxidant property.

Keywords: Chronic fatigue syndrome; Forced swimming test; glycyrrhizin; Oxidative stress; Lipid peroxidation.

D-228

Comparative Acute Oral Toxicity And Cytotoxic Evaluation Of Xanthines

Harjeet Singh and Subheet Kumar Jain
Department of Pharmaceutical Sciences, Guru Nanak Dev University, Amritsar - 143005, Punjab, India
harjeetpharma1@gmail.com

Abstract:

7-methylxanthine (7-MX) is a first of its kind molecule investigated for the treatment of myopia.

The present study was aimed to evaluate the acute toxicological effects of 7-methylxanthine in two rodent species viz Wistar mice and rats as per OECD guideline no. 423, in comparison to other clinically used xanthines, i.e. caffeine and theobromine. 7-MX was administered at the dose of 300 mg/kg and 2000 mg/kg (b.w, p.o) for acute toxicity in comparison to caffeine and theobromine at there respective LD_{50} values, in both the rodent species. No signs of behavioral changes such as tremors, convulsions, salivation, diarrhea, lethargy and coma were observed. There were no significant changes in body weight and feed intake profile. The histopathological study showed no significant changes in the brain, lungs, heart, kidney, spleen and stomach at both the doses of 7-MX in both the rodent species. No mortality was observed in 7-MX treatment groups whereas, 66.6 % (mice) and 33.3 % (rat) mortality was observed on treatment with caffeine and theobromine at there respective LD50 doses. Furthermore, IC_{50} value of 7-MX was found to be 721 mcg in rat brain cell line. Thus, 7-MX may be used for the treatment of myopia, as per a safe toxicological profile in comparison to other xanthines.

Keywords: 7-methylxanthine, toxicity, xanthenes.

D-229

Anti-Diabetic Activity of Bio-Conjugated Silver Nanoparticles

Nihar Ranjan Muduli, Nabanita Patra and Anindita Behera
Department of Pharmaceutical Analysis and Quality Assurance, School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar, Odisha, India
niharranjanmuduli7@gmail.com

Abstract:

Health problem with enzymatic disorder which causes high blood sugar levels in body, called Diabetes and a leading cause of death all over the world. Enzyme like Alpha-amylase, Alpha-glucosidase play an important role in carbohydrate digestion and glucose absorption resulting in increased glucose in blood. So inhibition of activity of these enzyme is one of the treatment strategy for the management of diabetes. In this work, bio-conjugated Silver nanoparticles (AgNP) ware synthesized and anti-diabetic activity of synthesised AgNP was sereened. Aqueous leaves extract of *Saraca asoca* was used for the synthesis of AgNP and nanoparticles were characterized by VU-Visible spectrophotometer and SEM analysis. Monodispers AgNP shows the SPR band at 428 nm and particles size are 29 ±5 nm. For anti-diabetic activity we used in-vitro Alpha-amylase inhibition assay model. Results shows that bio-conjugated AgNP significantly inhibit α- amylase activity with IC50 value 0.35mM. Biocompatibility of AgNP was studies using CAM assay.

Keywords: Green Synthesis, Silver nanoparticles, Anti-diabetic activity.

D-230

Evaluation of Hydroalcoholic extract of *Saussurea lappa* root on Vitamin D_2 and Cholesterol Induced Atherosclerosis in Wistar Rats

Vishal .Chilkuri, Vengal Rao P and T.K. Praveen
Department of Pharmacology, JSS College of Pharmacy, Ooty - 643001, Tamil Nadu, India
(A constituent college of Jagadguru Sri Shivarathreeshwara University, Mysure, India)
vishalchilkuri123@gmail.com

Abstract:

In the present study, the effect of Hydroalcoholic extract of *Saussurea lappa* (HASL) on Vit D_2 and cholesterol induced atherosclerosis was reported. Adult male wistar rats were rendered atherosclerotic by oral administration of Olive oil at a dose of 8mg/rat of Vit D_2 and 40mg of Cholesterol (1.5ml/kg/day) for 5 consecutive days, while hydroalcoholic extract of *Saussurea lappa* (HASL) (200mg/kg and 400mg/kg) was administered orally for 30 days. Treatment with HASL resulted in a significant ($p<0.01$) decline in plasma lipid profiles. Further, extract increased HMG CoA reductase activity indicating decreased absorption of cholesterol. The levels of C - Reactive protein also significantly decreased along with concentration of malondialdehyde in these groups indicating decreased lipid peroxidation. The findings were further supported with histopathological data.

Keywords: Atherosclerosis, *Saussurea lappa,* HMG CoA reductase activity, C - Reactive protein.

D-231

Benefecial Effect of Retinoids in Hyperhomocysteinemia Induced Vascular Endothelium Dysfunuction

Divya Rana, Raveena Devi and Saurabh Sharma
Cardiovascular Division, Department of Pharmacology, ISF Collage of Pharmacy, Moga - 142001, Punjab, India
divyarosu@gmail.com

Abstract:

Hyperhomocysteinemia (HHcy) has been identified as a potential risk factor for vascular endothelium dysfunction that leads to cardiovascular disorders. Imbalance of L-arginine/endothelial nitric oxide synthatase (eNOS) activity is the hallmark of vascular endothelium dysfunction. Retinoic acid is a metabolite of vitamin A (retinol) that that are mainly involved in regulation of cell development, cell differentiation, proliferation, embryogenesis, hematopoiesis, reproduction, vision, maintenance of immune function, spermatogenesis and apoptosis. Retinoic acid has been reported to activate PI3K/Akt pathway and upregulate NO synthesis and has a beneficial effect in endothelial cell. Thus, the present study was designed to investigate the effect of Retinoic acid in HHcy induced vascular dysfunction. HHcy was produced by administering L-methionine (1.7 g/kg/,p.o). After four weeks of L-methionine administration, vascular endothelium dysfunction was assessed in terms of attenuation of acetylcholine-induced endothelium dependent relaxation (Isolated aortic ring preparation), a decrease in serum nitrite level, mRNA expression of eNOS (rtPCR). Administration of retinoic acid (2.5 and 5 mg/kg/d, 21st to 28th day) significantly improved acetylcholine-induced endothelium-dependent relaxation, serum nitrate/nitrite level, mRNA expression of eNOS. This ameliorative effect of retinoic acid was blocked by BEZ235 (mTOR and PI3K inhibitor), L-NAME (eNOS inhibitor). Thus it may be concluded that retinoic acid attenuates L-methionine induced hyperhomocysteinemia in wistar rats possibly by activation of PI3K/Akt, mTOR and eNOS pathway.

Keywords: Retinoic acid, Endothelium Dysfunction, Hyperhomocysteinemia, L-Methionine, eNOS.

D-232

Invitro Anti-Cancer Activity of *Abutilon Crispm* Linn. Against DAL and EAC Cell Lines

R. Kothai and B. Arul
Department of Pharmacology, Vinayaka Mission's College of Pharmacy,
Salem - 636008, Tamilnadu, India
kothaiarul@yahoo.co.in

Abstract:

Abutilon Crispum Linn.is a species of flowering plant of malvaceae family traditionally used for a variety of treatments like Asthma, Jaundice, Ulcer,Cough and Piles. It has been reported for its hepatoprotective, antidiabetic and hypoglycemic activities. So the present study is therefore an attempt to assess the efficacy of this indigenous herb for its *in-vitro* anticancer activity against DAL and EAC cell lines by Tryphan Blue exclusion method. The cytotoxic effect of ethanolic and aqueous extracts of whole plant of *Abutilon Crispum* linn was tested against EAC and DAL tumour cells lines at 10, 20, 50, 100 &200µg/ml. Both the ethanolic and aqueous extracts of whole plant of *Abutilon Crispum* showed significant *in-vitro* cytotoxic activity against EAC and DAL cell lines at200 µg/ml. From the results, it was found that the ethanolic and aqueous extracts of whole plant of *Abutilon Crispum* possess good *in-vitro* cytotoxic activity against EAC and DAL cell lines. It may be due to the presence of phenolic compounds. Further *in-vivo* studies are required to evaluate its effect in tumour induced animals and its possible mechanism of action.

Keywords: *Abutilon Crispum*; Ethanolic and aqueous extract; anticancer.

D-233

Neuroprotective Activity of *Aegle Marmelos (Fruit)* Against Sodium Nitrite Induced Neurotoxicity in Albino Wistar Rats

G. Kinnera Ratna Sri, Praveen T.K. and Vengal Rao P
Department of Pharmacology, JSS College of Pharmacy, Ootacamund - 643001, Tamil Nadu, India
dattu211995@gmail.com

Abstract:

Neurodegenerative diseases result in the loss of functional neurons and synapses. Current treatments for most of these diseases are less than adequate and our best hope is to prevent these devastating diseases. Neuroprotective approaches work best prior to the initiation of damage, suggesting that some safe and effective prophylaxis would be highly desirable. Oxidative stress is implicated as one of the primary factor that contributes to the neurodegenerative diseases, brain damage, stroke, hypoxia etc. *Aegle marmelos* is one of the herbal drug traditionally used as Nervinetonic, Antidiuretic, Antioxidant, Antihyperlipidemic etc. The aim and objective of the study is to investigate the Neuroprotective effect of hydro alcoholic seed extract of *Aegle marmelos* on hypoxic neurotoxicity induced in wistar rats. The animals were divided in to four groups of 6 animals each. Hypoxic neuronal damage was induced by the administration of sodium nitrite 30mg/kg p.o for 14 days. The hydro alcoholic extract was administered at doses 200mg/kg, 400mg/kg b.w, p.o for 14 days. Alteration in various biochemical and antioxidant levels was estimated. The drug treated groups showed normal neurological behavior comparable with that of normal control group. Asthemodelis clinically relevant it will further enhance the mechanistic understanding of neuronal damage and help in developing newer and better therapeutic strategies to manage oxidative stress.

Keywords: Oxidative stress, *Aegle marmelos*, Hypoxia, Neurotoxicity.

D-234

Licofelone Attenuates MPTP-induced Neuronal Toxicity: Behavioral, Biochemical and Cellular Evidence

Jasleen Kaur, Amit Gupta, Anil Kumar and S. K. Kulkarni
Pharmacology Research Laboratory, University Institute of Pharmaceutical
Sciences, Panjab University, Chandigarh – 160014, India
jasleen.820@gmail.com

Abstract:

Neuroinflammation and oxidative stress play critical role in the pathophysiology of neurodegenerative diseases including Parkinson's disease (PD). Recent reports indicate the beneficial effect of anti-inflammatory drugs in attenuating the progression of PD. Therefore, the present study is aimed to evaluate the possible role of licofelone, a dual COX/LOX-inhibitor against MPTP-induced neurotoxicity in mice. Administration of MPTP (40 mg/kg in divided doses of four injections of 10 mg/kg, i.p. each at 1 h interval) significantly impaired locomotor activity and induced catatonia, oxidative damage (elevated levels of lipid peroxidation, superoxide anion and nitrite, and decreased levels of non-protein thiols) as compared with vehicle-treated animals. Biochemical studies revealed significant alterations in mitochondrial enzyme complex activities (decreased complex-I activity and mitochondrial viability) and increased levels of caspase-3 and NFkB/p65 as compared to vehicle treated group. Licofelone (2.5, 5 or 10 mg/kg/day, p.o.) treatment for 7 days significantly improved locomotor activity, attenuated the severity of catatonia, oxidative damage and restored mitochondrial enzyme complex activity as compared to MPTP-treated group. Licofelone treatment also attenuated the expression of apoptotic factor (caspase-3) and transcription factor (NF-jB/p65) as compared to MPTP-treated group. The findings of the present study suggest that licofelone (dual inhibitor of COX and LOX) represents a new class of anti-inflammatory agent which may provide a novel therapeutic alternative for the treatment and management of PD.

D-235

Ecopharmacovigilance A New Term Introduced In

the Field of Biomedical Research: A Review

Sharma Rishabh, Kosey Sourabh, Rathore M.S and Sharma Amit
Department of Pharmacy Practice, I.S.F College of Pharmacy, Moga, Punjab, India
rishabhsharma19144@gmail.com

Abstract:

Ecopharmacovigilance can be defined as science and activities concerning detection, assessment, understanding and prevention of adverse effects or other problems associated with pharmaceuticals in the environment which effect human or any other living species. The major challenge in ecopharmacovigilance is of signal detection in environment and establishment of causes and effect. Continuous consuption of drugs is increasing day by day. Consumed drugs passess out of the system either as metabolite or unchanged through excretion. Drugs are usually water soluble and therefore find their way into the sewage. Active pharmaceutical ingredient contributes toward the entry of drug in the environment. Not only the drug but also the excipients used in the formulation may pose a threat to the environment. Sewage contaminated with traces of drugs or their metabolites may also find their path to enter the body food chain through mouth. Exposure of human beings and animals to drugs through environment affects them directly and indirectly. There is alarming increase in human body resistance towards various drugs. There is no proper protocol for monitoring adverse effect on environment after the product is launched. In this review article, focus is on what measures can be taken to assess environmental risk across product life cycle, particularly after the launch of new drug, to ensure that our risk assessment and and understanding of pharmaceuticals in the environment remain scientific and ecologically relevant.

D-236

In silico, Guided Selection and Evaluation of Phytomolecule for the Management L-Methionine Induced Cognitive Impairment

Lovepreet Kaur Benipal, Gurvinder Kaur and Rajesh Kumar Goel
Department of Pharmaceutical Sciences and Drug Research
Punjabi University, Patiala, Punjab, India
lovebenipal09@gmail.com

Abstract:

Dementia is described as a clinical syndrome which encompasses difficulties in behaviour, memory and language that leads to cognitive impairment in daily activities. Vascular dementia is the second most leading cause of dementia and preventing vascular injury remains a promising approach to reduce the global burden of dementia. Additional efforts are needed to define the optimal strategy for prevention and develop efficient symptomatic treatments. Based on above literature *in silico* approach was envisaged to evaluate pharmacological properties of betaine in management of cognitive impairment. Betaine is a nontoxic amino acid abundantly found in plants and animals has been used for memory improvement in other indications like Alzheimer's disease. In the present study swiss albino mouse approved by IAEC (Institutional animals ethic committee) were employed. Cognitive impairment was induced by L-methionine (2.4g/K.g; p.o; 4 weeks) treatment to animals. Experimental study showed that betaine (0.081, 0.163 & .326mmol/Kg; s.c) ameliorate cognitive deficit evaluated by animal behavioural models. Additionally, betaine treatment showed good motor coordination evaluated by Rota rod apparatus. Biochemical parameters unveil antioxidative properties, acetylcholinesterase activity, enhanced serum nitrite levels as well as inhibited IDO activity. Betaine was found to increased brain serotonin level which is one the of key neurotransmitter responsible for learning and cognition. Results of the present study along with the future investigations will provide an insight to develop a proficient pharmacological profile of betaine for management of cognitive deficits in vascular dementia.

Keywords: vascular dementia, Indolamine 2,3 dioxygenase (IDO), L-methionine.

D-237

Phytochemical Screening and Evaluation of Invitro Anti-Inflammatory Activity of Leave of *Amaranthus tricolor* Linn

Violina Kalita, Padma Nath Pegu, Purbajit Chetia and Imdadul Islam Choudhury
Girijananda Institute of Pharmaceutical Science, Hatkhowapara, Azara, Guwahati – 781017, Assam, India
violinakalita35@gmail.com

Abstract:

Amaranthus tricolor Linn. belonging to the family *Amaranthaceae* is well known for curing a variety of ailments such as cough, throat infections, toothache, eczema, piles, diarrhea, gonorrhea, leucorrhoea and impotence. The present study deals with the investigation of the plant for anti-inflammatory activity by inhibition of albumin denaturation method along with preliminary phytochemical screening.The pharmacognostic evaluation including examinations of morphological and microscopic characters, ash values, powder analysis, extractive values, moisture content and fluorescence analysis. Total ash, acid insoluble ash, water soluble ash, ethanol soluble extractive and water soluble extractive were 12.8%, 6.89%, 5.0%, 7.6% and 20.0% w/w respectively. Phytochemical screening showed the presence of alkaloids, flavonoids, glycosides, tannins, proteins and amino acids. The plant extract was effective in inhibiting heat induced albumin denaturation. Maximum inhibition 69.33 % was observed at 400 µg/ml. Diclofenac, a standard anti-inflammatory drug showed the maximum inhibition 68.77 % at the concentration 400µg/ml compared with control.

Keywords: Eczema, leucorrhoea, ash value, fluorescence analysis.

D-238

Combined Effect of Nateglinide and Pioglitazone on Diabetic Nephropathy

Papiya Bigoniya, Reetesh Malvi, Satyam Sagar Chourasia and Upendra Panchwehar
DSKM College of Pharmacy, RKDF University, Gandhi Nagar, Bhopal - 462033, Madhya Pradesh, India
p_bigoniya2@hotmail.com

Abstract:

The objective of present work is to explore combined effect of nateglinide and pioglitazone on diabetic nephropathy. Alloxan induced diabetic rat ware maintained with high blood glucose level for one month and screened for induction of diabetic nephropathy. Nateglinide and pioglitazone were administered to the diabetic nephropathic animals alone and in combination as low and high dose for 28 days. Body weight, relative kidney weight, serum and urine biochemical parameters were analyzed along with kidney tissue antioxidant level and histology after treatment to observe the effect of individual drugs and combination. Loss in body weight was efficiently maintained by pioglitazone monotherapy and high dose combination of nateglinide and pioglitazone. Nateglinide treatment significantly ($P < 0.05$-0.001) reduced serum glucose, blood urea nitrogen (BUN), creatinine and insulin along with decrease in urine albumin and increase in creatine. Pioglitazone profile was also same as nateglinide except decrease in cholesterol and total urine volume. Both nateglinide and pioglitazone has significantly ($P < 0.05$-0.01) reduced glomerular filtration rate (GFR). Nateglinide has nonsignificant effect on kidney antioxidant level but pioglitazone has increased ($P < 0.05$) superoxide dismutase (SOD) level only. Both low and high dose combinations significantly ($P < 0.05$-0.001) reduced the elevated level of serum glucose, cholesterol, triglyceride (TG), low density lipoprotein (LDL), BUN, creatinine, insulin and glycated haemoglobin (HbA1c). Both the combinations were equally effective in decreasing albumin and increasing creatinine urinary excretion with increase GFR. High dose combination significantly increased the kidney tissue antioxidant enzyme level, i.e., catalase, SOD and glutathione. Monotherapy with nateglinide or pioglitazone reduce hyperglycemia and kidney function ability. Both high and low dose combination of nateglinide and pioglitazone was found effective against disturbed serum and urine biochemical parameters. High dose combination was more effective and beneficial in ameliorating kidney pathological damage and oxidative stress in the treatment of diabetic nephropathy.

Keywords: Antioxidant level, Histopathology, Nephropathy, Nateglinide, Pioglitazone.

D-239

Evaluation of Protective Effect of Rosiglitazone,

PPARγ agonist, in HFD Induced Insulin Resistance and Alzheimer's Type Of Dementia

Sarathlal K C, Sruthi Ramagiri, Deepak Chitkara and Rajeev Taliyan
BITS Pilani, Pilani Campus, Rajasthan, India
sarathlalkc@gmail.com

Abstract:

Introduction Insulin resistance, referred to as reduced sensitivity of target tissues to the favourable effects of insulin, is related to multiple chronic conditions known to impact cognition and increase dementia risk. The PPARγ agonist including rosiglitazone was reported to increase peripheral insulin sensitivity. However, the role of rosiglitazone in preventing insulin resistance induced dementia remains unknown. Therefore, this study was undertaken to investigate the role of rosiglitazone in high fat diet (HFD) induced dementia in mice. **Materials and methods** Mice were subjected to normal diet or high fat diet for a minimum of 8 weeks. A battery of motor and cognitive parameters including narrow beam walk task, novel object recognition, passive avoidance task, morris water maze test were performed. Further, biochemical estimations were performed with oxidative stress markers like malonyldialdehyde (MDA), glutathione (GSH), superoxide-dismutase (SOD) and pro-inflammatory cytokines like tumour necrosis factor-α (TNF-α) and interleukin-6 (IL-6). **Result** HFD fed mice showed significant characteristic features of insulin resistance along with severe deficits in motor and cognitive abnormalities. However, mice treated with rosiglitazone showed improvement in insulin resistance dose dependently. Moreover, rosiglitazone treatment markedly ameliorated the cognitive and motor performance. Further, treatment with rosiglitazone attenuated the oxidative and inflammatory stress induced by insulin resistance. **Conclusion** Based upon these results, it can be suggested that PPARγ agonist: rosiglitazone can exert beneficial effects against insulin resistance induced dementia.

D-240

Correlation among Epilepsy and Diabetes Mellitus: Current Status of Knowledge

Baljinder Singh and Sumeet Gupta
MM College of Pharmacy, MM University, Mullana-Ambala - 133207, Haryana, India
pharm.baljinder@gmail.com

Abstract:

Epilepsy is an aggressive neurological disorder which may evolves due to various factors like autoimmune metabolic disturbances, structural abnormalities and genetic factors. Some of the studies suggested that there is a positive association between type 1 diabetes mellitus (T1DM) and epilepsy. The prevalence rate of epilepsy in type 1 diabetic patient are more in pediatric population and adults. The possible mechanism underlying this disorder may be hypoglycemia and non-ketotic hyperglycemia. In former physiological state, reduction of glucose levels in brain may influences the release of excitatory amino acids which induce higher excitability in brain. In non-ketotic hyperglycemia, the high blood glucose levels can cause confusion, hallucinations and seizures. The seizures occurring in hyperglycemia are refractory to the usual antiepileptic drugs and respond best to insulin and rehydration. As per the non pharmacological treatment, an eye on ketogenic diet with low calories can prevent the reoccurrence of seizures. Ketogenic diet is thought to possess antiseizure benefit due to increased resilience of neurons, inhibition of transporters and increased synthesis of inhibitory neurotransmitter GABA. Apart from this, the studies recommended nutritional diet and exercise for the control of diabetes. In current scenario, more and more research should be encouraged on this hot topic to understand how the diabetic conditions can be controlled to achieve a good neuronal health. Some of the developing molecules can also be explored for the treatment of epilepsy in diabetics.

Keywords: GAD-Abs (Anti-glutamic acid decarboxylase antibodies), T1DM (type 1 diabetes mellitus), epilepsy, neurological.

D-241

Evaluation of Anti-Atherogenic Potential of Metformin in Animal Model of Hyperlipidaemia

Satyajit Mohanty, Ashok Kumar Pattnaik, Sangita

Kumari and Sanchari Chakraborti
Department of Pharmaceutical Sciences and Technology, Birla Institute of Technology,
Mesra, Ranchi - 835215, Jharkhand, India
satyajitmohantybitmesra@gmail.com

Abstract:

The ability of anti-atherogenic potential of metformin in animal models affected by hyperlipidaemia have been reported by many researchers. In this research work we have tried to study the influence of hyperlipidaemia on body weight, diet intake, plasma lipid profile and macrophage foam cell formation in high cholesterol and fat fed animal. The anti-atherogenic potential of metformin was evaluated by using Hamster model. It was revealed that the restoration of normal lipid level takes place only because of the anti-hyperlipidaemic effect. The effect of metformin was demonstrated by in *in-vivo* peritoneal animal macrophage foam cells study. Metformin prevented the formation of lipid induced in-vivo macrophage foam cells by the down regulation of SRA-1 and LOX-1 genes and by the activation of ABCA1 and ABCG1 genes in the macrophages. Finally, it was concluded that the molecular mechanism underlying anti-atherogenic effect of metformin at macrophage level prevented lipid induced in-vivo macrophage foam cell formation .This effect of metformin on cholesterol uptake and efflux may explain its anti-atherosclerotic effect in hamster model of accelerated atherosclerosis.

Keywords: Anti-atherogenic, Hyperlipidaemia, Steroid Receptor RNA Activator-1(SRA-1),Lectin-like oxidised low-density lipoprotein receptor-1(LOX-1),ATP-binding cassette transporter A1(ABCA1), ATP-binding cassette transporter G1(ABCG1).

D-242

Evaluation of Polyherbal Formulation on Experimental Diabetic Neuropathy in Rodents

Yuvraj Singh Surana, Purnima Ashok and Rajendran R
Department of Pharmacology, KLE University College of Pharmacy, Bengaluru, Karnataka, India
yuvrajsurana@gmail.com

Abstract:

Objective: To evaluate the neuroprotective effect of Polyherbal formulation against hyperalgesia in Streptozotocin-nicotinamide induced diabetes in rats. **Material and Methods:** Wistar albino rats (female) diabetic with Streptozotocin (STZ) randomly divided into 5 groups, namely normal control, positive control (Streptozotocin, 65 mg/kg), aqueous extract of Polyherbal formulation (PHF) (200 and 400 mg/kg, p.o.) and standard group (metformin, 5 mg/kg). Fasting blood sugar (FBS), body weight, serum insulin level and latency time in hot-plate and tail flick were measured at the end of study. *In vivo* antioxidant activity of sciatic nerve was carried out and histopathology study was performed to support above study. **Results:** The PHF and standard treated groups showed significant decrease ($p<0.001$) in FBS level, while significant increase in tail flick latency time ($p<0.001$) and significant decrease in hot-plate response time ($p<0.001$) was observed when compared to positive control group. *In vivo* antioxidant activity of sciatic nerve showed that PHF and metformin treated diabetic rats showed a significant decrease ($p<0.001$) in the level of malondialdehyde (MDA) and significant increase ($p<0.001$) in superoxide dismutase (SOD) and catalase (CAT) levels. **Conclusion:** The aqueous extract of PHF prevents the hyperalgesia in experimental diabetic neuropathy in rats and also possess antioxidant activity.

Keywords: Hyperalgesia, neuropathy, Polyherbal formulation, antioxidant, Streptozotocin.

D-243

Effects of Rosmarinic Acid on Chronic Unpredictable Stress Induced Behavioural and Biochemical Changes in Rats

Himanshu Verma and Madhuri Acharya
Department of Pharmaceutical Engineering and Technology, IIT Banaras Hindu University, Varanasi - 221005, Uttar Pradesh, India
himanshuv.phe16@itbhu.ac.in

Abstract:

The aim of the present study was to explore the effects of rosmarinic acid on chronic

unpredictable stress (CUS) induced behavioural and biochemical changes in rats. In CUS model, rats were exposed to various stressors (i.e. 24 hr. light exposure, cage tilting, isolation, dark exposure, food and water restriction) for 20 days and orally rosmarinic acid treatments (25 mg/kg and 50 mg/kg) were given. On day 21, after performing behavioural tests, animals were sacrificed by cervical dislocation. Heart and brain tissues were kept for the histopathology, and biochemical test such as tissue glutathione level were performed. In behavioural test, CUS rats treated with rosmarinic acid significantly increases sucrose preference; decreases the closed arms entries, and increased square crossing and rearing activities in open field test. Moreover, treated CUS rats with rosmarinic acid significantly normalized the decreased glutathione levels as compared to CUS control rats. Furthermore, treated CUS rats with rosmarinic acid in histopathological studies of brain and heart demonstrated less disruption of morphological alteration in the tissue architecture as compared to CUS control rats. In conclusion, our finding suggests that rosmarinic acid is potential for treatment of behavioural and biochemical changes in CUS rat model.

Keywords: Rosmarinic acid, Chronic unpredictable stress, Behavioural and biochemical changes, Glutathione, Histopathology.

D-244

In-Silico Screening of Phytochemicals targeted for Death Receptors by Using Hex Molecular Docking Software

D. Ashwitha Pai, Seetharaman R, Vishnu Varthan V.J and Thirumal M
SRM College of pharmacy, SRM University, Kattankulathu, Chennai, Tamil Nadu, India
paiashwitha@yahoo.com

Abstract:

Aim & Objective: Lung cancer is one of the leading cause of cancer death's in the world. Current therapies failed to accomplish the treatment of cancer, even though targeting methods, fails due to resistance of chemotherapy drugs. So an alternative to chemotherapy drugs has to be emerged to solve the resistance problem and to treat cancer. Even though targeting methods are available but fails due to resistance of chemotherapy drugs. Based upon this fact natural products possessing anticancer properties are choosen for the present study. The selected molecules are phytochemicals, which possess anti-cancer characteristic such as prevention of carcinogenic metabolic activation, antiproliferation, cell cycle arrest, Induction of Apoptosis, antioxidant activity, antiangiogenic activity etc. Before proceeding to the *In Vitro* and *In* Vivo studies, it is better to find *In-Silico* Compatibility by using Docking Software's. Docking of a molecule with receptor helps to facilitate and speed up the drug designing process. **Methodology:** The protocol for docking studies are carried out by using Hex Software. In this current study, the molecules are docked against Death Receptors (DR 1,2,4 & 5) to determine the pathway associated for apoptosis. **Conclusion:** The results are expressed in energy values, molecule possess high energy values states, more compatible to the receptors.

Keywords: Docking, Phytochemicals, Death Receptors.

D-245

Metformin Protects Forced Swimming Stress Induced Neurodegeneration

Sambit Kumar Sahoo, Manas Kumar Das and Pratap Kumar Sahu
School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar-751003, Odisha, India
sambitsahoo90@gmail.com

Abstract:

Exposure to chronic stress is an important factor of neurodegeneration. Forced swimming test (FST) is a common model for chronic stress which results in decreased cognitive ability, antioxidants & reduces defence mechanism along with alteration in behaviour. Metformin is found to be neuroprotective

by inhibiting apoptosis in neuronal cortical cells. The present study is undertaken to evaluate the effect of metformin on behavioural, histological & antioxidant status of rats exposed to force swimming for 30 min daily for 30 days. Adult Wistar albino rat (150 – 200g) of only male species where used. The time of fall in rota rod, locomotor activity in actophotometer, number of correct entries in radial maze, superoxide dismutase (SOD) level & the malondialdehyde (MAD) content along with prominent tissue degradation in brain & pancreas were measured. There was significant alteration in behavioural, histological & antioxidant status revealing the neuroprotective effect of metformin.

Keywords: Stress, Forced swimming and Antioxidant.

D-246

In *Vitro* Leptin Gene Expression Studies In Adipose Tissue

R. Kanimozhi, B. Anbarasi and P. Brindha
Department of Pharmaceutical Chemistry, JKKMMRF College of Pharmacy, Komarapalayam, Namakkal, Tamil Nadu, India
kanimozhirajangam03@gmail.com

Abstract:

The adipocyte – derived hormone leptin is a critical regulator of many physiological functions ranging from safety to immunity. Obviously very little is known about the transcriptional pathways that regulate adipocyte-specific expression of leptin . Here we report the m-RNA expression levels of leptin carry out by using semi-quantitative reverse transcriptase-polymerase chain reaction (RT-PCR). Briefly the 3T3-L1 cells were cultured in 60mm petridish and maintained in Dmem medium for 48 hours. To the dish was added the required concentration of two test sample,(1000 and 500 µg/ml)(RR 2783, RR 2784) and incubated for 24 hours. Total cellular RNA was isolated from the untreated (control) and treated cells using tri reagent. DNA was synthesized from total isolated RNA by reverse transcriptase kit. 50ml of the reaction mixture was subjected to PCR for amplification of leptin cDNAs using specifically designed primers, procured from eurofins India, as an internal control , the house keeping gene GAPDH was co-amplified with each reaction

Keywords: Leptin, mRNA, Gene expression , Cytotoxicity , Adipose tissue.

D-247

Access the Risk Factor of Diabetic Neuropathy

Ankita Wal, Pranay Wal and Awani K Rai
Department of Pharmacy, Pranveer Singh Institute Of Technology, Kanpur, Uttar Pradesh, India
shuklaankita02@gmail.com

Abstract:

Objective: The main objective of this research survey was to evaluate the condition of diabetic nephropathy in individuals who have the history of Diabetes mellitus by the help of proper patient counselling. **Material and Methods:** In this particular research survey questionnaire is used as the important tool for the collection of data from the patients which include patient general information's and disease related questions. Pilot-tests were performed to test, validate, and optimize the final questionnaire. Out of 390 participants total 130 subjects were chosen from family, neighbors, relatives, clinics to perform the research survey and rest are excluded due to non adherence of study. Respondents were asked to fill out the questionnaire with pencil and paper in a natural and relaxed pace. The completion time was noted before the respondents were probed with in-depth questions. **Result:** The major finding in the study was found that there was the lack of awareness of long term complications of diabetes mellitus and the blood glucose level in healthy individuals. It was also found that unhealthy life style and stress was also sometimes plays important role for the development of the disease. **Conclusion:** From our study we found that almost every individual knows about Diabetes Mellitus but still there is a lack of awareness among people about its future

complications.

Keywords: Diabetes Mellitus, Diabetic neuropathy, Pilot test.

D-248

Anti oxidant, Anti Inflammatory and Wound Healing Properties of *Hemigraphis colorata*

Ramu Singh
Columbia Institute of Pharmacy, Raipur, Chattisgarh, India
rmusigh@gmail.com

Abstract:

The use of traditional medicine and medicinal plants in most developing countries for the maintenance of good health has been widely observed. *H. colorata* is a traditional medicinal plant in Kerala (India), used on wounds, cuts and ulcers.In the light of key role played by COX-2 in inflammation, COX-2 Inhibitors were developed as novel NSAIDs without gastric side effects that are associated with the conventional NSAIDs. 5-LOX is involved in the biosynthesis of leukotriens, pro-inflammatory mediators participating in various forms of acute and sub acute inflammation. In our attempt to isolate a natural product with COX-LOX dual inhibition, we identified *H. colorat*uras a potential source. The studies with different extracts of *H. colorata* have showed that ethyl acetate extract exhibits potent inhibition of 5-LOX and COX-2 and all three except water extract showed COX-1 inhibition. The obtained IC_{50} value of ethyl acetate extract against 5-LOX enzyme is 90 µg/ml and for COX-2, 48 µg/ml. Further the extract was checked weather it has any capacity to down regulate the expression of pro-inflammatory genes. LPS induced expression of pro inflammatory genes ((TNF-α, COX-2 and IL-1β) were suppressed in HaCaT cell line in dose dependent manner. When the extracts were checked for the proliferating capacity of HaCaT cells the extract has showed very good proliferation of HaCaT cells and also the artificial wound created was healed so fast. The present study reveals that the leaves of *H. colorata* contain potent anti-inflammatory compounds as evidenced by the inhibition of lipoxygenases and cyclooxygenase and by the down regulation of the pro-inflammatory proteins as well. The plant also has a anti oxidant and wound healing capacity as was proven by the experiment.

Keywords: COX and LOX enzymes, inflammatory activity, pro-inflammatory genes.

D249

Evaluation of Neuroprotective and In-Vitro Anti-oxidant activity of Methanolic Extract of *Sapindus laurifolia* Kernel in Wistar Rats

B. Nagaraju and K. Prasad
Department of Pharmacology, Shri Vishnu College of Pharmacy, Vishnupur, Bhimavaram -534202, Andhra Pradesh, India
bnrajupharma@gmail.com

Abstract:

Sapindus laurifolia kernel possesses significant antioxidant potential. This study was conducted to evaluate the neuroprotective effect of Methanolic extract of *Sapindus laurifolia kernel* against Scopolamine induced Alzheimer's disease. In Morris water maze model, the extract significantly restored the defected memory of Scopolamine injected rats ($P<0.01$). The reduced levels of brain antioxidant enzymes such as glutathione peroxidase, glutathione reductase, catalase, and superoxide dismutase were also restored significantly to similar levels as seen in normal control ($P<0.01$). The levels of lipid peroxidase were decreased significantly in treatment group mice when compared to Alzheimer group ($P<0.01$). So, this study showed that Methanolic extract of the *Sapindus laurifolia kernel* possesses neuroprotective activity in rats.

Keywords: Alzheimer,enzymes, Scopolamine,neuroprotective.

D-250

Amyloid Beta and Copper Toxicity leading to Alzheimer's

Varsha Pandey, Sagar Soni, Ashish Pandey, Shekhar Verma and Arvind Kumar Jha
SSTC-Shri Shankaracharya Group of Institutes - Faculty of Pharmaceutical Sciences, Junwani, Bhilai - 490020, Chattisgarh, India
varshap397@gmail.com

Abstract:

Homocysteine elevated level causes Coronary Artery Disease, Alzheimer's Disease, and Renal Dysfunction. Homocysteine is an intermediate formed during methionine metabolism. Oxidative stress perform the major role in the progression of neurodegenration such as Alzheimer's Disease. The Copper And Amyloid Beta toxicity leads to the production of hydrogen peroxide due to the hyperhomocystinuria. The elevated levels of homocysteine leads to Amyloid Beta accumulation and sensitizes neurons to Aβ toxicity and impairs DNA repair in hippocampal neurons. Homocysteine dramatically potentiates toxicity induced by Cu but not Fe or Zn in primary cortical neuron cultures. The increased metal toxicity was mediated through the selective Cu reduction potential of Homocysteine and resulted in increased free radical generation which is promoted by Amyloid Beta protein accumulation due to Copper neurotoxicity. In the study,Hyperhomocysteine model in adult rats by injecting Homocysteine through vena caudalis were investigated the effects of betaine a trimethylglycine, is an endogenous catabolite of choline in mammals the induced betaine supplementation can effectively promote the metabolism of Homocysteine and reduce the plasma Hcy levels which prevents Amyloid Beta protein accumulation hence the Amyloid Beta toxicity and Copper toxicity which produced free radicals with Amyloid Beta leading to Neurodegeneration. Hence Betain attenuates Alzheimer's disease.

Keywords: Amyloid Beta, Copper, Alzheimer , Betaine.

D-251

Diabetes Mellitus-Treatment by Chandraprabha Vati

Poonam Devi and Manjusha Choudhary
Institute of Pharmaceutical sciences, Kurukshetra University, Kurukshetra - 136119, Haryana, India
poonamjaist.pj@gmail.com

Abstract:

Diabetes Mellitus is categorized as a metabolic disorder, characterized by hyperglycemia which results from defects in insulin secretion, insulin action or both. Chronic hyperglycemia in diabetes leads to a variety of complications, including; neurological, Cardiovascular, renal and visual complications. The negative effects of diabetes on the central nervous system have been reported as a series of neurochemical, neurophysiological and structural abnormalities. Cognitive dysfunction has also been recognized in diabetic patients. These impairments have been manifested as deficits in learning and memory, reduced mental flexibility, slowing of mental speed and psychomotor efficiency. Cognitive impairments have been reported in Streptozotocin induced diabetes. Despite appreciable progress made in the management of diabetes mellitus using conventional antidiabetic management strategies, the search for products of natural origin for control of diabetes mellitus continues. Since, Plant based medicine considered to be safe, an alternative therapy for the better therapeutic effect in diabetes. Chandraprabha Vati (An Ayurvedic formulation) has got very remarkable effect in mitigation of Prameha, which correlates in many ways with obesity, metabolic syndrome, and diabetes mellitus. Numerous lines of evidence demonstrated the pharmacological properties of these ingredients as antioxidant, anti-hyperglycemic, and neuroprotective and memory enhancers.

Keywords: Hyperglycemia, streptozotocin, cognitive dysfunction.

D-253

Study of Effect of Ethanolic Extraction of PLANT *Hybanthus enneaspermus* on Various Diabatic Rat Models

Debasish Pradhan, Deepika Rani Panigrahi and D.K. Mohapatra
Department of Pharmacology, University Department of Pharmaceutical Sciences,Vanivihar, Bhubaneswr, Odisha, India
dillipphd@gmail.com

Abstract:

Hybanthus enneaspermus used to balance of Tri Dosa: Kapha, Pitta, and Vata ,on referring the materia medica, it was found that the aqueous extract of plant of *Hybanthus enneaspermus* can be used in the treatment of diabetes In this present study was performed systemically with the following schedule ,Collection of plant, plant authentication, pharmacognostical study, phytochemical investigation,pharamacological evaluation like effect of aquous extract of plant of *Hybanthus enneaspermus* on normoglycemic rats., on glucose loaded rats ,on adrenaline induced hyperglycaemic rats ,on high fat diet induced rats. In normoglycemic rats, the drug reduces blood glucose level significantly after 6 hr of administration. In normoglycemic glucose loaded rats also it reduces blood glucose level significantly when administered 3hr before administration glucose. In adrenaline induced hyperglycaemic rats, the extract in the dose of 200 mg/kg also reduces blood glucose level significantly in comparison to solvent (control) groups after 4 hr of administration. The results of our study showed that rats fed with high fat diet elicited significant increase in body weights and fat pad mass. The high fat diet fed rats show impaired glucose tolerance, which indicates insulin resistance. The standard drug glimepiride in the dose of 1mg/kg, p.o. and the extract, in the dose of 200 mg/kg reduces the blood glucose level of glucose loaded rats significantly.

Keywords: normoglycemic , hyperglycaemic, pharmacognostical, glimepiride.

D-254

Protective Effects of α-lipoic Acid Alone and In Combination with Ferulic Acid in Diabetic Induced Neuropathic Pain in Rats

Aman Upaganlawar, Sneha Gupta and Chandrashekhar Upasani

Department of Pharmacology, SNJB's SSDJ College of Pharmacy, Neminagar, Chandwad, Nashik, Maharashtra, India

amanrxy@gmail.com

Abstract:

The present study was designed to evaluate the effects of α-lipoic acid alone and in combination with Ferulic acid in diabetic induced neuropathic pain in laboratory animals. Male albino rats were selected for the study and they were grouped with six animals in each group. Diabetes induced neuropathic pain was produced in rats by administration of STZ (60mg/kg, i.p). Neuropathic pain was assessed by evaluating Behavioural Parameters (Mechanical Allodynia using Von Frey Hair, Mechanical Hyperalgesia using Pin Prick Test, Cold Allodynia using Acetone Solution, Randall Sellitto Analgesiometer) and Biochemical Parameters (Blood glucose, Nitric oxide, Antioxidant parameters (LPO, SOD, CAT, GSH) and membrane bound ATPases activities). α-lipoic acid (25mg/kg/p.o) and Ferulic acid (10mg/kg/p.o) was administered for two weeks after the development of neuropathic pain in rats. Dose for combination of α-lipoic acid (50mg/kg/p.o) and Ferulic acid (30mg/kg/p.o) was decided on the basis of combination index. Standard group received Pregabalin (25mg/kg/i.p) for two weeks. Treatment with α-lipoic acid in combination with Ferulic acid significantly restores the altered parameters towards normal as compared to alone antioxidant. The above protective effects might be because of strong antioxidant capacity of both the antioxidants.

Keywords: Neuropathy, Diabetes, antioxidants, Ferulic acid, α- Lipoic acid.

D-255

A Prospective Observational Study And Survival Pattern Of Organo Phosphorous Poisoning Patients with Intensive Care Treatment in A Tertiary Care Hospital

K. Sankarsh Reddy, K. Samanth, B. Shashi Kumar and K. Arun Chand Roby

Sree Chaitanya Institute of Pharmaceutical Sciences, Karimnagar, Telangana, India

sankarshreddy1239@gmail.com

Abstract:

Organophosphate poisoning is poisoning due to organophosphates (OP's), used in insecticides, medications and nerve agents. It occurs

mostly during suicide attempts in the farming areas, developing world and less by accident. The study is to evaluate the drugs used, respiratory conditions, complications occurred during course of treatment and stay in intensive care unit with any means of ventilation. **Materials and methods:** This was a prospective observational study conducted for a period of 9 months in a tertiary care hospital by collecting information by using patient case sheets, based on the data a questionnaire is prepared. Nearly data of 234 patients were collected which include case history, demographic details and reason for consumption, past medical history, laboratory values, and drugs prescribed with their doses and frequency of poison consumption were collected and summarized. **Results:** A total of 234 patients who had consumed OPP with known and unknown agents were admitted in the emergency department. Out of which 180 males and 54 females, the most frequent affected age group was 21 to 32years all the information is tabulated and discussed. **Discussion:** Out of 234 patients who are admitted in the hospital with poison consumption are of age group 18-60 and both sexes with secondary level education and nutritional status of mostly poor. The reason for admission in the hospital is due to mental disorder (depression) and family disharmony and financial problems. The people consumed poison of less than 50ml is more. The people under abnormal ventilation are required for 180 and tracheotomy for 54 patients. Maximum all the signs and symptoms are observed and mostly bradycardia, hypotension and bronchospasm are commonly observed. All the patients are treated with antidotes like atropine and paralidoxime and sedatives like diazepam is given and all the normal procedures were followed and the maximum classes of antidotes are Anticholinergics. Normal medications like antibiotics and other are prescribed in hospital stay with all the laboratory parameters and changes in the urine was observed and summarized in the tables. **Conclusions**: Our study concluded that the patients consumed poison is mainly due to mental disturbances and financial problems. The stress and burden on the life will shows the effect after consumption, the maximum people suffers with respiratory problems due to poison consumption. If the government should take the measures to avoid consumption of poison and availability of poison to the public may overcome the complications and reduce the deaths due to poison consumption. The easy availability may lead the person to take decisions without knowledge. As we are the clinical pharmacists we should create awareness I n the areas about their lifestyles and causes after consumption may avoid poison consumption. So many researches want to do to show complications due to poisons.

Keywords: Organo- phosphorus, poisoning, harmony, ventilation, tracheotomy.

D-256

Role of Agmatine In Ethanol Withdrawal Induced Alteration Of Sexual Behavior In Rats

Sakhare D.R, Aglawe M.M, Kale M.B. and Taksande B.G.
Division of Neuroscience, Department of Pharmacology, Smt. Kishoritai Bhoyar College of Pharmacy, Kamptee, Nagpur, Maharashtra, India
sakharedivya933@gmail.com

Abstract:

The study was planned with an objective to assess the effect of agmatine and involvement of imidazoline receptor in ethanol exposure and withdrawal induced alteration of sexual behavior in rats. Animals were subjected to either ND (Normal

Diet) or Ethanol (8 % (Day 1-4), 10% (Day 5-8), and 12% (9-10) v/v) i.p. A group of animal subjected to Ethanol was tested for sexual behavior (mounting, intromission and ejaculation). Separate groups of animal were tested for alteration in sexual behavior after ethanol withdrawal. In another set of experiment effect of agmatine and involvement of imidazoline receptor was assessed on sexual behavior of chronically ethanol exposed and withdrawn rats. Result of our study clearly indicates that ethanol intake did not altered sexual activity significantly but has found to decrease ejaculations to good extent whereas ethanol withdrawal significantly decreases the sexual activity as reflected from decrease in the number of intromissions. Results suggested that number of ejaculations were not significantly altered in comparison to saline or chronic alcohol treatment but importantly there was substantial decrease in ejaculation latency in withdrawn male rats. Administration of Agmatine (20 and 40 mg/kg ip) have substantially restored the number of intromissions which decreased in ethanol withdrawn rats. Importantly it has also increased ejaculation latency in withdrawn rats. The co-administration of subeffective dose of I_1 agonist moxonidine (0.25 mg/kg) was found to potentiate the effect of subeffective agmatine (10 mg/kg ip) dose. Supporting to this I_1 antagonist efaroxan (9 mg/kg) have attenuated the effect of agmatine (20 mg/kg) on sexual behavior of withdrawn rats. However I_2 imidazoline agonist 2 BFI (2.5 mg/kg) could not potentiate the effect of subeffective agmatine (10 mg/kg) neither Idazoxan, I_2 receptor antagonist inhibited the effect of effective agmatine (20 mg/kg) dose. Thus present study for the first time investigated the effect of ethanol withdrawal on sexual behavior of male rat and beneficial effect of agmatine in the same. The involvement of imidazoline I_1 receptor interaction of agmatine is also explored as target for sexual alteration induced by ethanol withdrawal.

Keywords: Agmatine, Ethanol, Ethanol withdrawal, Imidazoline receptors.

D-258

Reversal of Intracerebroventricular Streptozotocin Induced Cognitive Deficit by Alendronate in Mice As Assessed By Different Behavioral Paradigms

Saima Zameer, Mohd Akhtar, Divya Vohora and Javed Ali
Department of Pharmacology, School of Pharmaceutical Education and Research
Jamia Hamdard, New Delhi - 110062, India
saimazameer@yahoo.com

Abstract:

Alzheimer's disease is a neurodegenerative disorder manifested by progressive cognitive deficit and a number of complex neuropathologies, including neurofibrillary tangles, neuritic plaques and cholinergic dysfunction. The existing therapeutic treatment confer only symptomatic relief but not completely correct the pathological basis of AD. Therefore, several hypothesis have been tested for defining points of pharmacological interventions in AD. Alendronate, a nitrogen containing bisphosphonate is recommended for treatment of bone disorders like osteoporosis and Paget's disease. Earlier reports cited its beneficial role in brain via inhibiting acetylcholinesterase enzyme and cholesterol synthesis which is involved in development of AD. So we hypothesized the role of alendronate in this disorder. Molecular docking study to investigate its affinity to beta and gamma secretase enzymes and different neurobehavioral activity tests were performed. Oral administration of alendronate (1.76 mg/kg) for 15 days was found to reverse the cognitive deficit induced by intracerebroventricular administration of streptozotocin (3 mg/kg) in mice. In Morris water maze alendronate treated mice showed significantly reduced escape latency and spent more time in target quadrant during spatial acquisition and reference memory test respectively. Additionally there was increased score in locomotor activity test and % alternation in spontaneous alternation behavior test as compared to streptozotocin induced dementia in mice. Furthermore, in passive avoidance paradigm significantly increased step through latencies were observed in drug treated groups. Taken together these results, alendronate may ameliorate streptozotocin induced dementia of AD type in mice.

Keywords: Alendronate, dementia, streptozotocin, Alzheimer's disease and molecular docking.

D-259

Delta 9 –Tetrahydrocannabivarin -a and Restores Motor Functions in MPTP-Induced Experimental Parkinson's disease In Rats

Anchal
Maharaja Ranjit Singh Punjab Technical University, Bathinda, Punjab, India
arora.anchal370@gmail.com

Abstract:

INTRODUCTION: Parkinson's disease is a movement disorder due to dysfunction of various neurotransmitters in brain in Substantia Nigra Pars Compacta. Various studies have suggested the beneficial effects of CB1 receptor antagonist in PD pathology. Its role is still controversial. Several reports also suggest that CB2 agonist is beneficial in PD pathology. OBJECTIVES: The current study aims to identify neuroprotective potential of delta9 THCV against MPTP induced behavioral neurochemical and biochemical abnormalities in rats. EXPERIMENTAL METHODS: Repeated intranigral (day 1, 7, 14) administration of MPTP was done to produce stable motor deficits in rats. THCV, a CB1 antagonist and partial CB2 receptor agonist was administered chronically (14-28 days) in MPTP treated rats. Behaviorally, grip strength, narrow beam walk tests were used to access motor behaviors. Biochemically, oxidative stress and pro-inflammatory cytokine levels (TNF-α and IL-β) were determined in striatal brain homogenates. RESULTS AND DISCUSSION: Following third (day 14) intranigral administration of MPTP, rats showed stable motor deficit and elevation in oxidative stress and cytokine levels (day 28). THCV treatment significantly attenuated elevated levels of cytokines, oxidative stress and improved motor behavior in MPTP treated rats. CONCLUSION: The present study strongly points towards a possible role of CB1/CB2 receptor modulation in PD.

D-260

Role of Vitamin D in Managing Blood Sugar Levels in Diabetic Patients

SK. Apsara parveen, P. Thriveni and G. Rispa
Hindu College of Pharmacy, Amravathi Road, Guntur - 522002, Andhra Pradesh, India
apsaraparveen230@gmail.com

Abstract:

Introduction: Vitamin D is a fat soluble nutrient; it is one of the 24 micro nutrients critical for human survival. One important function of vitamin D on the beta cells of pancreas is insulin secretion. In cases of deficiency of vitamin D there is not only a decreased secretion of insulin but also increased insulin resistance can also be seen. Treating with vitamin D delays the development of insulin resistance & diabetes mellitus. **Objective:** Our objective was to examine the association of serum 25-hydroxy vitamin D levels with type 2 diabetes mellitus & effects of vitamin D on it. **Methods:** In our study analysis were carried out on 200 patients (120 men & 80 women) aged about 35 or above conducted for 1 year. Diabetes mellitus was defined as fasting plasma glucose > 126mg% or current use of oral hypoglycemic agents or insulin. **Results:** Compared to individuals with a sufficient serum 25(OH)D concentration >75nmol/L, the observed values are divided into 4 groups severe (<25nmol/L), mild(25-<50nmol/L), Moderate (50 to <75nmol/L), normal(>75nmol/L).The patients were investigated for blood sugars, vitamin D levels, lipid profiles & HbA1C status at baseline & at the end of 1 year. **Conclusion:** Correction of vitamin D deficiency postpones the development of insulin resistance & thus diabetes mellitus & also improves glycemic control.

Keywords: Vitamin D, Type 2 Diabetes Mellitus, Insulin resistance, HbA1C.

D-261

Stem Cells as Potential Source for Deriving New β -Cells for the treatment of Diabetes

Kajal Rajdev and Saurabh Sharma
Department of Pharmacology, ISF College of Pharmacy, Moga - 142001, Punjab, India
isha92rajdev@gmail.com

Abstract:

Diabetes is a devastating disease that affects millions of people worldwide. Diabetes mellitus has been classified into type 1 and type 2 diabetes. In Type 1 diabetes, the immune system destroys beta

cells. In type 2 diabetes, glucose is not utilized, either because of insulin resistance or insulin deficiency. Currently available therapies include insulin preparations, oral hypoglycemic agents, incretins and beta cell replacement through pancreas transplantation (limited by the availability of organs). Recently, stem cell replacement therapy has also been intensively investigated as a potential strategy to treat diabetes since stem cells are the progenitor cells of the body which can differentiate into the required type of cells upon channelizing through proper method. The stem cells extracted from a patient may have the potential to replace countless cells of the body. Successful replacement of damaged β-cells, or regeneration of insulin-producing cells, together with measures that prevent their immune-mediated destruction can be considered as potential treatment for Type 1 diabetes Mellitus, but lack of adequate donors is a barrier. Autologous stem cell transplantation can be proved as an alternative to Islet transplantation by providing a source for insulin secreting cells in Type 2 diabetic patients who fail to control hyperglycemia even with insulin injection. Present study suggests that stem cells are promising alternatives in long-term treatment of diabetes.

Keywords: Insulin, Diabetes, Stem cells.

D-262

Study of Diuretic Activity Of Hydroalcoholic Extract Of Leaves of *Bridelia stipularis (L)Blume* in Rats

K V Aslam, V Vidya and A N Shifila
College of Pharmaceutical Sciences, Govt Medical College, Thiruvananthapuram, Kerala, India
parappuram605@gmail.com

Abstract:

Bridelia stipularis(L)Blume(Euphorbiaceae) has been traditionally used for a number of ailments. The plant is indigenously used as antiamoebic ,antidiabetic and diuretic. In the present study the hydroalcoholic extract of the leaves of *Bridelia stipularis(L)Blume*, HAELBS was investigated for its diuretic potential by Lipschitz test using furosemide as standard drug. Four groups of albino rats were used.Group I served as normal control received vehicle(CarboxyMethylCellulose 2%in normal saline),Group II and III received low(200mg/kg) and high doses of HAELBS in vehicle ,Group IV, the standard drug furosemide (10mg/kg p.o). Immediately after the extract treatment, all the rats were hydrated with saline (15ml/kg) and placed in metabolic cages specially designed to separate urine and feces. Total volume of urine collected was measured at the end of 5th hour. During this period no food and water were made available to the animals. Various parameters like total urine volume, concentration of sodium, potassium and chloride ions in urine were measured and from which the Saluretic Index, Natriuretic Index and Carbonic Anhydrase Inhibition Index were calculated. Results showed that single dose administration of HAELBS at 200 and 400mg/kg and standard drug furosemide (10mg/kg) has significantly increased the urine output .The extract showed less significant effect on Saluretic and Natriuretic activity and non significant effect on CarbonicAnhydraseInhibition activity.

Keywords: Diuretic, Saluretic ,Natriuretic Index.

D-263

Evaluation of In-Vivo and In-Vitro Anti-Asthmatic Activity of Methanolic Leaf Extract of *Leucas diffisa*

Nasreen Sultana, Akshitha and Swathi
Department of Pharmacology, Aurobindo College of Pharmaceutical Sciences, Gangadevipally, Warangal - 506330, Telangana, India
basvaswathi@gmail.com

Abstract:

Aims: The aim of the paper is to evaluate the anti-asthmatic possessions of methanolic leaf extract of *Leucas diffisa* (Linn) by retaining in-vivo and in-vitro screening models. **Materials and Methods:** In vivo anti-asthmatic experiment was done by inducing Haloperidol-induced catalepsy and Milk-induced leucocytosis in mice. In haloperidol induced catelepsy method the duration of catalepsy was measured at 0, 30, 60, 90, 120 and 150 min. In milk induced differential leukocyte count method differential leukocyte count was done in each group

before drug administration and 24 hr after milk injection. In vitro was done by isolated goat tracheal chain preparation. Percent of maximum contractile responses were plotted to record dose response curves of histamine in the absence and presence of plant extract. **Results:** The result of present investigation showed that the methanolic leaf extract of *Leucas diffusa* was inhibited the contraction induced by histamine. In this study results showed significant ($p< 0.05$) protection against haloperidol-induced catalepsy at dose 500 mg/kg and milk induced leukocytes count, expected results were too decrease defferencial leukocyte count. **Conclusions:** The present study concludes that the leaf extract of *Leucas diffusa* exhibited bronchodilator activity. As a result of the methanolic extract produced significant dose-dependent antiasthmatic activity. The extract was inhibited the contraction induced by histamine.

Keywords: Antiasthmatic activity, catalepsy, *Leucas diffisa.*

D-265

Investigation of Phytochemical and Pharmacological Activities of Leaves of *Pauteria Campechiana* Baehni

Saravanan M, Santhosh Kumar M, Suresh V and Thamotharan G
Department Of Pharmacology, JKKMMRF's Annai JKK Sampoorani Ammal College of Pharmacy, B. Komarapalayam – 638183, Tamilnadu, India
saravananssm555@gmail.com

Abstract:

The study was designed to investigate the antiulcer activity of ethanol extract of the leaves of *Pauteria campechiana* (kunth) Baehni (sapotaceae) using different models of gastric and duodenal ulceration in albino rats. Ulcers were induced by oral administration of ethanol. The extract was administered at a dose of 100 and 200 mg/kg orally 30 min prior to ulcer induction. Omeprazole (20 mg/kg) was used as a reference standard. The antiulcer activity was accessed by determining and comparing the ulcer index in the test group with that of the standard drug treated group. Gastric volume, total acid and free acid were estimated in the male albino rats. *Pauteria campechiana* (200mg/kg) showed maximum inhibition of gastric acid, free acid and total acid to 68.50%, 70.01% and 90.61%, respectively. The ulcer index in the *Pauteria campechiana* treated animals was found to be significantly less in all the models compared to standard drug treated cases. The antiulcer activity of *Pauteria campechiana* was, however, less than that of omeprazole. The results suggest that *Pauteria campechiana* possesses significant antiulcer property which could be due to cytoprotective action of the drug or strengthening of gastric and duodenal mucosa with the enhancement of mucosal defence.

Keywords: *Pauteria campechiana*, Anti-ulcer, Ulcer index, Omeprazole.

D-266

To Investgate the Antidepressant Like Activity of *Madhuca Longifolia* in Laboratory Animals

Snehal Sali, Sagar Khambane and Ahijit Kulkarni
Department of Pharmacology ,Savitribai Fule Pune University, Dr. D. Y. Patil IPSR, Pimpri Pune, Maharashtra, India
snehalsali25@gmail.com

Abstract:

The present work was subjected to investigation for the evaluation of the antidepressant activity of Methanolic extract of leaves of *Madhuca longifolia* in experimental laboratory animals like mice and rats viz. Tail Suspension test, Forced Swim test and Reserpine induced Hypothermia. Forced Swim test & Tail Suspension test are the most commonly used preliminary screening tests for characterizing potential antidepressant drugs. In these models MEML at doses of 350 mg/kg, p.o and 750 mg/kg, p.o showed significant increase in the motor activity of mice which elevate depressed mood by decreasing immobility time of mice. In Reserpine induced hypothermia model, Reserpine induces hypothermia which can antagonized by the MEML (350 & 750 mg/kg, p.o) and Fluoxetine (Standard-10

mg/kg-p.o) which revealed that MEML might be acting through Serotonin reuptake inhibition like Fluoxetine. The parameters observed in this model are rectal temperature readings and Ptosis Score. These finding indicates the

D-267

Simultaneous Approach of iNOS Inhibition and Neuroregeneration for Attenuating Type II Diabetes Mellitus Induced Neuropathic Pain in Rats

Abhilasha Ahlawat and Saurabh Sharma
Department of Pharmaceutical Sciences, Maharashi Dayanand University, Rohtak - 124001, Haryana, India
ahlawatabhilasha@gmail.com

Abstract:

In view of pathologic basis for treatment of diabetic neuropathy, it is important to enhance nerve regeneration and prevent nerve degeneration. So, in the present study, we have investigated the effect of S-Methylisothiourea Sulfate (selective iNOS inhibitor) and Citicoline, alone and in combination, on Type II Diabetes Mellitus induced neuropathic pain in wistar rats. Type II diabetes was induced by providing high fat diet and low dose of Streptozotocin for 35 days in rats. Type II Diabetes Mellitus was assessed in terms of increased glucose, triglycerides, cholesterol, LDL levels, glucose tolerance and decrease in HDL levels. Neuropathy as complication of type II diabetes was assessed in terms of decreased nerve conduction velocity, mechanical and thermal hyperalgesia and cold allodynia. Oxidative stress was assessed in sciatic nerve and showed increase in LPO and nitrite levels whereas decrease was shown in GSH and catalase activity. Axonal degeneration marked by nerve fibre dearrangement and demyelination was observed in histopathological studies. SMT (iNOS inhibitor), Citicoline and low dose combination of both drugs significantly attenuates diabetic neuropathic pain assessed in terms of parameters employed. Thus, it may be concluded that simultaneous administration of SMT and Citicoline may provide potential therapeutics for diabetic neuropathic pain.

Keywords: Diabetic Neuropathic Pain; Citicoline; S-Methylisothiourea Sulfate.

D-268

Investigation Of In Vitro Anthelmintic Activity of Musa Sapientum L. Fruits Alcholic Extract

Jaydeep Kumar Rathore, Anil Sarathe and Nilesh Kumar Rathotre

RKDF School of Pharmaceutical Sciences, NH-12, Jatkhedi, Hoshangabad Road, Bhopal – 462026, Madhya Pradesh, India

jaydeep24pharmacy@gmail.com

Abstract:

Helminthes infections are among the most widespread infections in humans, distressing a huge population of the world. The gastro-intestinal helminthes becomes resistant to currently available anthelmintic drugs therefore there is a foremost problem in treatment of helminthes diseases. Hence there is an increasing demand towards natural anthelmintics. The alcoholic extracts of ***Musa Sapientum* L. fruits** was assayed against adult earthworms for the evaluation of anthelmintic activity. Phytochemical analysis of the crude extracts revealed presence of tannins as one of the chemical constituents. Tannins were shown to produce anthelmintic activity. Various concentrations of extract were prepared then tested and results were expressed in terms of time for paralysis and time for death of worms. Piperazine citrate was used as a reference standard. The result showed that in the extract dose of 200 mg/ml possesses more wormicidal activity. The time of paralysis was 05±0.1 whereas the time of death was 11±0.5. The study showed that Musa Sapientum L. fruits alcoholic extracts proves to be a better anthelmintic remedy.

Keywords: *Musa Sapientum*, anthelmintics, phytoconstituents, tannins, extracts, wormicidal, paralysis.

D-269

A Prospective Observational Study and Drug

Use Evaluation in Post- Operative Patients with Analgesics and Antibiotics Used In Surgical Wards of a Tertiary Care Hospital

Yenkepally Sateesh Chandra
Sree Chaitanya Institute of Pharmaceutical Sciences, Karimnagar, Telangana, India
yenkepallysateeshchandra@gmail.com

Abstract:

Drug Use Evaluation is a method that focuses on improving and evaluating medication use processes with goal of improving outcome of patient. Most of the Drug Related Problems such as Adverse Drug reactions, Drug non-compliance can be prevented by Drug Use Evaluation Program. To Evaluate the Drug use evaluation of Analgesics and Antibiotics used in surgical wards of tertiary Care Center. **Materials and methods: Study method:** This was a prospective observational study conducted for 9 months in a tertiary care hospital. **Study site:** The study was conducted in a 500 bedded tertiary care hospital in a intensive care unit. **Study procedure:** The study was done by collecting information by using patient case sheets, based on the data a questionnaire is prepared. Nearly data of 234 patients were collected which include case history, demographic details and reason for admission, past medical history, laboratory values, and drugs prescribed with their doses and frequency were collected. **Study duration**: The study was conducted for nine months (November 2016 – July 2017). **Results:** A total of 234 patients who had undergone surgery were admitted in the surgical wards. Out of which 180 males and 54 females, the most frequent affected age group was 21 to 52. In this 54 % were married and remaining are students. Out of this all patients received antibiotics and analgesics as well. The prescriptions are irrational due to the treatment is giving in multiple times for pain. So many interactions are identified during study with analgesics and antibiotics prescribed. **Discussion:** Out of 234 patients were of age group between 21 to 52, the most of the people admitted were males( ) and females( ), the most affected age group is 21( ) to 52( ) the analgesics prescribed were diclofenac( ), aceclofenac ( ), tramadol( )and antibiotics were cefatrixone( ), cefpodoxime( ), amoxicillin and potassium clavulanate( ), Amikacin and cefatoxime( ) and the interactions were of major ( ), moderate( ) and minor were found. Types of surgeries were major( ) and minor ( ) and also hospital stay also analysed in our study. **Conclusions:** Our study concluded that most of the surgeries are due to accidents or injuries during work. So, there is a great need for the adoption of various strategies to prevent/Minimize the inappropriate use of antibiotics and analgesics in order to improve the Quality of Medicines as much to reduce the number of significant interactions. By the guidance of clinical pharmacist we can reduce the interactions and also enhances the better outcome of patient.

D-270

Natural Plant Herbs as Neuroprotective Agents- A Review

Rinku, Shivkant Sharma and Dhirender Kaushik
Institute of Pharmaceutical Sciences, Kurukshetra University, Kurukshetra – 136119, Haryana, India
ro94kumar@gmail.com

Abstract:

In the current research, neurological disorders are the most important approach. Neurotoxicity has been defined as "any adverse effect in the chemistry, structure and biological function of the nervous system, during developmental or at maturity stages, induced by chemical changes such as change in the level of neurotransmitters or physical influences" and causes Parkinson, Alzheimer, Huntington, depression, pschycosis and epilepsy. Neurological disorders are caused by a variety of chemicals as well as age related factors. According to the survey of WHO about 6.8 million peoples die due to neurological disorders worldwide and about 100 million peoples suffering

from neurological disorders. Neuroprotective agents are the phytochemicals from herbal plant extract and synthetic compounds that are able to protect central nervous system (CNS) against neuronal injuries due to neuropsychiatric and neurodegenerative disorders. Some examples of the plants like *Withania coagulans, Rosa laevigata*, *Parquetina nigrescens, Calendula officinalis,* and *Leonurus heterophyllus* and many more have neuroprotective activity for different neurological disorders. These natural plant or herbs exhibits neuroprotective activity via ROS scavenging, stimulation of neurons, increasing the neurotransmitters levels and blocking of sodium channels. A wide variety of medicinal plants and herbs having the neuroprotective activity and need to more elaborated studies.

Keywords: Neurotoxicity, Neuroprotective agents, Parkinson disease, Alzheimer disease, Huntington disease.

D-271

Evaluation for Anti-Diabetic Activity of Polyherbal Formulation in Type 2 diabetic Rats

Satyaendra K. Shrivastava, P.K. Dubey, Pankaj Sharma and B. Shrivastava

Swami Vivekanand College of Pharmacy, Khandwa Road, Indore, Madhya Pradesh, India

shrivastavapharma@gmail.com

Abstract:

The present paper deals with anti-diabetic activity of polyherbal formulation containing herbs viz., *Enicostama littorale* (whole plant), *Phyllanthus niruri* (bhooamala), *Eugenia jamboloma* (seeds), *Eugenia jamboloma* (leaves), *Azadirachta indica* (leaves), *Terminalia arjuna* (bark), *Aegle marmelos* (leaves) and *Momordica charantia* (fruits). The formulation (GT-I) was developed as per standard anti-diabetic formulation (GTM) and their anti-diabetic activity was evaluated in alloxan induced model. Both formulation GT-I & GTM at the dose of 500 mg/kg body weight showed significant increase with GT-I 209.83±1.93 to 220.16±1.07 & with GTM 207.13±2.17 to 223.6±1.47 in body weight. The formulated herbal formulation GT-I & GTM at the dose of 500 mg/kg body wt. have shown reduction in total hemoglobin (%) levels. The standard drug Glibenclamide also reduced hemoglobin level. The formulated herbal formulations GTM and GT-I also exhibited good anti-diabetic property by reducing urine sugar level significantly at the dose of 500 mg/kg body wt. The formulated herbal formulation (GT-I) & GTM at the dose of 500 mg/kg body wt. have shown significant reduction in serum glucose levels at 21 day i.e. GT-I from 0 day 278.08±0.62 to 116.50±1.23 on 21 day and with GTM (500 mg) from 0 day 282.66±2.86 to 115.45±0.96 on 21day in diabetic rats. The standard drug Glibenclamide also produced potent anti-diabetic property within 0 day to 21 day when compared to diabetic control group. The results were found to be comparable with control and standard drug.

Keywords: Anti-diabetic, Medicinal Herbs, Polyherbal formulation.

D-272

Invitro Nephroprotective Activity of Proprietary Polyherbal Formulation – Urizone by Using *Vero Cell Lines*

Sharmila Devi V, N. Jayashree and P. Thirugnanasambantham

Dept. of Pharmacology, Madras Medical College, Chennai – 600003, Tamil Nadu, India

vsharmilapharma@gmail.com

Abstract:

Renal disorders are more common nowadays and it is mostly caused by exposure to chemicals or drugs like Aminoglycosides, Acetaminophen, Cisplatin, etc. In this present study, an attempt has been made to evaluate the cytotoxicity and nephroprotective potential of the hydro-alcoholic extract of a proprietary polyherbal formulation – Urizone (HAEPPHF) against Gentamicin induced cytotoxicity in *vero cell* lines. The cytotoxic properties and nephroprotective activity of the HAEPPHF was evaluated by using MTT assay. MTT assay measures the reduction of a tetrazolium component (MTT) into an insoluble formazon product by the mitochondria of viable cells. As per the results, selected formulation does not produces any significant cytotoxicity in *vero cell* lines at the concentration of 1000µg/ml and shows

69.86% cell viability and LC_{50} value found 4242.52µg/ml. In the cytoprotective activity, Gentamicin (50mM) treated cells showed 13.24% of viability and 86.76% of cell mortality. Urizone treated cells at the concentration of 1000µg/ml shows 30.46% viability and 69.54% of cell mortality. Standard ascorbic acid treated cells shows 34.89% viable and 65.11% non viable cells. Based on the results obtained, toxicity profile, *Invivo* Nephroprotective activity along with identification of a marker compounds to be carried out.

Keywords: Renal disorders, Urizone, MTT assay, cytotoxicity, Cytoprotective.

D-273

Evaluation of Wound Healing Potential of Ethanolic Leave Extracts of *Gmelina arborea* Roxb. in Wistar Rats

Subhashree Padhi and Sangram Keshari Panda
Jeypore College of Pharmacy, Rondapalli, Jeypore – 764002, Koraput, Odisha, India
sangrampanda2009@gmail.com

Abstract:

The present study was an attempt to investigate the wound healing potential of *Gmelina arborea* leave extract in two different types of wound models in albino rats viz., incision and excision. The various leave extracts of *G.arborea* , such as ethanol, ethyl acetate ,methanol and petroleum ether were obtained by successive solvent extraction. The standard drug (povidone iodine ointment) applied topically and all the extracts (250 mg/Kg) of *G.arborea* leaves were given orally .The ethanolic extract showed significant increase in wound contraction and formation of scar in excision wound model.The extract showed significant increase in the breaking strength of resutured incision wound as compared to control group($p<0.05$). The result of the present study indicate that the ethanolic extract of *G. arborea* leave shows more significant wound healing property than the other three extracts in excision and incision wound model.

Keywords: *Gmelina arborea,* excision and incision wound model , povidone iodine ointment.

D-274

A Mechanistic Approach for Attenuation of Mmp-2 in Dmh Induced Colon Cancer In Rodents

Deepak Kumar, Saurabh Gupta, Rakesh Sindhu and Gurjeet Thakur
Department of Pharmacology, Chitkara College of Pharmacy,
Chitkara University, Rajpura, Chandigarh Patiala NH-64, Punjab -140401, India
deepakkumar91227413@gmail.com

Abstract:

Nargingenin (N), chemically flavonoid is potentially antioxidant and chemo protective agent. In abundance, this molecule found in citrus fruits like *Citrus paradise* and *Citrus sinensis*. Nargingenin (N) evaluated against Paclitaxel (P) and Cisplatin (C) in inhibiting Matrix Metalloproteinase-2 (MMP-2) and angiogenesis along with oxidative stress, nephrotoxicity and bone marrow toxicity in colon cancer induced SD rats. The tested drugs ({P (6mg/kg) C (4mg/kg)} PC, {P (6mg/kg) C (4mg/kg) N(40mg/kg)} PCN were administered p.o. Di methyl Hydrazine (DMH) schedule. Different hematological parameters were estimated like hemoglobin, total and differential leucocytes count, blood urea nitrogen in Blood. The organ parameters were estimated like malonaldehyde (MDA), superoxide dismutase assay in kidney. Further, MMP-2 estimation werecarried out in colon tissue preparation. The findings reveal that significant increase in heamoglobin, total and differential leucocytes count, blood urea nitrogen in PCN treated group. The present investigations conclude thatnaringenin showed significant chemo protective effect against the toxicity generated by the paclitaxel and cisplatin at tested doses level. Probably Naringenin, work via antioxidant mechanism and showed chemo protective activity. Further confirmation was carried out on MMP- 2 expression of gene and to identify relationship with angiogenesis in the tumor future study.

Keywords: Matrix Metalloproteinase-2 (MMP-2),Di methyl Hydrazine (DMH), Nargingenin (N), Paclitaxel (P) and Cisplatin (C).

D-276

Efficacy of Aspirin in Stroke

S. S. Shiva and B. Bhavani

Vignan Institute of Pharamceutical Technology, Duvvada, Visakhaptnam, Andhra Pradesh, India
ssshiva12133@gmail.com

Abstract:

Gastrointestinal bleeding also known as gastrointestinal haemorrhage, is all forms of bleeding in the gastrointestinal tract, from the mouth to the rectum. Patients with ischemic or hemorrhagic stroke are at risk for systemic complications. Systemic complications endanger patients with stroke; the most critical are aspiration**,** pneumonia and sepsis. After acute brain injury, stress ulcers may develop from vagal hyperactivity resulting **in** increased gastric acid secretion or from mucosal ischemia. GI bleeding may occur and may potentially be devastating in patients with stroke treated with anticoagulation. When stress ulcers bleed, they may contribute to mortality rates in patients with large strokes, but whether prophylactic therapy with its enormous costs reduces time in the intensive - care unit, transfusion rates, or surgery is not known. High-dosage (325 mg per day) and low-dosage (50 to 166 mg per day) aspirin regimens have similar effectiveness in preventing vascular events, but higher dosages are associated with more gastrointestinal side effects and bleeding episodes. Specifically, patients receiving more than 200 mg of aspirin per day for at least one month have more gastrointestinal bleeding (number needed to harm [NNH] = 58), fatal or life-threatening bleeding (NNH = 76), and total bleeding episodes (NNH = 16) compared with those receiving less than 100 mg per day.

However, the overall risk of major bleeding associated with aspirin use (75 to 500 mg per day) is small (NNH = 344) compared with placebo.

Keywords: Aspirin, Gastro Intestinal Bleeding, Stroke, Placebo.

D-277

Neuroprotective Effect of *Annacardium Occidentale* (Cashew Apple Fruit) Against Aluminium Toxicity: An Experimental Study on Cognitive Dysfunction & Biochemical Alterations in Rats

G. Kalyani and Naga Aasish Jampala

K L College of Pharmacy, K L University, Greenfields, Vaddeswaram, Guntur - 522502, Andhra Pradesh, India

aasishashi@gmail.com

Abstract:

This study reveals the Protective role of fruit extract of *A.occidentale* (cashew apple) in aluminium induced cognitive dysfunction & oxidative damage in albino rat, and to explore the neuroprotective effect of *A. occidentale* represented by behaviour and memory tests. Male Wister rats (30) were divided into 5 groups of 6 rats each. Group I received normal saline. Group II were administered orally with $AlCl_3$ (100mg/kg). Group III received rivastigmine 0.3mg/kg body orally. Group IV & V were administered with *A. occidentale* 200 & 400 mg/kg along with $AlCl_3$ of 100 mg/kg orally after 1Hr interval. The study was carried out for a period of 42 days (6 weeks). Behavioural assessment is done using Rota rod apparatus and Elevated plus maze and Biochemical parameters from brain homogenate like acetyl cholinesterase (AchE) activity, Total protein, Lipid peroxidation (MDA), Super oxide dismutase (SOD), Catalase, Glutathione Reductase (GR) were estimated. All the data was analysed using One-way ANOVA followed by Tukey's multiple comparison test. The % reduction of acetylcholinesterase, glutathione reductase observed in *A.Occi* (400mg/kg) dose as compared with that of standard drug was found to be 87.5% and 89% respectively, while % reduction of Catalase and SOD observed in *A.Occi* (400mg/kg) dose as compared with that of standard drug was found to be 97% and 99% respectively. This study demonstrates *A. occidentale* fruit has a neuroprotective effect against aluminium induced behavioural changes.

Keywords: *A. occidentale,* Neuroprotective, Alzheimer's disease, Aluminium.

D-278

Possible Role of CB_1 receptor Modulation in Streptozotocin induced Experimental Dementia of Alzheimer's type in Rats

Mohit Agarwal, Vikas Gupta and Rahul Deshmukh
Department of Pharmaceutical Sciences & Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda -b151001, Punjab, India
login2rd@gmail.com

Abstract:

Cannabinoids have been reported to alter signaling in the brain by targeting the endogenous cannabinoid system (ECS), it has emerged as a potential therapeutic approach to treat Alzheimer and other neurodegenerative diseases due to their neuroprotective, anti-inflammatory and neurotrophic effects. CB_1 receptors are localised in the cerebral cortex and hippocampus areas, which have specific functions regarding cognition. In the present study, we have investigated the effect of noladin ether as CB_1 receptor agonist and AM 251 as CB1 receptor antagonist against streptozotocin induced experimental dementia of Alzheimer's type in rats. Streptozotocin (STZ) was administered in tracere broventrically to induce cognitive deficit and oxidative stress. Cognitive functions were assessed by using Morris water maze and object recognition task. Malondialdehyde, glutathione levels and acetylcholinestrase activity was determined to check oxidative stress and cholinergic functions. Streptozotocin produced significant deterioration of cognitive functions, oxidative stress and degenerative changes in cortical and hippocampal brain regions. Noladin ether dose dependently (0.05 and 0.1 mg/kg) attenuated STZ-induced cognitive deficit, oxidative stress and degenerative changes in cortical and hippocampal region. These results suggest the potential role of CB_1 receptor in regulation of central neuronal transmissions which may be useful in the treatment of neurodegenerative disorders such as Alzheimer's disease.

Keywords: Noladin ether; CB_1 receptor; Cognitive dysfunction; Streptozotocin; Alzheimer's disease.

D-279

Natural and Synthetic Drugs Used For Treatment of Kidney Stone

Yamuna Sallam, Anshita Gupta and Bhushan Muley
Shri Rawatpura Sarkar Institute of Pharmacy, Kumhari (Durg), Chhattisgarh, India
yamunasallam8@gmail.com

Abstract:

Kidney stone disease also known as urolithiasis, is when a solid piece and material (kidney stone) occurs in the urinary tract. Kidney stones typically form in the kidney and leave the body in the urine stream .A small stone may pass without causing symptoms. Kidney stones are most likely to occur between the age of 20 and 40. Different factors can increase your risk of developing a stone. Symptoms of kidney stones can include: blood in the urine (red, pink, or brown urine), vomiting, nausea, discolored or foul-smelling urine, chills, fever etc. There are five types of kidney stone calcium oxalate, calcium phosphate, uric acid,cystine,struvite etc. Treatment Diuretics, calcium-base antacid, Topiramate, Topamax. Natural Drugs Kidney beans, Pomogranate juice. The synthetic of GAG The synthetic GAG pentosan polysulphate (PPS) was used in the treatment of patients with renal calcium stone disease. Anyone who has had kidney stones should try to prevent a recurrence. Some general prevention tips include:- Increase fluid intake, restrict sodium, and reduce protein intake, Get more potassium Then drugs are ibuprofen, allopurinol, potassium citrate etc.Their are use in the treatment of high uric acid levels in the blood, prostate enlargement, and urinary alkalizing agents etc.

Keywords: Kidney stones, Stone incidence,

Epidemiology.

D-280

Cardioprotective Effect of *Avena Sativa Linn* against Isoproterenol Induced Myocardial Infarction in Male Sprague Dawley Rats

G. Kalyani and P. Harika

K L College of Pharmacy, K L University, Greenfields, Vaddeswaram, Guntur – 522502, Andhra Pradesh, India

harikapatibandla149@gmail.com

Abstract:

The present study was designed to investigate whether hydro alcoholic extract of *Avena sativa* (oats), would attenuate the acute myocardial infarction in Isoproterenol (ISO)-treated rat model. Extract was administered orally in 2 doses, by gastric lavage (200, 400 mg/kg) and standard drug α-tocopherol (10 mg/kg) orally for 14 days. ISO control groups received saline orally for 13 days. On 14th and 15th day, ISO (85 mg/kg, Subcutaneous) was administered at an interval of 24 h. On 16th day, rats of all groups were anesthetized and blood was collected. At the end of experimentation, animals were sacrificed; hearts were excised and processed for biochemical studies. Antioxidative parameters lipid peroxidation (LPO), Catalase (CAT), reduced glutathione (GSH) and Superoxide dismutase (SOD) of heart tissues were measured. Cardiac marker enzymes- CKMB & LDH. Histopathological examination of heart tissues was also performed. The levels of endogenous antioxidants are found to be significant. *P<0.05, **P<0.01 and ***P<0.001. A marked fall in the activity of myocardial enzyme CK-MB (54%) and LDH (62%), was also observed in the ISO control group as compared to sham. ISO induced myocardial necrosis resulted in a significant depletion of antioxidant enzymes: CAT (42%), SOD (57%), GSH (34.4), LDH (62%) compared to sham. Nonetheless, Vit E, markedly reduced lipid peroxidation as evidenced by reduction (39%) in MDA levels. This would help to plan the strategy of the treatment of cardiac problems using this plant. In the present study, we found that *A.sativa* protected myocardium from isoproterenol-induced myocardial functional and structural injury.

Keywords: *Avena sativa*, Isoproterenol (ISO), Myocardial infarction (MI), Lipid peroxidation.

D-281

Piperine Potentiate the Neuroprotective Effect of Quercetin against MPTP Induced Neurotoxicity in Rats

Aakriti Garg, Sunpreet Kaur and Shamsher Singh
Department of Pharmacology, I.S.F College of Pharmacy, Ferozepur Road, Ghal Kalan, Moga 142001, Punjab, India
aakritigarg01@gmail.com

Abstract:

Introduction: MPTP is a neurotoxin which cause destruction of dopaminergic neurons, produces Parkinson's disease like manifestations both in human and animals. Quercetin possesses good antioxidant and neuroprotective activity but have poor oral bioavailability. So to overcome this hindrance the present study was designed to investigate the effect of quercetin along with piperine (bioenhancer) against MPTP induced neurotoxicity in rats. **Material and Methods**: Rats were administered MPTP (100 µg/1 µL bilaterally) for 3 days (i.e. 1st, 4th and 7th). Quercetin (25 and 50 mg/kg) and combination of quercetin (25 mg/kg) with piperine (2.5 mg/kg) was administered daily for 21 days starting from the 7th day of 1st MPTP injection. Body weight and behavioral observations (locomotor, Rotarod, Grip Strength and Narrow beam walk performance) were recorded at

weekly intervals after MPTP treatment. On the 22nd day, the animals were sacrificed and the rat striatum was isolated for the estimation of biochemical parameters (lipid peroxidation, glutathione and nitrite), determination of pro-inflammatory cytokine levels (TNF-α, IL-6 and IL-1b) and neurochemical analysis (DA, NE, 5-HT, GABA, glutamate and their metabolites). **Results**: The present finding had showed that chronic quercetin treatment for the 14 days significantly ameliorated the MPTP induced motor deficit, biochemical and neurochemical alterations in rats. Moreover combination of piperine (2.5 mg/kg) with quercetin (25 mg/kg) significantly potentiates the protective effect as compared to curcumin alone treated group. **Conclusion:** In conclusion the administration of combination of quercetin and piperine had significantly prevented the MPTP induced behavioral, biochemical and neurological alteration by enhancing antioxidant and anti-inflammatory properties in rats.

Keywords: MPTP, Quercetin, Piperine, Parkinson's disease, Excitotoxicity, Oxidative stress.

D-282

Curcumin in Combination with Piperine Attenuates MPTP induced Dopaminergic Neuron Injury In Rats: Impact From Behavioral To Neurotransmitter Alterations

Urvashi and Shamsher Singh
Department of Pharmacology, I.S.F College of Pharmacy, Ferozepur Road, Ghal Kalan, Moga 142001, Punjab, India
urvashilangeh23@gmail.com

Abstract:

Introduction: MPTP is a neurotoxin which elicits the pathophysiology of Parkinson's both in human and rodents. Studies indicated that herbal antioxidant like curcumin having neuroprotective potential but major complication is its poor oral bioavailability. Thus present study was designed to elucidate the neuroprotective effect of curcumin in combination with piperine against MPTP induced PD like symptoms in rats. **Methods**: Rats were administered MPTP (100 µg/1 µL bilaterally) on 1st, 4th and 7th day and behavioral test were performed on weekly basis. Curcumin (25 and 50 mg/kg p.o) alone and combination of curcumin (25 mg/kg p.o.) with piperine (2.5 mg/kg p.o.) was administered daily for 14 days starting from the 7th day of 1st MPTP injection. On the 22nd day, animals were sacrificed and the striatal tissues were used for biochemical (MDA, reduced glutathione and nitrite), neuroinflammatory (IL-6, IL-1β and TNF- α) and neurotransmitter (dopamine, norepinephrine, 5- HT, GABA, glutamate and their metabolites) analysis. **Results**: Intrastriatal administration of MPTP significantly reduced body weight, impaired motor performance in rats. MPTP depleted antioxidant enzyme, altered neurotransmitters. Curcumin at low dose of (25 mg/kg, p.o),high dose (50 mg/kg, p.o) and combination of curcumin with piperine (25 mg/kg, p.o+ 2.5 mg/kg, p.o) enervate the alteration in behavioural, biochemical, neuroinflammation and neurochemicals in striatum. **Conclusion**: Curcumin in combination with piperine can be useful as therapeutic strategy for PD along with available drugs.

Keywords: Quinolinic acid, Curcumin, Piperine, Norepinephrine, N-methyl D-aspartate.

D-283

Myasthenia Gravis: Causes, Symptoms and Treatment

Laxman Bhati, C.V. Narayan, Shikha Raheja and Viney lather
Jan Nayak Ch. Devi Lal Memorial College of Pharmacy, Sirsa – 125055, Haryana, India
laxmanbhati5@gmail.com

Abstract:

Myasthenia gravis is an autoimmune disorder affecting about 1 in 10,000 population, due to development of antibodies directed to the nicotinic receptors (NR) at the muscle endplate. The article is undertaken to discuss the causes, symptoms and treatment of Myasthenia gravis. The disorder shows the reduction in a number of free Nm cholinoceptors to 1/3 of normal or less and induces structural damage to the neuromuscular junction. Initially, weakness and easy fatigability are reported that is recovered after rest. Symptoms of disorder firstly include weakness of eyelid, external ocular, facial and pharyngeal muscles. Later, limb and respiratory muscles get

affected. Treatment of Myasthenia gravis is started with neostigmine and its congeners improve muscle contraction by allowing acetylcholinesterase (AChE) released from prejunctional endings to accumulate and act on the receptors that directly depolarize the endplate. Pyridostigmine, corticosteroids can also be given as an alternative treatment.

D-284

GPCR Signalling: An Approach to Physiological and Pathological Roles

Devesh Aggarwal and Shamsher Singh
Department of Pharmacology, ISF College of Pharmacy, Moga - 142001, Punjab, India
deveshaggarwal1992@gmail.com

Abstract:

G-Protein Couples Receptor (GPCRs) is cell membrane macromolecules, acts as drug targets for the treatment of various diseases. Presently, GPCR is powerful tool for drug discovery and to invent the hidden molecular mechanisms of therapeutic agents. Over 30% of clinically marketed drugs exhibit their activity via GPCR. A major challenge for the pharmaceutical industry is to identify the new ligands for GPCR in order to halt pathological insult. Activation of adenyl cyclase (AC) results in accumulation of secondary messenger cAMP which function mainly through cAMP dependent protein kinase A(PK_A). The PKA phosphorylates and alters the enzymatic functions, ion channels, transporters, transcription factors and structural proteins to manifest as increased contractility/impulse generation (heart), relaxation (smooth muscle), glycogenolysis, lipolysis, inhibition of secretion/mediator release, modulation of junctional transmission, hormone synthesis, etc. While Activation of phospholipase C(PL-C) by the activated GTP carrying subunit (Gq) hydrolyses the phospholipid phosphatidyl inositol4,5-bisphosphate (PIP_2) to generate secondary messengers inositol 1,4,5-trisphosphate (IP_3) and diacylglycerol (DAG). The IP_3 being water soluble diffuses in cytosol and mobilizes Ca^{2+} from endoplasmic reticulam depots. DAG recruits protein kinase C (PK_C) and activates it with the help of Ca^{2+}. In pathophysiology GPCRs are involved in numerous neurological disorders likein Alzheimer's disease (AD) and non-neurological disorders like diabetes mellitus. GPCRs also directly influence the amyloid cascade through modulation of α-, β- and γ-secretases as well as proteolysis of the amyloid precursor protein (APP) in AD.

Keywords: G-Protein Coupled Receptor (GPCR), Alzheimer's disease, Diabetes Mellitus.

D-285

Chronic Forced Swimming Induced Stress Alters Behavioural, Histological and Anti-Oxidant Status

Pradhan R., Prusty S. K., Pati A. K., Subudhi B. B. and Sahu P. K.
School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar - 751003, Odisha, India
pradhanrajat.pr@gmail.com

Abstract:

Exposure to chronic stress is an important factor of neurodegeneration. Forced swimming test is a common model for chronic stress which needs validation in terms of duration of exposure and correlation of behavioural, histological and anti-oxidant status. Adult wistar albino rats (150-200 g) of both sexes were divided into two groups. Group I treated as control and Group II animals were subjected to forced swimming test for 30 minutes daily. At different days (0, 3,7,15 and 30) effect on behavioural, histological and anti-oxidant status was evaluated. Swimming stress of 30 minutes daily for 15 days significantly ($p<0.05$) decreased the time of fall in rotarod, locomotor activity in actophotometer, number of correct entries in radial maze, superoxide dismutase (SOD) level and significantly ($p<0.05$) increased the malondialdehyde (MDA) content along with prominent tissue degeneration in brain, heart, liver and kidney. The present study reveals that, 30 minutes exposure to forced swimming for 15 days can be a novel model of chronic stress as it results in significant alterations in behavioural, histological and anti-oxidant status.

Keywords: Stress, Animal model, Forced swimming, neurodegeneration, behavior, histology.

D-286

Standardisation of *Semecarpus Anacardium* Using TLC Technique

Swagat Biswal, N T Pramathesh Mishra, Alok Ranjan Mohanty and Pratap Kumar Sahu

School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar – 751003, Odisha, India

swagatbiswalcool@gmail.com

Abstract:

Semecarpus anacardium is commonly known as "BHALLATAK". It has been used since hundreds of years in Indian system of medicine (Ayurveda). It has lots of medicinal property due to various constituents, which are present in it like phenolic compounds, flavonoids, carbohydrates, alkaloids, steroids, etc. Shodhana is a process to remove the impurities of medicinal substances. It is essential because higher concentrated chemicals may cause adverse effect on human body.These chemicals should be neutralized to its normal pharmacological actions. **OBJECTIVE:** To perform sodhana of nuts of *Semecarpus anacardium* Linn. Following ayurvedic pharmacopoeia procedure; To extract the nuts of *Semecarpus anacardium* Linn. (preshodhit and shodhit) by methanol; To standardise both preshodhit and shodhit *Semecarpus anacardium* nuts using TLC. **METHODOLOGY** Plate preparation; Spotting the plate; Preparation of solvent system; Visualization of spots; Development of plate.

RESULTS AND DISCUSSION:

A large number of solvent systems were used to develop chromatogram with good resolution by trial-error method. The chloroform: methanol in the ratio of 9.8:0.2 was found best solvent system for resolution of chemical constituents. The methanolic extract of *Semecarpus anacardium* (preshodhit) exhibited six spots with R_f values 0.307, 0.5, 0.557, 0.634, 0.692, 0.788. Similarly, methanolic extract of *Semecarpus anacardium* (shodhit) showed six spots with R_f values of 0.352, 0.509, 0.549, 0.607, 0.686, and 0.803. TLC profiling of preshodhit and shodhit extracts gives an impressive result that directing towards the presence of number of phytochemicals. Various phytochemicals gives different R_f values in solvent system (Chloroform: Methanol). This variation in R_f values of the phytochemicals provides a very important clue in understanding of their polarity and also helps in selection of appropriate solvent system for separation of pure compounds by column chromatography.

D-287

A Study On The Amelioration Of Hyperglycemia By Combined Effect Of Glibenclamide, Aspirin And Vitamin-C In Alloxan Induced Diabetic Wistar Rats.

Rishab Roy, Rachna Sharma and Kalyan Roy
Department of Pharmacology, Himalayan Pharmacy Institute, Majhitar, East Sikkim, India
wrishi.mldt@gmail.com

Abstract:

Various investigations on diabetic mellitus reveal that systemic inflammation and oxidative stresses are two key factors that limit the use of oral hypoglycemic drugs mainly glibenclamide. In this study, we decided to analyze the hypoglycemic efficacy of glibenclamide combined with aspirin and Vit C in alloxan induced diabetic rats. Four groups of animals received the following treatment regimen for 30 days: (1) Normal Control (distilled water, p.o.); (2) Diabetic Control; alloxan (110 mg/kg, i.p.); (3) Diabetic rats treated with glibenclamide (10mg/kg) p.o. (4) Diabetic rats treated with glibenclamide, Aspirin(4.64mg/kg) and Vitamin-C(40mg/kg) p.o.. At the end of 30 days fasting blood glucose, lipid levels and antioxidant activity were assessed. Glibenclamide + Aspirin + Vit C decreased ($P<0.001$) blood glucose concentration in diabetic treated group, when compared with untreated diabetic groups. Combination of glibenclamide, aspirin and vit C reduced malonaldehyde concentration in brain and improved antioxidant defense by SOD. Aspirin and vit C along with glibenclamide may be more effective than glibenclamide alone in ameliorating hyperglycemia, oxidative stress and dyslipidemia in alloxan induced diabetic rats. Therefore, adjunct treatment of diabetics with aspirin and Vit C may be beneficial at preclinical level. We contemplate to commission a correlation study in clinical setting to test this hypothesis.

Keywords: Inflamation, oxidative stress,

hypoglycemia, antioxidant.

D-288

Possible Involvement of Caveolin in DOCA Salt Induced Renovascular Hypertension and Vascular Dysfunction in Rats

Himanshi Khera, Shalini Jamwal and Saurabh Sharma
Cardiology Division, Department of Pharmacology, I.S.F College of Pharmacy, Moga-142001, Punjab, India
kherahimanshi740@gmail.com

Abstract:

Introduction: Caveolin has been documented to attenuate eNOS and reduces nitric oxide level.,that consequently leads to vascular dysfunction and hypertension. The present study has been designed to investigate the involvement of caveolin in DOCA salt induced renovascular hypertension and vascular dysfunction in rats. **Method:** Wistar Albino rat were anesthetized, through a flank incision the left kidney was removed followed by administration of 40 mg/kg, s.c. DOCA salt twice for 6 weeks. Hypertension was assessed by non invasive tail cuff method and VED was assessed in terms of attenuation of Ach induced endothelial vascular relaxation and decreased in nitric oxide, reduced glutathione level and Mrna expression of eNOS and increased level of TNF-α. **Result:** Uninephrectomy + DOCA (40 mg/kg.., s.c: 6 weeks) administration increased mean arterial blood pressure in rats after 6 weeks as compared to normal groups.VED was assessed in terms of decreased serum nitrite/nitrate conc and reduced glutathione levels. Daidzein and lisinopril treatment for one week ameliorated VED in hypertensive rats. **Conclusion:** Therefore it may be concluded that daidzein(inhibitor of caveolin) have beneficial action on NO activity and ameliorated hypertension associated vascular endothelial dysfunction.

Keywords: Hypertension,Vascular endothelial dysfunction, deoxycortisone actate, Acetylcholine, endothelial nitric oxide synthase.

D-289

Comparative study on the Effect of Volatile Oils on Central Nervous System by Behavioral Change of Mus Musculus (mice) Using Polyherbal Preparation

Pritam Chetri and Rimjhim S. Roy
School of Pharmacy, ITM University, Gwalior, Madhya Pradesh, India
chetripritam@gmail.com

Abstract:

Volatile (unstable) oils are extremely complex & possible most interesting herbal elements that provide the herbalists with potent aid in carrying out their treatment. However, the fact remains that the conventional pharmacologists seldom recognize these oils to be useful. The administration of volatile oils or their constituents in aromatherapy, complementary medicine & folk medicines has been known for a long time & its relevance is steadily growing. The present study was conducted to further explore volatile oils that posses an effect on central nervous system by using Mus musculus. Polyherbal preparations were used for the study of the effects on CNS. The results summarize the observations & elucidate the possible mechanism responsible for beneficial effects.

Keywords: Volatile oils; Mus musculus; Polyherbal formulation; Central nervous system.

D-290

Development and Evaluation of Chitosan-Curcumin Based Wound Healing Formulation

Nasima Ahmed, Lipimudra Padhy, Bimalendu Chowdhury and M.E.B. Rao
Roland Institute of Pharmaceutical Sciences, Berhampur - 760010, Odisha, India
ahmed.nasima91@gmail.com

Abstract:

Wound healing is a perplexed process that involves distinct overlapping phases.Complex healing cascade for restoration of skin integrity starts from the moment of injury and ends with scar formation. In this study, first compatibility of chitosan and curcumin was analyzed. Then wound healing hydrogels were prepared by using different concentrations of chitosan and curcumin, called formulation-1(F1) and formulation-2 (F2).. The hydrogels were then studied for their release profile, physico-chemical properties and antimicrobial properties.Wound healing properties were analysed using wound contraction

rate, hydroxyproline content, histopathology, and anti-inflammatory response. F2, containing 0.5% Curcumin and 1% Chitosan shoween faster wound contraction rate, higher anti-inflammatory activity (IL-10) and lower expression of pro-inflammatory cytokine (TNF). Hydroxyproline content, a marker for collagenisation was observed to be significantly higher in F2 treated groups. F2 also showed significant antimicrobial activity and better histopathological responses as compared to the other F1, containing 1% Curcumin and 0.5% Chitosan. Data were analyzed using one-way ANOVA followed by Dunnett multiple comparision test using Graph Pad Prism. Based on the above findings, the present study suggests that the F2, may be a potential alternative which may be helpful to the wounded soldiers for early recovery from the battlefield injuries and other related aspects.

Keywords: Wound healing, Curcumin, Chitosan, antimicrobial, anti-inflammatory.

D-291

A Prospective Study on Monitoring the Effectiveness, Pharmacovigilance and Psychosocial Problems Associated With Contraceptive Methods in Women

Pallavi P, Mohammed Haneefa K.P and Reshma Roy
Department of Pharmacy Practice, Alshifa College of Pharmacy, Perinthalmanna - 679339, Kerala, India
pallavipalasseri95@gmail.com

Abstract:

In the current research, a prospective longitudinal study was carried out with an aim to assess the effectiveness, pharmacovigilance and psychosocial problems associated with contraceptive methods like oral contraceptives, IUDs and tubectomy in women. The study was carried out in two primary health centers - Cheeratamanna (4 wards) and Thekinkode (3 wards) in Malappuram district for a period of 6 months. Based on the inclusion and exclusion criteria, about 210 female subjects started to use either Oral contraceptives, Copper T or have undergone tubectomy in the month of December were enrolled in the study. From the study, tubectomy (98.8%) was found to be the most effective method with least adverse effects followed by IUD (97.5%) and OC (88.9%). The major adverse effects of OC were found to be vomiting, headache, weight gain and mood changes. Similarly Cu T causes bleeding, back pain and insertion site pain, while ectopic pregnancy and abdominal pain were found to be the adverse effects of female sterilization in enrolled subjects. Results revealed that there is no positive impact on psychological problems with contraceptive usage. It was concluded that for better social improvement, emphasis should be given on educating women regarding the right choice of contraceptive method and its various adverse effects and psychosocial problems.

Keywords: Contraceptives, effectiveness, adverse effects.

D-292

Diuretic Study of the Ethanolic Extract of Leaves of Gymnema Sylvestre

Nadugopal Bhuyan and Jagadish Kumar Khuntia

Gayatri Institute of Science and Technology, Gunupur, Rayagada - 765022, Odisha, India
nadugopal.1997@gmail.com

Abstract:

In the present study, experiment was carried out to validate the use of Gymnema sylvestre extract for diuretic study. The experiments were performed under the same condition with synthetic pharmacological diuretic considered as check i.e Furosemide (20 mg/kg body weight) in 0.9% sodium chloride solution. The ethanolic extract leaves of Gymnema sylvestre significantly increased the elimination of overloaded fluid as compare to normal saline treated group. At the maximum of diuretic response, urinary osmolarity decreased significantly when compared with controls. The stability of aldosterone level, the absence of correlation with the plasma levels of sodium, and the increased clearance of free water in the animals receiving the extract show that increased diuresis and natriuresis moderate elevation are tubular in origin. The increase

in Na+, K+, and Cl– induced by the extract caused alkalinization of the urine and showed a strong inhibitory effect of carbonic anhydrase and saluretic. Here Na+, k+ concentrations were determined by flame photometer and Cl- concentration was estimated by titration with silver nitrate solution(0.17 N) using 2ml of ferric alum solution as indicator. The results from the experiment clearly showed that the ethanolic extracts of Gymnema sylvestre act as diuretic in a dose-dependent manner. Here, Wister albino rats were used for diuretic activity study. Though there is presence of various allopathic diuretic drugs, there is high dependent of traditional diuretic preparation due to its non toxic, non side effect and high therapeutic efficacy. In this scenario, our formulation for diuretic study provide itself better due to its high therapeutic efficacy.

Keywords: Diuretics, Gymnema sylvestre, Furosemide, Natriuresis, Flame photometer.

D-293

Evaluation of Hepatoprotective Activity of *Santallum Album* (Stem) Against Paracetamol Induced Hepatotoxicity in Albino Wistar Rats

Satya Prakash Dixit

Department of Pharmacology, JSS College of Pharmacy, Ooty - 643001, Tamil Nadu, India

sagar12dixit12@gmail.com

Abstract:

Oxidative stress is implicated as one of the primary factor that contributes to the hepatic damage etc. *Santalum album* is one of the herbal drug traditionally used as livertonic, diuretic, expectorant and stimulant etc. The aim and objective of the study is to investigate the hepatoprotective effect of hydroalcoholic extract of *Santalum album* (Stem) on Paracetamol induced hepatoxicity in wistar rats. The animals were divided in to five groups of 6 animals each. Hepatotoxicity was induced by the administration of Paracetamol 650mg/kg p.o for 7 days. The hydroalcoholic extract *S.album* was administered at doses 200mg/kg, 400mg/kg b.w,p.o for 7 days. Silymarin 200mg/kg p.o was used as a standard. The hepatoprotective activity was evaluated by estimating SGOT, SGPT, SALP, total bilirubin, Glutathione, TBARS and by histopathological analysis of liver tissue. Results were analysed by onewat ANOVA followed by Dunnet's test. *S.album* in doses 200mg/kg, 400mg/kg b.w, p.o. altered paracetamol induced changes in serum and tissue enzyme levels to near normal normal levels. The extract showed significant free radical scavenging activity in a dose dependant manner. As the model is clinically relevant it will further enhance the mechanistic understanding of hepatic damage and help in developing newer and better therapeutic strategies to manage oxidative stress.

D-294

Evaluation of Anti-Depressant Activity of *Musa Paradisiaca* Linn. Using Experimental Models

Ayushi Arora, Palak Darji, Dharmendra Prajapati and Varsha Galani

Ramanbhai Patel College of Pharmacy, Anand, Gujarat, India

ayushiarora2807@gmail.com

Abstract:

The effects of antidepressant treatments have been discussed in terms of effects on noradrenergic, dopaminergic and serotonergic systems. *Musa paradisiaca* (Linn.) has several therapeutic applications in folk medicine in managing wide range of disorders including nervous disorder (nervine tonic). Based on this action of *musa paradisiaca* (Linn.), antidepressant activity of *Musa paradisiaca* fruit was carried out using experimental models. 7 days treatment of hydroalcoholic extract of *Musa paradisiaca* fruit was (MPFE-250 and 500mg/kg, p.o.) evaluated for locomotor activity in mice. The 14 days treatment of hydroalcoholic extract of *Musa paradisiaca* fruit (250 and 500 mg/kg,p.o.) was investigated in the forced swim test (FST) and tail suspension test (TST). The effect of Haloperidol (0.1 mg/kg, i.p., dopamine antagonist) and Bromocriptine mesylate (2mg/kg, i.p., dopamine agonist) on the antidepressant like action of MPFE were also studied in all the tests. Further, the level of brain neurotransmitters (norepinephrine, dopamine and serotonin) were assessed after 14 days treatment of *Musa paradisiaca* fruit extract (MPFE) in mice.

7 days and 14 days treatment of MPFE produced significant reduction of the immobility time in FST and TST respectively. Antidepressant potential of MPFE was reduced by Haloperidol (0.1mg/kg, i.p.) and increased by Bromocriptine mesylate (2mg/kg, i.p.). The neurochemical estimation revealed the level of norepinephrine, dopamine and serotonin were increased with 14 days MPFE treatment. The behavioral and biochemical results of the present study indicate antidepressant property of MPFE, which may be mediated by the norepinephrine, dopamine and serotonin mechanisms in the mice brain.

Keywords: *Musa paradisiaca* (Linn.), anti-depressant, dopamine, forced swim test (FST), tail suspension test (TST).

D-295

Effect of *Punica granatum Linn* Ripe Fruit Extract on Stress Modulated Sexual Behaviour In Male Rats

G. Kalyani, V. Abhiteja and G. Sai Ratna Kumar

K L College of Pharmacy, K L University, Greenfields, Vaddeswaram, Guntur -522502, Andhra Pradesh, India

tejaabhi0@gmail.com

Abstract:

This study demonstrates the effect of treatment of hydro alcoholic extract of *Punica granatum* Linn ripe fruit (PGE) for 28 days on stress modulated sexual behaviour in male rats. The animals were subjected to Immobilization (IMB) stress for 6 hr/day for consecutive 28 days. Body wt of each animal was measured on day 1 before the IMB stress and on day 28 after IMB stress and drug treatment. Sperms were collected from epididymis and vasdeferens and sperm count and sperm motility were observed and histopathology of testis was carried out. Sildenafil and Testosterone were used as standard reference drugs. The extract at high (400 mg/kg/day p.o.) and medium dose (200 mg/kg/day p.o.) significantly decreased the increase in body wt between day 1 and 28 induced by IMB stress and increased weight of accessory sexual organs as compared to stress control animals. The extract produced significant increase in sperm count and % of motile sperms when compared to stress control rats. The histopathological results showed that treatment with PGE at higher doses reverses the changes produced by the IMB stress. The results obtained with high dose of PGE were comparable with that of reference drugs. The present study concludes that, PGE is significantly helpful in overcoming IMB stress induced sexual dysfunction.

Keywords: Stress modulated sexual behaviour, Immobilization stress, *Punica granatum linn.*

D-296

Cooperative Cardio Protection through Adenosine A1 and A2A Receptor: Reviewing Decade of Research

Kashish Bhardwaj, Nidhi Sharma, Rohit thakur, Priyanka Rattan and Rittik Sharma

Shiva Institute of B.Pharmacy, Bilaspur, Himachal Pradesh, India

arvind.pharmacy@gmail.com

Abstract:

Adenosine is a well-known regulator of various physiological activities in the heart. In stress conditions, like hypoxia or ischemia, the degradation of adenosine in the ischemic myocytes induces damage in these cells. However, protective effects in the heart can be achieved by activation of the adenosine receptors. The A_1 adenosine receptor (A_1AR) is a key player in ischemic preconditioning. Both early and late pharmacological preconditioning can be induced via activation of A_1AR with its agonists involving multifaceted signal mechanisms. The A_1AR agonist 2-chloro-N(6)-cyclopentyladenosine (CCPA) has been demonstrated to induce cardioprotection against hypoxic damage. This cardioprotection is mediated by increased p38 MAPK phosphorylation, increased metallothionein, translocation of PKC varepsilon and PKC delta to the calveolin-enriched plasma membrane microdomains, reduced MPTP opening, transactivation of epidermal growth factor

receptor (EGFR) and matrix metalloproteinase (MMP). The delayed cardioprotection induced by CCPA is also due to mitochondrial manganese superoxide dismutase. In addition, only ischemia preconditioning (IPC) or pre-treatment with CCPA can afford cardioprotection and no cardioprotective effect is observed if CCPA is given at the commencement of reperfusion. Moreover, CCPA has been reported to cause lethal arrhythmias and hypotension. In the present review, we will discuss role of CCPA in conferring cardioprotection alongwith the underlying mechanism involved suggesting that A_1AR activation may hold promise as a nobel approach to cardioprotection.

Keywords: Adenosine, CCPA, cardioprotection, adenosine receptors, preconditioning.

D-297

Reinstatement of the Attenuated Neuroprotective Effect of Ischemic Post-Conditioning in Diabetic Mice by SGLT Inhibitor Phlorizin

Kamaljeet Kaur, Viny Mehta, Amteshwar Singh Jaggi and Nirmal Singh
Pharmacology Division, Department of Pharmaceutical Sciences and Drug Research, Faculty of Medicine, Punjabi University, Patiala - 147002, Punjab, India
jeetrai1994@gmail.com

Abstract:

The present study investigates the potential role of sodium dependent glucose co-transporters (SGLT) in neuroprotective mechanism of ischemic postconditioning (iPoCo) in diabetic and non-diabetic animals. Bilateral carotid artery occlusion (BCAO) for 12 min followed by reperfusion for 24h was employed to induce cerebral ischemic injury in mice. iPoCo involving three preceding episodes of carotid artery occlusion and reperfusion of 10sec each, was instituted immediately after BCAO just before prolonged reperfusion. Cerebral infarct size was measured using triphenyltetrazolium chloride staining. Memory was assessed using Morris water maze (MWM) test. Rota rod test, inclined beam walking test, neurological severity score (NSS) and lateral push response were performed to assess motor in-coordination and sensorimotor abilities. Brain thiobarbituric acid reactive species (TBARS), brain glutathione level (GSH), brain acetylcholine esterase (AChE) activity, brain myeloperoxidase (MPO) activity and brain nitrate/nitrite levels were also estimated. Fasting blood glucose levels of animals were noted before and after 6h of surgical intervention. BCAO produced a significant rise in cerebral infarct size and NSS along with impairment of memory and motor coordination and biochemical alteration. iPoCo attenuated the deleterious effect of BCAO in non-diabetic animals however failed to abolish the deleterious effects of I/R injury in diabetic animals. Pretreatment of phlorizin, a SGLT inhibitor not only potentiated the neuroprotective effects of iPoCo in non-diabetics but also restored the protective effect of iPoCo in diabetic animals. It may be concluded that neuroprotective effect of iPoCo is abolished in diabetic animals and SGLT plays an important role in neuroprotection.

Keywords: SGLT, Stroke, Postconditioning, Diabetes, Neuroprotection,Phlorizin.

D-298

Gold in Improving Immune System

G. Jahnavi
Shri Vishnu College of Pharmacy, Bhimavaram, Andhra Pradesh, India
krishnapriya.1997@gmail.com

Abstract:

Arthritis is a condition which involves mainly the inflammation of joints by pannus formation and resulting in the erosion of joints . Basically modern science believes that use of elemental gold is not absorbed from Gastro-intestinal tract when compared to the other drugs. New vaccine uses gold nano particles to mimic virus and carry proteins to immune cells which protect against virus .Nano sized gold particles have been proven to be affective in ameliorating the symptoms of mycobacterial collagen and pristane induced arthritis in rat models

.Gold also used in developing immunity in HIV patients . It is one of the Indians traditional medicine swarna bhasma(gold ash).Principle contemporary use of gold in medicine ,chrysotherapy still remains for treating arthritis.By feeding gold for one month to children then the child becomes intelligent and protected from diseases.

Keywords: Nano sized gold particles,vaccines,chrys otherapy, swarnabhasma, immunity.

D-299

Nephroprotective Activity of Green Tea Extract in Gentamicin Induced Nephrotoxicity

Monika Dhiman, Monisha Bansal, Lalit Garg, Manpreet Kaur, Disha, Chetna, Gurfateh Singh and S.L. Harikumar
University School of Pharmaceutical Sciences, Rayat Bahra University, Sahauran, Kharar, Mohali - 140104, Punjab, India
monikanota95@gmail.com

Abstract:

Nephrotoxicity is defined as renal dysfunction that arises as result of exposure to external agents such as drugs and environmental chemicals. The present work was undertaken to carry out the nephroprotective activity of extract of Green tea (100mg/kg body weight/day) in gentamicin induced nephrotoxicity in Wistar rats. Intra-peritoneal *(i.p)* injection of rats with gentamicin (80 mg/kg body weight/day) for six consecutive days induced marked acute renal toxicity, manifested by a significant increase in blood urea nitrogen, and serum creatinine levels compared to normal controls. Also oxidative stress was noticed in renal tissue as evidenced by a significant decrease in glutathione level, superoxide dismutase, glutathione activities, also a significant increase in malondialdehyde levels when compared to control group. Administration of plant extract at a dose of 100 mg/kg once daily for 15 days restored normal renal functions and attenuated oxidative stress. In conclusion, Green tea extract ameliorates gentamicin induced nephrotoxicity and oxidative damage by scavenging oxygen free radicals, decreasing lipid peroxidation and improving intracellular antioxidant defense, thus extract may be used as nephroprotective agent.

Keywords: Green tea extract, Gentamicin, ROS, BUN, TBARS.

D-300

Therapeutic Nanocarriers for Drug Delivery in Cancer Therapy

Poorti Sharma, Aseem Setia, Shubham Khandelwal, Shikha Thakur and Trilochan Satapathy
Columbia Institute of Pharmacy, Vill-Tekari, Near Vidhansabha, Raipur, Chhattisgarh, India
sharmapoorti91@gmail.com

Abstract:

The use of nanocarriers as drug delivery systems for chemotherapeutic agents can improve the overall pharmacological properties of commonly used drugs in chemotherapy. Cancer Nanotherapeutics is rapidly succeeding and is being implemented to solve a number of limitations of conventional drug delivery systems. There are a variety of nanocarriers are available such as liposomes, polymeric micelles, nanoparticles, and dendrimers which may enhance the therapeutic efficacy of existing anticancer drugs. The clinical success, as well as the ease with which surface modify cations can be made to both liposomes and micelles to accommodate targeting ligands have made these nanocarriers in particular attractive candidates for future work involving targeted drug delivery. Although not targeted, there are clinically approved liposomal-based drugs that are currently used to treat various types of cancers. Nanoparticles have been considered to enhance their circulation time in the bloodstream. They are also able to carry their loaded active drugs to cancer cells by selectively using the unique pathophysiology of tumors. In this review we have discussed the role of nanocarriers for cancer treatment by various nanodelivery system and attempts to provide some current information regarding the clinical status of several of these Nanocarrier-based drugs.

Keywords: Nanoparticles, Nanotechnology, Nanocarrier-based drugs, Nanoparticles; Drug delivery; Chemotherapy; Targeted drug delivery systems.

D-301

The Possible Role of Angiotensin II in Attenuated Cardioprotective Effects of Ischemic Preconditioning In Hyperglycemic Rat Hearts

Supriya Syal, Pardeep Kaur, Mandeep Rana, Sukhjinder Kaur, Monika, Pooja Dhiman S.L. Harikumar and Gurfateh Singh
University School of Pharmaceutical Sciences, Rayat Bahra University, Sahauran, Kharar, Mohali - 140104, Punjab, India
syal.supriya147@gmail.com

Abstract:

The present study has been designed to investigate the Role of angiotensin II in attenuated cardioprotective effects of Ischemic Preconditioning in hyperglycemic rat hearts. Rats were injected alloxan monohydrate (100mg/kg/*i.p*) single dose induced hyperglycemia. Langendorff perfused normal as well as hyperglycemic rat hearts were subjected to 30 min global ischemia and 120 min of reperfusion. Myocardial infarct size was assessed macroscopically using tetrazolinium chloride (TTC) staining. Coronary effluent was analyzed for LDH and CK-MB release to assess the extent of cardiac injury. The oxidative stress in the heart was assessed by TBARS, superoxide dismutase generation and reduced form of glutathione in normal and hyperglycemic rat hearts. Moreover, I/R induced myocardial injury, which was assessed in terms of increase in myocardial infarct size, LDH and CK-MB release in coronary effluent and decreased in coronary flow rate in normal and hyperglycemic rat hearts. The hyperglycemic rat hearts showed enhanced I/R induced myocardial injury as well as high oxidative stress as compared with normal hearts subjected to I/R. Four episodes of IPC (5min each) produced cardiprotection against I/R induced myocardial injury in normal rat hearts as assessed in terms of improvement in coronary flow rate and reduction in myocardial infarct size, LDH and CK-MB and oxidative stress. Losartan (20mg/kg/*p.o*), a selective inhibitor of Angiotensin II type 1 receptor blocking agent shown effects by abolished the injurious effect of I/R injury on rat hearts by markedly restored the cardioprotective potentials of IPC in hyperglycemic rat hearts, decreased myocardial injury and oxidative stress parameters. Moreover, Pre-treated dose of Losartan has been found to be more effective. In conclusion, it is suggested that the high degree of oxidative stress and activation of ROS produced in hyperglycemic rat hearts during reperfusion may activate Angiotensin II, which may be implicated in the observed paradoxically abrogated cardioprotective effect of IPC against I/R induced myocardial injury.

Keywords: Cardioprotective, hyperglycemic, langendroff apparatus.

D-302

Anti-Diabetic Activity of Polyherbal Plants Extracts

Parwatissss Chouhan
School of Pharmacy, Chouksey Engg College, Bilaspur - 495001, Chhattisgarh, India
pchouhan143@gmail.com

Abstract:

Diabetes is disorder associated with malfunctioning of pancreatic gland and it is affecting 54% population above the age of 40 worldwide. Amongst the various types of Diabetes, Type -1 Diabetes mellitus is characterized by pancreatic islets β-cell dysfunction which leads to decrease β-cell numbers causing decrease concentration of Insulin essential for metabolism of glycogen. This research has been on intense focus on the development of alternative sources of β-cell, such as β-cell regeneration through polyherbal formulation based on medicinal plants as antidiabetic phytotherapeutics. Though there are various approaches to reduce the ill effect of diabetes and its secondary complications, herbal formulations are preferred due to lesser side effects and low cost. This study examines the antidiabetic

potential of plant extract(Vinca rosea, Momordica charantia and Aegle marmelos) in a diabetic rat model. Dose depended effect of plant extract on blood glucose was evaluated in Streptozotocin induced diabetic rats by oral administration for 30days. All doses of plant extract of Vinca rosea, Momordica charantia and Aegle marmelos were able to decrease the blood sugar level significantly. Plant extracts treatment increased Insulin level and produce similar effect. These findings suggest that the extract of (Vinca rosea, Momordica charantia and Aegle marmelos) has the therapeutic potential in streptozotocin induced Hyperglycemia; hence it can be used in the treatment of Type-1 diabetes mellitus.

Keywords: Anti-diabetic activity, β-cell, Streptozotocin induced diabetes, Type-1 diabetes.

D-303

Exploration of Antidiabetic Potential of an Indigenous Plant in Streptozotocin - Nicotinamide Induced Diabetes in Rats

Shruti Mooliya, Pallavi Kakade, Deepti Bandawane and Pravin Chaudhari
Department of Pharmacology, P. E. Society's Modern College of Pharmacy, Nigdi, Pune -411044, Maharashtra, India
shrutimooliya23@gmail.com

Abstract:

Abutilon indicum linn (fam. Malvaceae) is an indigenous plant used traditionally for treatment of diabetes and associated complications. Objective of the present study was to evaluate antihyperglycemic and antihyperlipidemic activity of ethyl acetate fraction of aerial parts of *Abutilon indicum* (EAAI) in STZ-Nicotinamide induced diabetes in rats. Diabetes was induced in wistar rats using a single dose of streptozotocin (60 mg/kg, i.p.) and nicotinamide (120mg/kg, i.p.). Animals were divided in five groups and treated with 100mg/kg, 200mg/kg and 400 mg/kg ethyl acetate fraction for 28 days. At the end of study period, fasting blood glucose, oral glucose tolerance test, glycosylated heamoglobin and plasma insulin, glycogen content of liver and skeletal muscle, in vitro α- amylase inhibition assay, in vitro α-glucosidase inhibition assay were determined. Antihyperlipidemic activity such as triglycerides, total cholesterol, HDL level, atherogenic index, VLDL and LDL level were determined. Antioxidant enzymes SOD, CAT, GSH and MDA were evaluated. Liver function parameters such as SGOT, SGPT and ALP were analysed. Kidney and pancreas were subjected for histopathology. Significant decrease in fasting blood glucose, glycosylated Hb, serum triglyceride, total cholesterol, LDL and VLDL, liver function parameters, MDA, SDS-PAGE and nitric oxide was observed. Significant improvement in serum insulin, glycogen content in liver and skeletal muscle, HDL, SOD, CAT, GSH has been observed in EAAI treated diabetic rats. Present study has revealed that EAAI prevented the progression of and diabetic complications in STZ-NA diabetic rats.

Keywords: *Abutilon indicum* linn, diabetic complications, antihyperglycemic, antihyperlipidemic, streptozotocin, nicotinamide.

D-304

A Study on Comparative Lipid Lowering, Efficacy, And Safety of Atorvastatin and Rosuvastatin in Hyperlipidemia in Teritiary Care Hospital

Phool Kumari Shah
Aditya Bangalore Institute of Pharmacy Education and Research, Bangalore, Karnataka, India
shahmamtanepal@gmail.com

Abstract:

BACKGROUND: Elevated levels of blood lipids are well documented risk factors for cardiovascular disease(CVD). Current classification schemes and treatment levels for Hyperlipidemia are based on the National Cholesterol Education Panel's (NCEP) Adult Treatment Program-3 (ATP-III) guidelines. **OBJECTIVES:** The comparison of Anti-Hyperlipidemic drugs such as ATORVASTATIN and ROSUVASTATIN by analysing the appropriateness of prescription with special reference to: Selection of antihyperlipidemic drugs; Concomitant drugs use; Switched therapy; Lab data collection. **METHODS AND METHODOLOGY**: Comparison of antihyperlipidemic drugs in a tertiary care hospital is a retrospective and prospective study, patients who were satisfying the inclusion criteria was enrolled into the study conducted for the period of 6 months.

Data collection form and other relevant source from Medical Record Department(MRD) are used as source of data and materials. **RESULTS:** 150(Sample Size) Hyperlipidemic cases were examined and 59% were male and 41 % female. Where prescription includes ATORVASTATIN 50.66% and ROSUVASTATIN 49.33%. Comparison between two drugs we found lipid lowering data which shows 5mg of ROSUVASTATIN reducing 41% LDL-C whereas ATORVASTATIN 10mg reducing 38% LDL-C. Comparison between two drugs we got p-value of ROSUVASTATIN as 0.021178 and ATORVASTATIN as 0.44964. Which shows the effectiveness of the drugs, as per our study we found ROSUVASTATIN is more effective compared to that of ATORVASTATIN even in lower doses. **CONCLUSION:** Conclusion includes comparative study on lipid lowering efficacy and safety profile of drugs. Even with the lower doses of ROSUVASTATIN, it was Effective in lipid lowering compared to that of the higher doses of ATORVASTATIN.

Keywords: Comparison, Efficacy, and lipid lowering.

D-305

Augmentation of Wound Healing of *Jatropha curcas* Latex

Aayushi Kavachale, Sujata Patidar and Neelam Balekar
IPS Academy College of Pharmacy, Indore – 452012, Madhya Pradesh, India
aayushikavachale23@gmail.com

Abstract:

Literature revealed that latex of *Jatropha curcas* Linn (Euphorbiaceae) is used as anti-inflammatory and in various skin diseases such as scabies, eczema, ringworm etc. The present study was aimed to investigate wound healing potential of *Jatropha curcas* latex (JCL) *commonly* employed by traditional healers and to clarify its traditional use in scientific investigation. The preliminary phytochemical investigation conducted on dried latex of JC revealed the presence of tannin, saponin and flavonoids. The JCL was tested using relevant wound healing activity like antioxidant using DPPH, antibacterial, excision wound model in experimental rats. It exhibited scavenging activity for DPPH with an IC_{50} value of 153 µg/mL comparable to BHT 136.4 µg/mL. The JCL was found to be effective against tested Gram positive bacteria. Topical application of latex exhibited high rate of wound contraction, decrease in period of epitheliazation, high tensile strength in excision wound model in experimental rats. The JCL provides scientific evidence of wound healing activity due to combination of antioxidant, antibacterial, as well as topical application of latex promotes wound healing.

Keywords: *Jatropa curcas*, Wound healing, Antioxidant, Antibacterial.

D-307

Antistress Activity of p-MethoxyCinnamic Acid in Experimental Animal Model

Padilam Usha Rani and T.S. Mohamed Saleem
Department of Pharmacology, Annamacharya College of Pharmacy, New Boyanapalli, Rajampet - 516126, Kadapa (Dist), India
padilam.usharani@gmail.com

Abstract:

In the current research, to evaluate the Antistress activity of p-Methoxycinnamic acid in experimental animal model. The objective behind the research was to evaluate the antistress activity by using Acetic acid induced writhing test, Swimming endurance test and Restraint stress. Swiss albino mice of either sex (20±25g) were divided into 4 groups and 5 groups (n=6) in restraint stress by administration of normal saline (10ml/kg) as control group, Diazepam (2mg/kg) as standard group and p-Methoxycinnamic acid (10mg/kg, 20mg/kg p.o) as treatment group subjected for the antistress activity. Estimating the number of writhings, immobility time and oxidative stress parameters and organ weight after restraint stress. Treatment of Acetic acid, Swimming endurance and restraint stress in mice causes increase in the number of writhings, immobility time and stimulation of HPA-axis in stressful conditions alters organ weights, biochemical parameters. p-Methoxycinnamic acid 10mg/kg, 20mg/kg in stressed mice produce alterations in Acetic acid induced the number of writhes and reduce the immobility time in Swimming endurance test. The spleen weight, brain weight were increased

and decrease in the adrenal gland weight. Oxidative stress parameters like elevated TBARS, Nitric oxide levels were reduced and reduced GSH, Catalase, SOD levels were increased and there is no effect on proteins with p-Methoxycinnamic acid 10mg/kg, 20mg/kg compared with the control group Thus, it can be concluded that the results from the study indicated that the p-Methoxycinnamic acid possessed significant antistress activity.

Keywords: p-Methoxycinnamic acid, Acetic acid induced writhing test, Swimming endurance test, Restraint stress, antistress activity, Mice.

D-308

Clinical Trials: Open Access

Manmeet Singh, Mohit Chandra and Ritchu babbar
Chitkara College of Pharmacy, Chitkara University, Rajpura - 140401, Punjab, India
kainthmanmeet@gmail.com

Abstract:

Any research on humans, aims to study or verify the pharmacological, pharmacodynamics and to detect any side effects of investigational product and study absorption, distribution, metabolism, excretion, rate. The term clinical trials are studies of research that thoroughly study whether a medical strategy, device or treatment is effective and safe for humans. It is a high standard effective comparative research, which aims for enhancement of health care studies. Clinical trials cover a large number of people to consider society as a whole. Pharmaceutical companies, medical centre and various organisations plays crucial role of investor in this studies. Eligibility criteria for participants is that they should be healthy individual or should have disease or conditions that a medical health care professional would be studying. These studies are carried out for data collection regarding efficacy and safety of new drug or device development. Testing of device and drug resumes with expensive research on laboratory, which involves years of experimental work on animal and human cells. If the beginning of research is successful, researchers send data to officials (FDA) for approval to continue research and testing in humans, which is conducted in four phases. Results of this propagation provides clinical professional and research scientists with indication of the valuable administration of the drug.

Keywords: clinical trials, New drug, 4Phases, FDA.

D-309

Herbal Cream for Wound Healing

Nancy Joshi, Ankur Joshi, Sapna Malviya and Anil Kharia
Modern Institute of Pharmaceutical Sciences, Indore - 453111, Madhya Pradesh, India
nancy.joshi1997@gmail.com

Abstract:

Azadirachta indica, *Curcuma longa* and *Carica papaya* has been known for many pharmacological activities. The hydroalcoholic extract of *Azadirachta indica*, *Curcuma longa* and *Carica papaya* (HEAICLCP) were investigated for wound healing potential in rats. *Azadirachta indica* leaves, *Curcuma longa* rhizomes and *Carica papaya* fruit were dried, crushed in coarse powder hydro alcoholic extract was obtained. Water in oil (W/O) cream was formed. In the tenure of this study, 18 male wistar albino rats weighing approximately 150- 200g were used. Group 1 as control group, Group 2 as reference control were treated topically with Povidone-Iodine Cream USP, Group 3 as test control were treated with 0.2% HEAICLCP cream. Wound healing was monitored on days 1,7,15. HEAICLCP promotes wound healing might be fast epithelialisation and bactericidal activity.

Keywords: *Curcuma longa, Azadirachta indica, Carica papaya*, PVP, wound healing.

D-310

The Gluten-Free, Casein-Free Diet in Autism

Megha Bishnoi, Rohit, Shikha Raheja and Viney Lather
JCDM college of Pharmacy, Sirsa – 125055, Haryana, India
meghakhokhar2977@gmail.com

Abstract:

Autism spectrum disorder (ASD) is a set of neurodevelopmental disorders characterized by a deficit in social behaviors and nonverbal interactions such as reduced eye contact, facial expression, and body gestures in the first 3 years of life. It is not a single disorder, and it is broadly considered to be a

multi-factorial disorder resulting from genetic and non-genetic risk factors and their interaction. Autism causes child to not to communicate and also, could not be able to interact socially with communities. But some dietary treatment is help in improving the interaction with communities and also to communicate. The Most famous dietary treatment is given by Feingold's work in 1970s, in which he reported that at least 50% of hyperactive and learning-disabled children improved when their normal diet routine is replaced with gluten free diet. Further may researches given by Prof. and finally most effective dietary treatments use is Gluten-free and Casein-free. Now all the children with autism were treated with a GFCF diet, a synthesis of Milk Free Kitchen by Kidder (1988) and the Gluten Free Gourmet by Hagman (1990) To evaluate effects of a GFCF diet on the severity of autistic symptoms as measured by the Childhood Autism Rating Scale (CARS), Ecological Communication Orientation Scale (ECOS), and direct behavioral observation frequencies.

Keywords: Autism, Children, Treatment.

D-311

Evaluation of Hypoglycemic and Hypolipidemic Study of Methanol Extract of *Sesbania sesban* (Linn.) Poir Bark

M.Vinothranjan, B. Hemamalini, G. Thamotharan and V. Suresh
Department of Pharmacology, JKKMMRF's-Annai JKK Sampoorani Ammal College of Pharmacy, Komarapalayam - 638183, Tamil Nadu, India
vinothranjan97@gmail.com

Abstract:

To find out the hypoglycemic and hypolipidemic activites of methanol bark extract of *Sesbania sesban* is the main objective of the present study. The acclimatized animals were injected with alloxan to induce diabetic condition. Animals were treated with methanol extract of *Sesbania sesban* (MESS) and standard drug Glibenclamide for 21 days. The biochemical parameters such as high density lipoprotein (HDL), low density lipoprotein (LDL), very low density lipoprotein (VLDL), total cholesterol, triglyceride along with blood glucose level are evaluated. Decreased blood glucose level of the test animals shows that the extract exhibit significant antidiabetic activity and levels of LDL, VLDL, TG and TC were reduced after the administration. The HDL level was significantly increased in MESS administered rats when compared to the diabetic control group. This finding tends to reveal that the hypoglycemic and hypolipdemic effect of *Sesbania sesban* are similar to the effect of standard drug Glibenclamide. Alloxan induces DNA fragmentation in pancreatic islets and cell damage has been attributed to the production of toxic free radicals. This plant can get in consideration for the searching new drug to treat hyperglycemia from plant source.

Keywords: *Sesbania sesban*, methanol extract, hypolipedemic, hypoglycemic property.

D-312

Evaluation of Anthelmintic Activity of Ethanol Fruit Extract of *Ficus Pumila Linn*

Ragavaprasath C, Thamotharan G, Suresh V and Senthilkumar N.
Deparment of Pharmacology, JKKMMRF's Annai JKK Sampoorani Ammal College of Pharmacy, B. Komarapalayam – 638183, Tamil Nadu, India
ragavaprasath1996@gamil.com

Abstract:

Modern anthelmintic has limited effective control of parasites due to number of side effect and development of resistant in helminthes. This renewed the interest on screening the medicinal plant for their anthelmintic activity and the present study was deign to investigate the anthelmintic activity of plant extracts of an Indian Medicinal plant ***Ficus pumila linn*** The four concentration (20,40and60mg/ml) of ethanol fruit extract were investigate for anthelmintic activity on Indian adult earthworms (Pheretima posthuma) due to its anatomical and physiological resemblance with intestinal roundworm parasites of human beings The potency of the various concentrations of extracts was evaluated by time taken for paralysis and death of earthworms after treatment with the test drugs and compared with the reference drug Albendazole(20,40,60mg/ml). The ethanol fruit extract of plant ***Ficus pumila linn*** at higher doses of 60 mg/ml has shown significant

activity was comparable to the reference drug. The results suggest that fruit possess anthelmintic activity and the plant is worthwhile for further investigation to isolate and identify the constituents responsible for the activity.

Keywords: ***Ficus pumila linn***, Anthelmintic, Pheretima posthuma, albendazole, ethanol fruit extract.

D-313

Evaluation of Anticonvulsant Activity of *Pavetta Tomentosa* Linn. In Mes and Ptz Induced Epilepsy

Bibhu Prasad Moharana and Haragouri Mishra
Jeypore College of Pharmacy, Rondapalli, Jeypore, Odisha, India
kunasrk@gmail.com

Abstract:

Disease of central nervous system is appearing as a major threat in the future because of increasing mental stress, strain and work, which are essential in the developing world. Herbal drugs which are having diversified uses are always an alternative option to the synthetic drugs which are well known for their adverse effects in which the need is not met. Epileptic seizures are caused by parts of the brain eliciting abnormal electrical activity. In persons with epilepsy, there is an imbalance between excitatory and inhibitory neurotransmitters. Ethanolic extract of *Pavetta tomentosa* linn (200mg/kg & 400mg/kg p.o.) was studied for anticonvulsant activity on maximal electroshockinduced seizures and pentylenetetrazole induced seizures in mice. EEPT 200 mg/kg and 400 mg/kg have shown 65.20% and 70.29% protection respectively against MES induced seizures and 60.77% and 81.5% protection respectively against PTZ induced seizures. It is found that treatment with EEPT on mice significantly reduces tonic hind limb extensor stage in MES induced epilepsy & a significant increase in onset of clonic convulsions in PTZ induced epilepsy.

Keywords: Anticonvulsant, *Pavetta tomentosa* linn, MES, PTZ, Seizure, Mice.

D-314

To Predict the Anti- Alzheimer Activities of Phytochemicals By Using PASS Software

Rakesh Kumar, Rajan Kumar, Neha Sharma and Navneet Khurana
School of Pharmaceutical Sciences, Lovely Professional University, Phagwara, Punjab, India
csrakesh9900@gmail.com

Abstract:

Alzheimer's disease (AD) is the most common neurodegenerative disorder in modern society. The main characteristic features of Alzheimer's disease (AD) include the formation of extracellular protein deposits in the brain that consist predominantly of β-amyloid aggregation protein, neuro-fibrillary tangles in the intracellular compartments, disturbances in calcium homeostasis, and degeneration or loss of synapses and neurons. The present therapy of medicine doesn't have treatment to heal the underline cause of Alzheimer's disease (AD). Phytochemicals are used in various traditional medicines to ameliorate and prevent neurodegeneration in Alzheimer's disease (AD). In various *In vivo* studies, several phytochemicals have been reported to show Alzheimer's disease activity. Prediction of Activity Spectra of Substances (PASS) software and canonical Simplified Molecular Input Line Entry System (SMILES) are the useful tool. The PASS software allows predicting the pharmacological activity (Pa) on behalf of the canonical SMILES of the substance. Canonical SMILES of the substance is the chemical structure, obtained by using PubChem website. In this study, we tried to observe the information of predicted anti-alzheimer activity of various phytochemicals by PASS software.

Keywords: Alzheimer's disease; β-amyloid; Phytochemicals; PASS.

D-315

Evaluation of Efficacy and Safety of Silodosin in Comparison to Tamsulosin in Patients with Benign Prostatic Hyperplasia-A Randomized Open-Label Study

Rohini Gupta, Pavan Malhotra and Apoorva Malhotra
Deptt. of Pharmacology & Therapeutics, Government Medical College, Jammu, J&K, India
rohinigupta299@ymail.com

Abstract:

Background: Benign Prostatic Hyperplasia

(BPH) is one of the most common conditions affecting quality of life in older men through bothersome lower urinary tract symptoms (LUTS). Selective α_1-adrenergic antagonists are now first-line drugs in the medical management of BPH. Because of their greater uroselectivity and minimal hemodynamic effects, tamsulosin and silodosin are generally preferred in the symptomatic therapy of BPH. **Objective:** To compare the efficacy and safety of Silodosin in comparison to Tamsulosin in symptomatic benign hyperplasia of prostate (BPH). **Materials and Methods:** A comparative randomized open-label trial of 6 month duration was conducted on patients attending the Surgery out-patient department of ASCOMS&H, Sidhra, Jammu. Patients were registered after taking written informed consent and were enrolled in the study after fulfilling the inclusion and exclusion criteria. Patients were randomized to two groups to receive either tamsulosin 0.4 mg controlled release capsule or silodosin 8 mg once daily capsule after dinner for 12 weeks. The treatment response was monitored at 2, 4, and 12 weeks. Uroflowmetric parameters and American Urological Association Symptom Score (AUASS) were recorded at 2, 4 and 12 weeks, whereas ultrasound was reassessed only at 12 weeks. Vital signs (Pulse and Blood Pressure) and treatment emergent adverse events were recorded at all the visits. **Results:** The study was conducted on a total of 44 patients, 22 patients in tamsulosin group (Group I) and 22 patients in silodosin group (Group II). Final AUA SS at 12-week was significantly less than baseline for both groups ($p<0.05$).However, groups remained comparable in terms of AUASS at all visits. A statistically significant improvement in Maximum flow rate (Qmax) was seen with tamsulosin and sildosin from baseline at 12 weeks ($p<0.05$). However, the intergroup differences in Qmax were not statistically significant ($p>0.05$). Prostate volume however, did not change in either of the groups as well as in intergroup comparison ($p>0.05$). Both treatments were well-tolerated. The commonest adverse drug effects encountered in the silodosin group was Dyspepsia and Abnormal ejaculation whereas Headache and postural hypotension were more commonly seen in the tamsulosin group. However, when both the groups were compared, the difference between the two was observed to be non-significant ($p>0.05$). **Conclusion :** Tamsulosin and silodosin showed similar efficacy in symptomatic management of BPH with good tolerability, acceptability, and minimum hemodynamic adverse effects.

Keywords: α1-blockers, benign prostatic hyperplasia, silodosin, tamsulosin.

D-316

Knowledge, Attitude and Practice of Hand Hygiene among Pharmacy Students: A Questionnaire-Based Survey

Shakshi Sharma, Ruchika Sharma and Anoop Kumar
Department of Pharmacology, Indo-Soviet Friendship Pharmacy College (ISFCP), Moga, Punjab, India
ss2861685@gmail.com

Abstract:

Introduction: Hand hygiene plays an important role in prevention of various diseases. In India, hand hygiene is practiced as a custom and taught at school, community and Pharmacy levels to reduce the burden of diseases but still burden of infectious diseases is increasing day by day. This may happen due to lack of attitude and practice of hand hygienic conditions. Thus, this study was undertaken to assess the Knowledge, Attitude and Practice of Hand Hygiene among Pharmacy students of ISF college of Pharmacy, Moga. **Material and Methods:** A questionnaire based survey was conducted in ISF college of Pharmacy, Moga, Punjab, covering all undergraduate, graduate and postgraduate students to assess their Knowledge, Attitude and Practice regarding Hand Hygienic conditions. **Results and Discussion:** There were 10 different parameters/ data points for which the data was collected from 200 students in ISF College of Pharmacy, Moga, Punjab. Descriptive statistics were used for analysis of data. **Conclusion:** Majority of students has good knowledge regarding hand hygienic techniques but attitude and practice is still lacking which need to be increase to prevent from various infectious diseases.

Keywords: Knowledge; Attitude; Practice; Hand Hygiene.

D-317

Anti-Atherosclerotic Potential of *Mesobuthus Tumulus* Scorpion Venom

Pramila Yelmar, Renuka Bhoi, Sonali Nipate and Pravin Chaudhari
Department of Pharmacology, P. E. S's Modern College of Pharmacy, Nigdi, Pune - 411044, Maharashtra, India
pramilayelmar@gmail.com

Abstract:

Atherosclerosis known as chronic and progressive disease of muscular arteries comprises formation of calcified plaque and hardens the arteries through different etiopathogenesis. Venom from animal kingdom is proven for many pharmacological and biological activities which can be used clinically. Scorpion venom (SV) consist of complex, aqueous mixture containing mucus, inorganic salts, low molecular weight organic molecules and many small basic proteins, namely neurotoxic peptides serotonin and enzyme inhibitors are also present in the venom. The objective behind the study was to evaluate *Mesobuthus tumulus* scorpion venom for thrombolytic, fibrinolytic and antiatherosclerotic activity. It has been reported that SV showed inhibition of platelet aggregation induced by thrombin and ADP and also promote PGI_2/TXA_2 ratio, hence proved to have antithrombotic activity. Fibrinolytic property of SV was evaluated by In-vitro blood clot dissolving method and shown to decreased stain area of blood stained cloth as compared to control. Thrombolytic effect of SV was evaluated by UV spectroscopic bioassay method. To evaluate antihypertriglyceridaemic and hypolipidaemic activity of SV, protein enriched diet with 20% fructose induced hypertriglyceridaemia and 25% fructose induced hyperlpidaemia model was used. It was found from the study that SV showed fibrinolytic, thrombolytic and hypolipidemic activity which are supportive for atherosclerotic treatment.

D-318

Comparative Study of Clomiphene Citrate and Chlorophytum borivilianum (Safed Musli Seed) Extract In Evaluation Of The Drug To Increase Sperm Count in Cyclophosphamide-Induced Oligospermia In Rats.

Thomson Alex, Shaily Chaudhary and Neelesh Malviya
Smriti College of Pharmaceutical Education, (SCOPE) Indore, 4/1 Pipliya Kumar Kakad, Dewas Naka, MR-11, Indore – 452001, Madhya Pradesh, India
thomsonlx07@gmail.com.

Abstract:

The main objective of this study was to compare the drug Clomiphene citrate and extract of Chlorophytum borivilianum in the increase of sperm count in Cyclophosphamide-Induced Oligospermia in rat. Chlorophytum borivilianum extract was obtained by performing cold maceration extraction of dried roots of C. borivilianum. Eighteen male Wistar rats were randomly selected and divide equally into three groups i.e. Control (water), Standard (clomiphene citrate) and Test (Chlorophytum borivilianum extract) fed with a standard pellet diet and water *ad libitum* . Oligospermia was induced in the rats administering a single dose of Cyclophosphamide(CP), 100 mg/kg body weight p.o. Control group was administered with water, the standard group was administered orally with clomiphene citrate(1mg/kg/day) and test group was administered orally with C. borivilianum extract (275mg/kg/day) for 17 consecutive days. After 17 days of experimental period, rats were euthanized and the testies along with epididymis were operated out to obtain the sperms. Sperm counting was done by using haemocytometer, Neubauer chamber and light microscope with 100X magnification. Decrease in sperm count due to administration of CP was reversed in the test and

standard group. But the sperm count in the test group was much high then the standard group. Conclusion- The study indicates that extract of C. borivilianum is more potent than Clomiphene citrate in the treatment of oligospermia induced by CP in rat.

Keywords: Oligospermia, Sperm count, Chlorophytum borivilianum, Cyclophosphamide, Clomiphene citrate.

D-319

Neuroprotection by *Cordia dichotoma* Extract in Mouse Model of Stroke

Harsimran Singh, Satvir Singh, Devinder Kaur and Nitin Bansal
[1] Department of Pharmacology, ASBASJSM College of Pharmacy, Bela, Ropar -140111, Punjab, India
harsimranjattana@gmail.com

Abstract:

The present study aims to explore the neuroprotective role of methanol extract of Cordia dichotoma (MCD) in the cerebral ischemia-reperfusion induced injury in mice. Swiss Albino mice (either sex), weighing between 18-30 gm were used in this study. Animals were divided in 6 groups (n= 6-8). Bilateral carotid artery occlusion for 10 min followed by reperfusion for 24 h was employed in the present study to produce ischemia and reperfusion-induced cerebral injury in mice. Short-term memory was evaluated using the elevated plus maze test and rotarod apparatus was used to assess motor incoordination. MCD was administered in 3 doses (125, 250 and 500 mg/kg; p.o.) to mice for 7 successive days daily before surgery. Edaravone (3 mg/kg, i.p.) was used as standard drug. Animals were sacrificed after all behavioral parameters and 24 hr after surgery for biochemical estimations (TBARS, GSH, SOD, catalase and total brain protein estimations). Ischemia-Reperfusion-injury induces decrease in motor-co-ordination and memory of mice. Further ischemic mice showed higher brain TBARS and lowered GSH, SOD and catalase levels. MCD (500 mg/kg/p.o.) administration significantly attenuated ($p<0.05$) the behavioral and biochemical alterations produced by ischemia-reperfusion-Injury. Thus, MCD may prove to be useful remedy for the management of cerebral ischemia owing to its potent antioxidant properties.

D-320

Cystatin C as a Biomarker for Cardiovascular Risk Assessment in Metabolic Syndrome Patients

Kiranjeet Kaur and Pawan Krishan
Chitkara College of Pharmacy, Chitkara University, Rajpura, Punjab, India
kiranjeetthind@gmai.com

Abstract:

Metabolic syndrome (MS) is associated with cardiovascular risks and is cause of morbidity and mortality. Cystatin C was found to be positively correlated with low grade inflammation, vascular damage and related risks and thus could be used to detect cardiovascular complications. The clinical utility of Cystatin C for predicting cardiovascular risks is yet to be established. Objective of study was to estimate the serum levels of Cystatin C, C reactive protein, Nitric Oxide metabolites in patients with MS and further to correlate with each other & conventional cardiovascular assessment biomarkers. Cystatin C & U-CRP in human serum samples was estimated by using Quantitative Turbidimetric Immunoassay where NOx by griess reaction. Conventional cardiovascular markers including SBP, DBP, Fasting Blood Sugar & TG were also estimated. Statistical analysis (Person's Correlation & Multiple linear regression)was done.We found significant correlation ($p<0.05$) between Cystatin C & Conventional CVD biomarkers ; CRP & NOx; CRP and conventional CVD biomarkers. This highlights the role of Cystatin C as early clinical diagnostic biomarker of cardiovascular dysfunction in MS patients.

Keywords: Cystatin C, Cardiovascular diseases, C-reactive protein.

D-321

Case Presentation on Gilberts Syndrome

G. Ram Charan and Uma Rajeswari B
Bharat Institute of Technology, Hyderabad - 500001, Telangana, India
ramcharanguniganti@gmail.com

Abstract:

Background: Gilbert's syndrome is a common harmless liver condition characterized by periods of elevated levels of a toxic substance called bilirubin in the blood (hyperbilirubinemia). If people with this condition have episodes of hyperbilirubinemia, these episodes are generally mild and typically occur when the body is under stress, for instance because of dehydration, prolonged periods without food (fasting), illness, vigorous exercise, or menstruation. However, approximately 30 percent of people with Gilbert syndrome have no signs or symptoms of the condition and are discovered only when routine blood tests reveal elevated unconjugated bilirubin levels. **Case presentation**: A 50- years old male patient was admitted in the hospital with complaints of chest pain, excessive thirst, stress and severe headache and was diagnosed with elevated blood pressure (hypertention) and sugar (diabetes mellitus) levels. Even after taking medication his urine appears pale yellow colour ,cloudy and with presence of sugar, pus and epithelial cells. After 4 days patient was examined with elevated levels of indirect bilurubin with no hepatic symptoms which is symptom of gilberts syndrome. So it was under stood that type II diabetes mellitus and hypertension became the factors to cause gilberts syndrome. **Conclusion**: Gilbert's syndrome, a rare disease has no treatment as such but can be managed by eating low calorie diet or fasting. Regular monitoring of bilurubin is required.

Keywords: Gilbert's syndrome, Hyperbilirubinemia, diabetes mellitus, hypertension.

D-322

Studies on the role of *Berberine* in Incretin (Gastrointestinal hormone) Induced Insulin Release in STZ Diabetic Rats

Eswar Kumar Kilari

A.U. College of Pharmaceutical Sciences, Andhra University, Visakhapatnam, Andhra Pradesh, India

ekilari@rediffmail.com

Abstract:

Berberine is a bioactive compound extracted majorly from *Beriberis aristata,* belongs to the family *Berberidaceae*. Traditionally it was used in the treatment various ailments including diabetes. The aim of the present study was to determine the effect of berberine (BBR) on antihyperglycemia, *in vitro* and *in vivo* antioxidant, hepatic and lipid biomarkers and incretins expression in streptozotocin induced diabetic rats. The BBR showed significant antioxidant activity against hydroxyl, hydrogen peroxide, nitric oxide, ferric and DPPH radicals comparing with standard ascorbic acid. The BBR (50 and 100 mg/kg body weight) was administered orally once a day for 15 days in STZ induced diabetic rats. A significant decrease in insulin levels, increase in blood glucose, glycosylated hemoglobin (HbA1c), altered Lipid profile (Total cholesterol, triglycerides, HDL, LDL and VLDL) and elevated hepatic serum biomarker levels (AST, ALT, ALP, total & direct bilirubin) in STZ induced diabetic rats. The BBR shown to increase the insulin levels and decreased glucose levels, normalize the lipid and hepatic biomarkers during 15 days treatment period in treatments groups in a dose dependent manner. Decreased levels of *in vivo* antioxidant enzymes SOD, CAT, GSH and GPx in both pancreas and ileum, increased protein carbonyls (PCO), decreased GLP-1R in ileum and increase DPP4 expression in liver in STZ induced diabetic rats. Treatment with BBR shown to elevate the pancreatic and intestinal antioxidant enzymes, decreased PCO and increased expression of GLP-1R in ileum and decreased expression of DPP 4 in liver in STZ induced diabetic rats.

Keywords: *Berberine,* Incretins, Streptozotocin, Diabetes mellitus.

D-323

Pharmacological Study and Evaluation of Analgesis Property of Dried Rhizomes of *Azima Teracantha*

Manasi Khadanga, Pratit Kanchan Sahu, Sujit Kumar Martha and Bibhu Prasad Maharana

Department of Pharmacology, Jeypore College of Pharmacy, Rondapalli, Jeypore (K) - 764002, Odisha, India

mmansikhadenga@gmail.com

Abstract:

Analgesics play an essential role in reliving the unpleasant sensory experience with actual

or potential tissue damage. In this aspects *AZIMA TERACANTHA* is one such plant with powered medicinal properties. In the present study, we investigated the analgesic potential of ethanolic extracts of *AZIMATERACANTHA* rhizomes by using Hot plate method & Formalin induced paw licking method. The ethanolic extracts (300 mg/kg) of *AZIMA TERACANTHA* rhizomes significantly produced analgesic activity as that of Ibuprofen. Thus, our present study results clearly demonstrate that ethanolic extract of *AZIMA TERACANTHA* rhizomes possesses potent analgesic effect and supports the traditional uses of the plant.

D-324

Aqueous Extracts of the Leaves of *Sesbania sesban* Reducesdevelopment of Diabetic Nephropathy in Streptozotocin Induced Diabetic Rats

R. B. Pandhare, B. Sangameswaran and V.K. Deshmukh
Dept. of Pharmacology, MES's College of Pharmacy, Sonai, Newasa, Ahmednagar – 414105, Maharashtra, India
ramdaspandhare83@rediffmail.com

Abstract:

Sesbania sesban (L) Merr. belongs to the family Fabaceae. The pods and leaves contain campesterol and beta-sitosterol. Flowers contain cyanidin and delphinidinglucosides. Pollen and pollen tubes contain alpha-ketoglutaric, oxaloacetic and pyruvic acids.Leaves are useful in helminthiasis, diarrhea, diabetes, colic and skin diseases. The objective of present study was to investigate the renal protective effect of *Sesbania sesban* leaves extract (SSLAE), in streptozotocin (STZ)-induced diabetic rats. SSLAE (250 and 500 mg/kg per day) was given to diabetic rats for 13 weeks. Blood glucose, Serum parameters like albumin, Creatinine, total protein, urea, glycated haemoglobin (HbA1c) and urine parameters like urine protein and albumin were estimated. After 13 weeks of treatment in STZ-induced diabetic rats, severe hyperglycemia was developed, with marked increase in proteinuria and albuminuria. However, SSLAE treatment reduced proteinuria, albuminuria and HbA_1c deposition. Histopathology studies of kidneys of STZinduced diabetic rats revealed mild increase in mesangial cells and matrix of glomeruli with hyaline thickening of some arteriole wall, resulting from selective albuminuria and proteinuria. These changes are inhibited by SSLAE and glibenclamide, thusresults suggested that SSLAE has reduced development of diabetic nephropathy in streptozotocin-induced diabetic rats and could be beneficial in preventing the progression of diabetic nephropathy.

Keywords: HbA_1c, Albuminuria, proteinuria, Diabetic nephropathy, *Sesbania sesban*.

D-325

Agmatine Diminishes Behavioral and Endocrine Alterations in a Rat Model of Post-Traumatic Stress Disorder

Sheetal Parse, Mayur Kale, Brijesh Taksande and Milind Umekar
Smt. Kishoritai Bhoyar College of Pharmacy, Kamptee, Nagpur, Maharashtra, India
sheetaiparse8000@gmail.com

Abstract:

PTSD was induced by single prolonged stress. The conditioned and sensitized fear responses were evaluated by the alteration of freezing behavior in fear conditioning apparatus. Agmatine 40 µg/rat icv significantly normalized altered freezing time during conditioned and sensitized fear response in single prolonged stress animal compared with agmatine (10, 20 and 80 µg/rat icv) and SPS (aCSF) animal. Assessment of imidazoline receptors in this effect was carried further. Combination of subeffective dose of agmatine (20 µg/rat icv) with imidazoline (I2) receptor agonist (2 BFI, 100 nmole/rat icv) showed significant alteration in freezing time in comparision with combination of subeffective dose of agmatine (80 µg/rat icv) with imidazoline (I1) receptor agonist (Moxonidine, 20 nmole/rat icv) and effective dose of agmatine (40 µg/rat icv). These findings clearly implicates the involvement of agmatine and its interaction with I2 imidazoline receptors in suppression of conditioned and sensitized fear response and thereby suggesting it as a novel therapeutic approach for PTSD.

Keywords: Post traumatic stress disorder,

Conditioned fear response, Sensitized fear response, Fear, Single prolonged stress, Fear conditioning apparatus, Agmatine, Imidazoline.

D-326

A Review on Natural Products for the Prevention of Oxidative Stress and Inflammation in Neurodegenerative Disorder

Khushboo Gupta
Royal College of Pharmacy, Raipur – 492099, Chhattisgarh, India
guptakhushboo313@gmail.com

Abstract:

Neurodegeneration is the progressive loss of structural and function of neurons, including death of neurons. Neuroinflammation and mitochondrial dysfunction are common features of chronic neurodegenerative of the central nervous system. Both condition can lead to increase oxidative stress by excessive release of harmful reactive oxygen species (ROS). Neurodegenerative disease like Parkinson , Alzheimer and Huntington occurs as a result of free radical generation which finally leads to oxidative stress.There are many other reasons for these disorder but this review focus on oxidative stress and inflammation. The brain is exposed throughout life to excitatory amino acids (such as glutamate)whose metabolism produce the (ROS) there by promoting excitotoxicity.Currently many studies devote to exploring and utilizing natural antioxidant to remove excessive free radical in human body and also antioxidant in food that are benefit for the prevention and treatment of disease. Various natural antioxidant in food that helps to prevent the neurodegeneration and inflammation are Xanthone , Flavonoid , Lycopene , Green tea polyphenols , Anthocyanin and many vitamins .Apart from this we also know that most of the drugs donot cross the Blood Brain Barrier therefore CNS drug design or structure that enables Blood Brain Barrier transport. It is also important to determine whether natural antioxidant can be used to prophylaticsin order to slow down the progression of neurodegenerative disease.

Keywords: Reactive oxygen species (ROS), Natural antioxidant, mitochondrial dysfunction.

D-327

Beneficial Effect of Rice Bran Extract Against 3-Nitropropionic Acid Induced Animal Model of Huntington's Disease

Shweta Thakur, Navneet Kaur and Puneet Kumar
Deparment of Pharmaceutical Sciences and Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda, Punjab, India
shwetat2411@gmail.com

Abstract:

The present study has been designed to explore the effect of rice bran extract against 3-NP induced neurotoxicity in rats.3-NP (10 mg/kg, i.p) was administered systemically for 21 days. Hexane and ethanol extract of rice bran were prepared using Soxhlation. Hexane (250 mg/kg) and ethanol extract (250 mg/kg) were administered per orally for 21 days in 3-NP treated groups. Behavioral parameters (body weight, grip strength, motor coordination, gait abnormalities, locomotion) were conducted on 7th, 14th and 21stday. Animals were sacrificed on 22nd day and striatum was removed for biochemical (LPO, GSH and catalase), mitochondrial dysfunction (Complex II), neuroinflammatory (TNF-α, IL-1β, IL-6) and neurochemical (DA, NA, 5-HT and their metabolites) estimation.This study demonstrates significant alteration in behavioral parameters, oxidative burden (increased lipid peroxidation, nitrite concentration and decreased GSH), decreased Complex II enzyme activity, pro-inflammatory mediators (increased TNF-α, IL-1β and IL-6) and neurochemicals (decreased DA, NA, 5-HT, 5-HIAA and increased DOPAC and HVA levels) in 3-NP treated animals. Administration of hexane and ethanol extract prevented the behavioral, biochemical, neuroinflammatory and neurochemical alterations. The outcomes of present study suggest that rice bran extract is beneficial and might emerge as an adjuvant or prophylactic therapy for treatment of HD like symptoms.

Keywords: Huntington's chorea, 3-Nitropropionic acid, Oxidative stress, Rice bran, mitochondrial dysfunction, basal ganglia.

D-328

Antihypertensive Activity of Amuri from *Musa Paradisiaca*

Vandana Narvariya, Ankit Sharma, K.S. Rathor and S.S. Sisodia
Department of Pharmacology, Bhupal Nobles' College of Pharmacy, Udaipur, Rajasthan, India
vandananarvariya2609@gmail.com

Abstract:

Amuri is a kayakurpam preparation in siddha system of medicine for treatment of many diseases. In the present investigation, an attempt has been to study the antihypertensive activity can be assayed by various animal models. The drug was screened for all possible mechanisms that alter blood pressure like diuretic activity in Albino rats,antianxiety effect in mice. Antihypertensive activity can be assayed by various animal models like renovascular induced hypertension. Amuri has some diuretic activity at a dose level of 8ml and 10ml/kg and was comparable to hydrochlorothiazide. Amuri was also found to have positive inotropic and negative chronotropic effect similar to digoxin on isolated frog heart.

Keywords: Amuri, Kayakarpam, Musa, Paradisiaca, Renovascular Induced Hypertension.

D-329

Systemic Evaluation of Anti Compulsive Activity of Agomelatine and Venlaflaxine for the Reduction of Marble Burying Behaviour

Shaily Chaudhary and Akash Yadav
Smriti College of Pharmaceutical Education (SCOPE), 4/1 Pipliya Kumar Kakad, MR-11, Dewas Naka, Indore - 452010, Madhya Pradesh, India
s.shailychaudhary@gmail.com

Abstract:

Obsessive Compulsive Disorder (OCD) is a debilitating disease which is characterized by persistent thoughts (obsessions), which are associated with seemingly purposeful ritualistic behaviour (compulsions). Agomelatine, a melatonergic analogue drug, which potently activates human melatonin 1 and 2 (MT1 and MT2) receptors and selectively antagonizes the action of serotonin at 5HT2c receptor, was recently approved for the treatment of major depression. The effect of acute and chronic administration of agomelatine on the marble-burying behaviour (MBB) of mice, which is reported to be an index of anticompulsive behaviour, was performed. Results indicated a potent and dose dependent influence of agomelatine on MBB of mice which was maintained after its chronic administration. Treatment with PCPA was not able to inhibit the effect of agomelatine on marble-burying behaviour. In conclusion, agomelatine administration reduces the MBB in mice, which should be explored for its potential use in the treatment of OCD. Medications as treatment include selective serotonin reuptake inhibitors (SSRIs) and the tricyclic antidepressants, in particular clomipramine. Research suggests that anxiety and stress drive the majority of compulsions in OCD, and individuals with the disarray participate in ritualistic behaviours in an effort to alleviate the anguish of obsessive thoughts, visions, or emotions.

Keywords: Agomelatine, Obsessive compulsive disorder (OCD), Marble-burying behaviour (MBB), melatonin.

D-330

Protective Effect of Hemin on Experimental Chronic Fatigue Syndrome in Mice: Possible Role of Neurotransmitters

Gazal Kamboj and Puneet Kumar Bansal
Department of Pharmaceutical Sciences & Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda - 151001, Punjab, India
punnubansal79@gmail.com

Abstract:

Chronic fatigue syndrome (CFS) is an illness characterized by persistent and relapsing fatigue, often characterized by long-lasting and debilitating fatigue, myalgia, and impairment of neuro-cognitive functions along with other common symptoms. The present study was intended to explore the protective effect of hemin on experimental chronic fatigue stress in mice. Male albino mice (20–30 g) were subjected to swim stress induced fatigue in a force swimming test apparatus. Hemin (5 and 10 mg/kg, i.p) were administered daily for 21 days, after animals being subjected to force swimming test session of 10 min. Various behavioral tests (immobility period, locomotor activity, elevated plus maze test, mirror chamber and grip strength), biochemical parameters (lipid peroxidation, nitrite and glutathione levels), mitochondrial complex dysfunctions (complex

I & II) and neurotransmitters estimation were subsequently assessed. Animals exposed to 10 min test session of forced swimming for 21 days showed a significant increase in immobility period indicating fatigue like behavior. Treatment with hemin (5 and 10 mg/kg) for 21 days significantly improved the decreased immobility period, increased locomotor activity, anxiety like behavior, oxidative defense, mitochondrial complex dysfunction and neurotransmitters level in brain. The present study highlights the protective role of hemin against chronic fatigue induced behavioral, biochemical and neurotransmitters alteration.

Keywords: Force swimming test (FST), Chronic fatigue syndrome, Anxiety, Hemin, Oxidative stress, Mitochondrial complexes, Neurotransmitters.

D-331

Association of Apo E 4 and Mild Cognitive Impairment (MCI) in Alzheimer's Disease (AD)

Nidhi Sharma, Ruchika Sharma and Anoop Kumar
Department of Pharmacology, Indo-Soviet Friendship Pharmacy College (ISFCP), Moga, Punjab, India
nidhi13995@gmail.com

Abstract:

Introduction: ApoE4 gene and Mild cognitive impairment (MCI) is the strongest known risk factor for AD. The identification of subjects with mild cognitive impairment (MCI) as well as ApoE4 gene is at high risk for Alzheimer's disease (AD) which is important for prognosis and early intervention. So, in the present investigation, we tried to find out the association of Apo E 4 and MCI in AD. **Material and Methods:** 84 articles have been extracted from different sources literature such as Pub Med, Sci-Hub, Springer etc. After inclusion and exclusion criteria, finally 34 articles have been analyzed to fulfill the objective of current study. **Results and Discussion:** Pearson's coefficient is calculated with the help of stastical analysis software (SAS) and was found to be 0.782, which means that there is a moderately strong linear relationship between the two variables (AD and MCI PLUS APOe4). **Conclusion:** There is association between APoe4+ Mild Cognitive Impairment (MCI) and AD which means that a person having APOe4 allele with MCI in early stage have more risk of getting Alzheimer Disease. So, if we can identify traits of Mild Cognitive Impairment (MCI) and APOe4 , we can start the treatment of Alzheimer Disease in early stages.

Keywords: Mild cognitive impairment (MCI), Alzheimer's disease (AD), ApoE4 gene.

D-332

Antibiotic Resistance Asthe Most Serious Health Threat Worldwide

Sabbir Ali Ansari

Chitkara College of pharmacy, Chitkara University, Rajpura - 140401, Punjab, India

sabbiraliansari@gmail.com

Abstract:

Increasing of antibacterial resistance in the bacterial pathogens is observed as a major health threat affecting humans all over the world while the new antibiotic development is very less. The use of antibiotics in excessive and irrationally is the main reason for its ineffectiveness and acquire bacterial and multi drug resistance infections. It is estimated that about 2 million people are infected in USA with multidrug resistant bacteria and out of these, about 23,000 die per year. In Europe, is about 25,000 annually, in Asia and other developing countries like India has the highest antibiotic resistance rates.Considering the increasing rate of antibiotic resistance it is estimated that MDR pathogen can kill about 10 million people per year by 2050.And healthcare facilities is being more critical day by day. After the decades of antibiotic use, bacterial infections that were easily treated are becoming hard to treat. Surgical and immunosuppressive treatments depend on antibiotic prophylaxis and infection

complications. Antibiotic resistance, therefore, poses a serious threat for the treatment of disease and resulting in high morbidity and mortality rate. Areas of particular concern are vancomycin, fluoroquinolones, MRSA and multiresistantancecarbapenemase-producing Gram-negative organisms, gonorrhoea and multidrug-resistant tuberculosis. Therefore it is an urgent need to develop and strengthen antibiotic policy, standard treatment guidelines, national plan for containment of antimicrobial resistance and educating patients and the public is essential to fight against the antimicrobial resistance.

Keywords: Antibiotic resistance; multi drug resistance TB; gonorrhoea; carbapenem; vancomycin.

D-333

Cardio Protective Effect of *Machilus macrantha* Nees

Pranjal Gujarathi, Shrikant Joshi, Malleshappa Noolvi and Bavin Vyas
Shree Dhanvantary Pharmacy College, Surat, Gujarat, India
pranjalgujarathi19@gmail.com

Abstract:

The present study was aim to assess the cardio protective effect of *Machilus macrantha* Nees. (Lauracea) roots on myocardial integrity. The current study investigated the effect of *M.macrantha* Roots by assessing biochemical, histopathological and electrocardiographical changes in Isoproterenol (ISO) and Doxorubicin (DOX) induced cardiomyopathy. Wistar male albino rats were randomly divided and treated with extract of *M.macrantha* roots (100 and 200 mg/kg P.O.) or 1% SCMC for 12 days with concurrent administration of ISO (85 mg/kg S.C.) on 10th and 11th days, at 24 h interval and another groups were challenged with DOXO (40 mg/kg I.P.) on 10th single dose. ISO and DOXO control animals significantly ($p<0.05$) decrease antioxidants - superoxide dismutase (SOD), catalase(CAT), glutathione (GSH) as well as increased cardiac injury marker enzymes in serum-creatine phosphokinase-MB and lactate dehydrogenase and induced lipid peroxidation when compared to normal. While the pretreated groups of *M.macrantha* 100 mg/kg and 200 mg/kg dose showed dose dependent increased in SOD, CAT, GSH and significant ($p<0.05$) deduction in serum CK-MB,LDH and LPO levels. The microanatomical and electrocardiographical alteration also shows observable differences in normal group Vs model control of isoprenaline and doxorubicin along with model control Vs pretreated groups with *M.macrantha* for Isoprenaline and Doxorubicin models of cardiomyopathy.

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Predictors of Endothelial Dysfunction in Psoriatic Arthritis

Nidhi Garg, Pawan Krishan and Ashit Syngle
Assoc. Professor, Chitkara College of Pharmacy, Chitkara University, Rajpura -140401, Punjab, India
nidhi.garg@chitkara.edu.in

Abstract:

Cardiovascular disease (CVD) is one of the leading causes of death in Psoriatic arthritis (PsA). Pathogenesis of accelerated atherosclerosis in PsA remains to be elucidated. Endothelial dysfunction (ED) often precedes manifest atherosclerosis. It is possible that immune mediated inflammatory mechanisms underlying PsA may be crucial for endothelial dysfunction, atherosclerosis and CVD development. However, the relationship between the cytokines, the adhesion molecules, EPC population and FMD in PsA has not yet been studied. Hence, we assessed FMD, a marker of endothelial function, and its association with markers of inflammation and vascular function in PsA. We performed a cross-sectional study of 18 PsA patients compared to 18 controls matched for age and sex. FMD assessed by AngioDefender, EPCs quantified by Flow Cytometry. Inflammatory measures included DAS28, DAPSA. We also assayed markers of inflammation- CRP, ESR, proinflammatory cytokines (IL-1, IL-6 and TNF-α) and endothelial function- Lipids, ICAM-1, VCAM-1 and EPCs. FMD is significantly lower in PsA patients

compared to controls. Compared with controls, PsA patients had significantly increased concentrations of ESR, CRP, TNF-α, IL-6, ICAM-1 and VCAM-1 whereas EPCs% and HDL cholesterol are significantly reduced in PsA compared to controls ($p<0.05$). In PsA, FMD positively correlated with EPCs and HDL and inversely correlated with IL-6, CRP and ICAM-1 ($p<0.05$). The results suggests that, reduced FMD, indicating endothelial dysfunction which is related to markers of inflammation (CRP, IL-6) and endothelial function (ICAM-1 and EPCs), involved in the development of endothelial dysfunction in PsA. Therapy that effectively suppresses inflammation and stimulation of EPCs may be beneficial to prevent and manage endothelial dysfunction related to PsA.

Keywords: Adhesion molecules, Endothelial dysfunction, Endothelial Progenitor Cells, Inflammatory cytokines, Psoriatic Arthritis.

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Modulation of PI3/AKT And Phosphorylation Of GSK-3β : A Novel Approach In Treatment Of MI

Sandip S Chaudhari, Chandragouda R. Patil, Sameer N. Goyal and Malleshappa Noolvi
Department of Pharmacology, Shree Dhanvantary Pharmacy College Kim Surat, Jalgaon, Maharashtra, India
sandipchaudhari1234@gmail.com

Abstract:

To evaluate the effect of eplerenone on myocardial infarcted rats via modulation of the PI3K/Akt pathway and its downstream regulator GSK-3β. We investigated whether eplerenone improved the pathophysiology of myocardial infarction in diabetes by considering a range of indicators, like estimations of hemodynamic, histopathological changes as well as apoptosis and PI3k/Akt activity by western blot analysis. Diabetes was induced by administration of single dose of streptozotocin (55mg/kg i.p). Diabetic rats received either eplerenone or PI3k/Akt antagonist (wortmanin, 1 mg/kg/day i.p.) or in combination for 14 days with concurrent administration of isoproterenol (100mg/kg s.c) on 13th and 14th day. Isoproterenol prompted cardiotoxicity was demonstrated by decrease in hemodynamic function, maximal positive rate of developed left ventricular pressure (+LVdP/dtmax), maximal negative rate of developed left ventricular pressure (–LVdP/dtmin) and an increase in left ventricular end-diastolic pressure along with oxidative stress. Myocardial infarcted diabetic rats exhibited increased myonecrosis, edema, and apoptotic cell death. Treatment with eplerenone significantly improved the redox status of the myocardium. However, significant effects were lowered in rats treated with eplerenone and wortmanin. Eplerenone markedly inhibited Bax expression, TUNEL-positive cells, myonecrosis, and edema. On the other hand, administration of eplerenone and wortmanin did not draw out the same effects, when administered concomitantly or individually. Moreover, the rats treated with eplerenone showed increased expression of PI3K/Akt and decreased its downstream target GSK-3β. The present study provides confirmation for protective effects of eplerenone on myocardial infarcted diabetic rats via modulation of PI3K/Akt pathway and its downstream regulator GSK-3β.

Keywords: MI, myocardial infraction, PI3/Akt, Isoproterenol.

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Evaluation of antioxidant and antihyperglycemic activity of Mono Ammonium Glycyrrhizinate (MAG) by gene expression studies in STZ induced albino Wistar rats

Hootasini P, Bhargavi Y, Swathi P and Eswar Kumar Kilari
A. U. College of Pharmaceutical Sciences, Andhra University, Visakhapatnam, Andhra Pradesh, India

Abstract:

Monoammonium glycyrrhizinate (MAG) was the aglycone of glycyrrhizin derived from root of Licorice. Traditionally it was used in the treatment of diabetes and associated complications. The aim of the present study was to determine the effect of Monoammonium glycyrrhizinate (MAG) on antihyperglycemia, *in vivo* antioxidant, hepatic and lipid biomarkers and gene expressions in streptozotocin induced diabetic rats. The *MAG* (50 and 100mg/kg body weight) was administered orally

once a day for 15 days in STZ induced diabetic rats. A significant increase in blood glucose, glycosylated hemoglobin (HbA1c), altered Lipid profile (Total cholesterol, triglycerides, HDL, LDL and VLDL) and elevated hepatic serum biomarker levels (AST, ALT, ALP, total & direct bilirubin) in STZ induced diabetic rats. The MAG shown to normalize the lipid and hepatic biomarkers during 15 days treatment period in all groups of treatments in a dose dependent manner. Decreased levels of *in vivo* antioxidant enzymes SOD, CAT, GSH and GPx in both pancreas and ileum, decreased insulin mRNA GLP-1R and increased hepatic DPP4 mRNA gene expression levels in STZ induced diabetic rats. Treatment with MAG shown to elevate the pancreatic and intestinal antioxidant enzymes and GLP-1 gene expression in pancreas and decreased hepatic DPP4 in STZ induced diabetic rats. This may be due the antioxidant potential of Monoammonium glycyrrhizinate.

Keywords: Monoammonium glycyrrhizinate, Streptozotocin, Diabetes mellitus.

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Pesticides Poisoning - Pattern and Outcomes in a South Indian Hospital

Abhimanyu Prashar and Madhan Ramesh
Senior Research Fellow, Department of Pharmacy Practice, JSS College of Pharmacy – Mysore, JSS University, Mysore - 150015, Karnataka, India
abhi.parashar29@gmail.com

Abstract:

Self-poisoning is a major contributor to a number of suicides globally and remains a major public concern. The Implication of pesticides for self-poisoning is prevalent worldwide and especially in South Asia, South East Asia, and China. The objective behind the research was to assess the socio-demographic profile, pattern of poisonings and treatment outcomes of the poisoning due to pesticides. A prospective interventional study was conducted at the department of emergency medicine of a South Indian tertiary care hospital for a period of one year to study pattern and outcomes of poisoning cases due to the implication of pesticides. Level of significance (p) <0.05 was considered as statistically significant. In our study we observed, A total of 375 poisoning victims with intentional/ accidental exposure to pesticides were followed up and documented. The male-female ratio was found to be 1:0.32. The mean age was found to be 31.65 ± 13.10 years. The poisoning was predominant among the residents of rural areas, contributing to 72.0% of total patients. Organophosphorus compounds were the most implicated pesticides. The mean Glasgow Comatose Score (GCS) of the patients was found to be 12.22 ± 3.86. In 80.3% of the cases, patients recovered while mortality was observed in 6.4 % of cases. 13.3% patients lost to follow-up as they were discharged against the medical advice (DAMA). There was a statistical significance seen in the implication of pesticides for intentional poisoning with age, route of administration, area of residence and occupation of the victims. On the other hand, there was a strong association of the outcomes of poisoning with the toxic agent implicated for the poisoning. Providing immediate information on management of poisoning cases results in better treatment outcomes.

Keywords: Poisoning, Pesticides, Organophosphates, Aluminium Phosphide.

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Hepatoprotective Effect of Peel Extracts from *Citrus Limetta* Peel Extract against Paracetamol Induced Liver Injury in SD Rats

Purnima Tiwari, Garima Pandey and Shalini Tripathi
Department of Pharmacy, Rameshwaram Institute of Technology and Management, Sitapur road, Lucknow, Dr. A.P.J. Abdul Kalam Technical University, Sitapur road, Lucknow - 226031, Uttar Pradesh, India
shalinitripathi01@redimail.com

Abstract:

The present investigation is aimed to evaluate the hepatoprotective effects of *Citrus limetta* methanolic peel extracts on paracetamol induced liver toxicity. Peel extracts were given in the dose of 200 mg/kg body weight for 7 days and toxicity was induced by paracetamol (3 g/kg) on day 5. Live 52 (1 ml/kg body weight) was used as reference standard. On the 7th day animals were

sacrificed and liver function markers (ALT, AST, ALP), total bilirubin and total protein in blood serums and hepatic antioxidants (SOD, CAT, GSH and GP) in liver homogenate were estimated. The peel extracts restored the liver function markers and hepatic antioxidants to the normal level than elevated levels noticed on paracetamol control at $P < 0.001$. Reversal of hepatoarchitecture has also been shown by the help of histopathology. The present study shows that *C. limetta* peel extracts possess hepatoprotective action against paracetamol induced hepatotoxicity.

Keywords: *Citrus limetta*, Paracetamol, hepatoprotective, histopathology, biochemical.

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Effect Of Hydroalcoholic Fruit Extract Of Persea Americana Mill.,On High Fat Diet Induced Obesity: A Oral Dose Response Study In Rats

Vartika Srivastava, Badruddeen and Pushpendra Kumar Tripathi
Integral University, Lucknow, Uttar Pradesh, Ramwshwaram Institute of Technology and Management, Lucknow, Uttar Pradesh, India
tripathi.pushpendra@rediffmail.com

Abstract:

The fruits of Persea Americana Mill., commonly known as Avocado, are traditionally consumed for various health benefits including weight reduction. In the present investigation the effect of hydroalcoholic fruit extract of Persea americana on high fat diet (HFD) induced obesity in rats. The rats were divided into five groups and each five rats. The group-I treated with laboratory diet, control obese group-II treated with high fat died (HFD), group III, IV served as *Persea americana* seed extract (100, 200 mg/kg) plus high fat diet and Group V served as standard drug (2 mg/kg) plus high fat diet treated. After the end of experimental period (21st days) the body weight, organ fat pad weight, lipid profile, AST and ALT, Urea and Creatinine, liver and kidney marker enzyme were estimated along with histopathological examination in experimental groups of animals. The obtained result showed that the significant reduction extract in body weight, visceral fat pad ($P<0.01$), lipids level ($P<0.01$), AST and ALT ($P<0.01$) Urea and Creatinine ($P<0.01$) on administration of *Persea americana* seed (200 mg/kg), standard drug (2 mg/kg) when compared with HFD group II while administration of *Persea americana* seed extract (100 mg/kg) did not show any significant effects. The biochemical estimation was supplemented by histopathological examination.

Keywords: biochemical, histopathological, obesity, *Persea americana*.

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Effect of Rosuvastatin & Exenatide on Type 2 Diabetes Induced Depression In Rats

Riya, Amanpreetkaur, Shradha Mehta, S.L. Harikumar and Gurfateh Singh
University School of Pharmaceutical Sciences, Rayat Bahra University, Sahauran, Kharar,
Mohali - 140104, Punjab, India
riyasandhu647@gmail.com

Abstract:

The diabetes Type 2 mellitus is very common problem worldwide. Diabetes individual are at a greater risk of developing comorbid depression. The pathophysiology of type 2 diabetes induced depression is complex & associated with many neurochemical & neurovascular factor such as reduced brain monoamine levels, neuronal loss, increased oxidative stress. Most cases of depression among diabetes get undetected due commonality of the symptoms of diabetes & depression condition like weight gain or loss, sleep disturbance, appetite change .Therefore study has been aimed to find the effect of Rosuvastatin & Exenatide drug which might improve the depression symptoms in types 2 diabetes patients . Rosuvastatin is a fully synthetic HMG-COA reductase inhibitor. Rosuvastatin (10mg/kg), Exenatide (10mg/kg) were continued for one month after validation of depression in type 2 diabetes rats. RSV could be hypothesized that by improving factor, RSV contributing for antidepressant activity observed in patient study. From above discussion that hypercholesterolemia might link between type

2 diabetes & depression. The antidepressant effect of RSV may be due to antihyperlipedemia & antioxidant effect leading to decrease in the symptoms of depression in type 2 diabetes rats modals.

Keywords: comorbid depression, Rosuvastatin, Exenatide, antihyperlipedemia.

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Role of Chronopharmacokinetics in Pharmacokinetics-Pharmacodynamics (PK-PD) of Metformin: A Step towards Personalized medicine

Snehal Bhajikhaye, Swapnil Borse and S.C. Dhawale
Swami Ramanand Teerth Marthwada University, School of Pharmacy, Nanded - 431606, Maharashtra, India
sbhajikhaye123@gamil.com

Abstract:

Chronopharamcokinetics in management of various diseases based upon chronotherapeutics aspects involves both rhythmicity and time of administration. Shift work, chronic jet lag and sleep disturbances can leads to disruption of circadian rhythms can be either the cause or the effect of various disorders including metabolic syndrome (diabetes mellitus), inflammatory diseases, , etc. Ablation of circadian clock in pancreatic islet cells may results in diabetes because of defeat in coupling to stimulate β cells mediated insulin secretion. Insulin is mainly released in a pulsatile fashion playing a key role in this process by inhibiting hepatic glucose production and by stimulating glucose uptake by insulin-sensitive tissue. GLP-1 is an important incretin, released from the gut in response to ingested glucose which induces insulin release from pancreatic β cells, inhibit glucagon release from the α cells which is an important part of hormonal cascade in diabetes. So these hormonal level and hyperglycemia can be effectively (directly/indirectly) managed by biaguanide derivate like metformin by lowering both basal and postprandial plasma glucose. Metformin decreases hepatic glucose production, decreases intestinal absorption of glucose, and improves insulin sensitivity by increasing peripheral glucose uptake and utilization. Metformin is most widely used first-line type 2 diabetes drug, however, only 60-65% of patients attain desired glycemic control. It has been found that with rise in dose and/or diabetes progression the absorption of metformin may decrease. Alteration/disruption of circadian rhythms holds potential to alter the body physiology (via alteration in level of Cytokines-Hormones-Neurotransmitters-Enzymes-Transporters (CHNET) interplay) that may lead to individualized alteration in the PK-PD of metformin. Various OCTs, CYPs, and transporters like Pgp, BCRP, play a role in pharmacokinetics of metformin. During diabetes the alteration in these players take plays, may be through individualized alteration in CHNET. This infers that, chronobiology may pay a bidirectional/central role in development, progression and pharmacotherapeutic of diabetes. Therefore, a thorough understanding of chronopharmacokinetics of metformin will be a significant contribution to take a step towards personalized pharmacotherapeutics.

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Molecular Mechanisms of the Analgesic Effect of Rutin in Mice

Anudeep Kaur
Department of Pharmaceutical Sciences, Guru Nanak Dev University, Amritsar, Punjab, India
deepanu079@gmail.com

Abstract:

Introduction Pain is defined as an unpleasant sensory and emotional experience arising from actual or potential tissue damage. The current pain therapies available are associated is numerous side effects [1]. Rutin (5, 7, 3′, 4′- OH, 3- rutinose) is the glycosidic form of quercetin, being classified as flavonol found in citrus fruits. **Objectives**

- To study the analgesic action of rutin in thermal and chemical models of pain.
- To study the modulation of nitric oxide, cyclooxygenase and opioid receptors in the observed effects of rutin using capsaicin induced pain model.

Experimental methods

Swiss albino mice of either sex with body weight ranging from 30 – 40 g were employed. The studies were carried in accordance with Committee for the Purpose of Control and Supervision of Experiments (CPCSEA) on Animals guidelines and the protocol

was approved by IAEC.

The mice were divided into following groups

1. Group I Control: Received 0.1% CMC.
2. Group II Standard : Received diclofenac sodium (25 mg Kg^{-1})
3. Group III : Received rutin (40 mg Kg^{-1})
4. Group IV : Received Misoprostol (200 µg Kg^{-1}) + rutin (40 mg Kg^{-1})
5. Group VI: Received Naloxone (2 mg Kg^{-1}) + rutin (40 mg Kg^{-1})
6. Group VII: Received Aminoguanidine (50 mg Kg^{-1}) + rutin (40 mg Kg^{-1})
7. Group VIII: Received L - Arginine (40 mg Kg^{-1}) + rutin (40 mg Kg^{-1})

The pain was evaluated by using following models [2]

1. Thermal hyperalgesia
a) Eddy's Hot Plate method
b) Tail immersion method
2. Chemical hyperalgesia
a) Acetic acid induced pain
b) Capsaicin Induced pain

Result and discussion

Effect of rutin on hyperalgesia in chemical and thermal models

Rutin significantly increased the latency of paw licking and jumping behavior in mice, when compared to control group and the effect was comparable to the standard drug diclofenac. Rutin significantly increased the latency of tail withdrawal in mice, when compared to control group. Rutin significantly reduced acetic acid induced writhing in mice as compared to control group and the effect was comparable to the diclofenac. Rutin significantly ameliorated capsaicin induced paw licking and paw twitching responses as compared to control group.

Effect of various pharmacological interventions in capsaicin induced pain model

On pretreatment with aminoguanidine, a nitric oxide synthase inhibitor, significant increase in antinociceptive effect of rutin was observed as compared to rutin treated group. This indicates the involvement of nitric oxide pathway in the analgesic effect of rutin in mice. No significant alteration was observed in the antinociceptive effect of rutin by pretreatment with naloxone, misoprostol.

Conclusion

It is concluded that modulation of nitric oxide pathway may be responsible for antinociceptive effect of rutin.

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Exploring Anti Arthritic Activitv of *Gemelina Aeraborea* Leaves

Rupesh Pandey and Shiv Shankar Shukla
Swami Vivekanand College of Pharmacy, Indore, Madhya Pradesh, India
ranu.rupeshpandey@gmail.com

Abstract:

Arthritis leads many complications in the life of older age patients, as the treatment of the disease have many adverse effects. The current challenge is how to minimize the adverse events and provide better quality of life to these patients. *Gemelina Aeraborea* is a old ayurvedic classical plant used in old Ayurvedic formulation for immune related disorders. The present research work done to know the potential of *Gemelina Aeraborea leaves* on Acetic acid-induced vascular permeability model in mice. The indomethacin is used as standard drug .The result reveled that ethanol extract of *Gemelina Aeraborea* leaves (500 mg/kg) has anti arthritic potential due to % inhibition of 63.39% as compare to indomethacin 68.45%. Several biochemical parameters were also studied to conform the results.

Keywords: Arthritis, *Gemelina Aeraborea,* indomethacin, Ayurvedic formulation.

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Antidepressant Activity on Leaves of Polygonum Glabrum Willd in Experimental Animal

Surajeet Mandal and Bibhu Prasad Moharana
Jeypore College of Pharmacy, Rondapalli, Jeypore, Odisha, India

surojeet42@gmail.com

Abstract:

The present investigations, which were primarily conducted with the aim of investigating some neuropharmacological activity of *Polygonumglabrum* (PG), i.e. PG has got anxiolytic activity when tested against open field exploratory behavior, whereas elevated plus maze did not show any positive results. The action produced by PG was more than that of diazepam in open field exploratory behaviour. Observations confirms that PG possesses significant antidepressant activity. The observed antidepressant activity of PG was qualitatively comparable to that induced by Imipramine. Pentobarbitone induced hypnosis in mice was significant potentiated by PG.PG at 100 and 200mg/kg, reduced locomotor activity in rats. The PG seems to be little or no motor incoordination effect in mice when tested against rota-rod test. PG had significant analgesic activity which is both centrally and peripherally mediated, when tested against various analgesic models in rodents.The investigations indicates that PG has significant analgesic, anti-inflammatory, antidepressant and anxiolytic actions, some of these actions, including antidepressant and anxiolytic can be rationalized on the basis of the neurochemical data emanating from this study . The present study indicate that PG can be clinically useful not only in inflammation, pain and fever, and worm infestation but also in depression and anxiety. Clinical studies are required to confirm the above mentioned activities.

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Electrolyte Imbalance Reason behind Metabolic Acidosis

M. Manisha, D. Varun, M. Rakesh Reddy, K. Swetha and K. Shresta
Department of Pharmacy Practice, Sri Indu Institute of Pharmacy, Sheriguda, Ibrahimpatnam, Hyderabad, Telangana, India
nishareddy3477@gmail.com

Abstract:

ACIDOSIS is an increased acidity (H+) in the blood and body tissues. **Metabolic acidosis** is a condition that occurs when the body produces excessive quantities of acid or when the kidneys are not removing enough acid from the body. **One of the major reasons for metabolic acidosis is Diabetes Mellitus.** DM causes metabolic acidosis mainly by hyperglycaemic condition. In type 1 DM insulin deficiency leads to increased blood glucose level as insulin breakdown glucose. As a counter mechanism fats gets breakdown as ketone bodies (aceto-acetic acid & beta hydroxy butyrate) for the requirements needed for the body. As ketone bodies are acidic they cause acidosis, it is called diabetic ketoacidosis.**Respiratory distress is another reason for metabolic acidosis.** Major underlying cause is **Hypercapnia,**is due to hypoventilation (increase in CO2) decreasing blood pH, which causes increase in the levels of bicarbonates by combining with H2O in presence of carbonic anhydrase, which results in increased levels of H+ ions that combines with haemoglobin causing metabolic acidosis. We can also observe the elevated levels of HCO3- which is responsible for causing urinary alkalosis by increasing electronegativity, which may further lead to hypokalaemiafor acid base regulations. Hypercalcemia is observed as the acidic medium inhibits the binding of the calcium to albumin. From the observations we can estimate that electrolyte imbalance is the major reason for metabolic acidosis.

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Influence of Sartans on Hypoglycemic Effect of Glimepiride-Metformin Combination in Diabetic Rats

Beere Nagaraju

Visveswarapura Institute of Pharmaceutical Sciences, Bengaluru, Karnataka, India

gvpnraju2014@gmail.com

Abstract:

INTRODUCTION Multifactorial pharmacological treatment is essential as hypertension is extremely prevalent in patients with diabetes and multifactorial pharmacotherapy

reduces the risk of cardiovascular morbidity and mortality, but, an increasing number of concomitantly taken medications elevate the risk of the patient experiencing adverse effects and interactions of the drug. Applying a multifactorial pharmacotherapeutic approach, it is important to consider cytochrome P-450 (CYP) enzyme interactions. Therefore, the present study was planned to evaluate the safety of combination of glimepiride with metformin therapy in the presence of sartans in diabetic rats.

OBJECTIVES To evaluate the safety combination of glimepiride-metformin comination therapy in presence of sartans in diabetic rats.

EXPERIMENTAL METHODS

Animals:

Inbred adult wistar rats of either sex were used for which ethical clearance was obtained. Vide: CPCSEA/ IAEC No: VIPS/1442/15-16 Dated: 14.01.2016.

Chemicals:

The drugs used in the study were obtained as gift samples and their sources are indicated below.

Glucose kits were purchased locally.

Glimeperide : Dr. Reddy's Laboratories, Hyderabad.
Metformin : Apotex Research Pvt Ltd, Bangalore
Sartans : Apotex Research Pvt Ltd, Bangalore
Glucose kits : Span diagnostics Ltd.

Experimental diabetes in rats was induced by injecting alloxan monohydrate intraperitonially at a dose of 150 mg/ kg in ice-cold normal saline. After 72 h, blood samples were collected by retro orbital puncture from all surviving rats, and the serum analyzed for glucose levels. The rats with blood glucose levels of 200 mg/dL and above were considered as diabetic and were selected for the study.

The blood samples were collected into the Fisher brand premium microcentrifuge tubes (0.5 mL) at 0.0,1.0,2.0,3.0,4.0,6.0,8.0,10.0,12.0 and 16.0 hours before and after drug treatment by retro orbital puncture method. The serum samples were analyzed for glucose by GOD/POD method.

RESULTS & DISCUSSION

Table.1: Percent of blood glucose reduction with glimepiride + metformin; losartan alone and its combination in single and multiple dose interaction in diabetic rats

Time (h)	Percent of blood glucose reduction		
	Glimepiride 0.09 mg/ kg + Metformin 45 mg/ kg	Losartan 2.25 mg/ kg	Combina (SD)
0	0.00±0.00	0.00±0.00	0.00±0.0
1	22.14±0.53	10.30±0.26	29.47±0.
2	31.12±1.27	14.71±0.51	36.26±0.
3	34.13±1.15	19.66±0.57	40.27±0.
4	40.09±0.48	25.82±0.42	43.58±0.
6	37.01±0.75	31.09±0.54	44.61±0.
8	34.93±0.38	27.58±0.53	40.18±0.
10	29.06±1.20	23.17±0.67	35.71±0.
12	23.32±0.94	19.30±1.03	31.63±0.
16	16.03±1.14	13.94±1.40	23.30±1.

Table.2: Percent of blood glucose reduction with glimepiride + metformin, telmisartan and in combination in single and multiple dose treatment in diabetic rats

Time (h)	Percent of blood glucose reduction		
	Glimepiride 0.09 mg/ kg + Metformin 45 mg/ kg	Telmisartan 1.8 mg/ kg	Combina (SD)
0	0.00±0.00	0.00±0.00	0.00±0.0
1	23.81±0.87	11.82±1.17	24.15±1.
2	33.09±0.90	17.44±0.65	30.07±0.
3	38.51±0.86	13.35±0.83	37.23±0.
4	41.96±0.80	10.20±1.17	41.69±0.
6	34.80±0.45	8.17±1.04	35.44±1.
8	29.32±0.87	5.43±1.27	27.91±0.
10	23.22±0.96	3.19±0.92	21.70±0.
12	16.26±1.00	1.62±0.95	13.41±0.
16	10.68±1.26	0.17±0.28	9.25±0.7

Table.3: Percent of blood glucose reduction with glimepiride + metformin; olmesartan alone and its combination in single and multiple dose interaction in diabetic rats

Time (h)	Percent of blood glucose reduction		
	Glimepiride 0.09 mg/ kg + Metformin 45 mg/ kg	Olmesartan 1.8 mg/ kg	Combination (MD) (SD)
0	0.00±0.00	0.00±0.00	0.00±0.00
1	24.35±0.58	8.31±0.47	24.10±0.75
2	31.97±0.67	9.30±0.78	33.99±1.81
3	37.73±0.92	12.41±0.33	42.29±1.43
4	42.33±0.77	14.43±0.19	47.10±1.37
6	33.07±0.96	10.98±0.80	43.64±1.11
8	26.85±0.95	7.27±0.73	37.36±0.45
10	19.62±1.16	5.12±0.53	31.45±0.55
12	14.86±0.81	3.76±0.45	24.03±0.84
16	9.18±0.66	1.17±0.34	13.19±0.93

In losartan group of diabetic rats, glimepiride + metformin shown to have 40% reduction of blood glucose levels at 4 h, it was found to be increased to 31% during 6 h in losartan group alone and 44% and 46% in reduction of blood glucose during 6 h in single & multiple dose treatment of glimepiride + metformin & losartan respectively. Losartan alone found to produce significant hypoglycaemic effect in diabetic rats might be due to insulin resistance and inhibition of hepatic glucose uptake. In combination, losartan enhanced the hypoglycaemic effect of glimepiride + metformin both in single and multiple dose treatments; this might be due to either combined hypoglycaemic effect (pharmacodynamic effect), or may be due to competitive inhibition of metabolism of glimepiride by CYP2C9, CYP3A4.

In telmisartan group of diabetic rats, glimeperide + metformin shown to have 41% reduction of blood glucose levels at 4 h, it was found to be increased to 47% during 2 h in telmisartan group alone and 41% and 43% in blood glucose reduction during 4 h in single & multiple dose treatment of glimeperide + metformin & telmisartan respectively. Telmisartan alone did not produce significant hypoglycemia when administered alone and did not alter the hypoglycaemic effect produced by the glimepiride + metformin both in single and multiple dose treatments in diabetic rats.

In olmesartan group of diabetic rats, glimeperide-metformin shown to have 41% reduction of blood glucose levels at 4 h, it was found to be increased 14%, 47%, 48% in blood glucose reduction during 6 h in olmesartan alone and in single & multiple dose treatment of glimeperide + metformin & olmesartan respectively. Olmesartan alone did not produced hypoglycaemic effect in diabetic rats but when administered in combination it enhanced the hypoglycaemic effect of glimepiride + metformin in single and multiple dose treatmants. This might be due to possible pharmacokinetic interaction as olmesartan might have displaced glimepiride from protein binding sites. Both glimepiride and olmesartan are reported to be highly protein drugs.

CONCLUSION

The study also suggests that caution may be recommended in therapy concerning combined use of sartans like losartan, telmisartan and olmesartan with oral hypoglycemic agent, glimepiride-metformin combination. This study should be extended to humans to investigate any possible interaction.

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Study of Lopinavir/Ritonavir Induce Memory Impairment in Rats and Role of Chrysin

Mohammad Aquib Siddiqui, Yogita Kumari and Prasanta Kumar Nayak
Department of Pharmaceutical Engineering and Technology, IIT (Banaras Hindu University), Varanasi - 221005, Uttar Pradesh, India
mdaquibs.phe16@itbhu.ac.in

Abstract:

Human Immunodeficiency Virus (HIV) has found to affect 36.7 million people globally. Anti-HIV drugs such as liponavir/ritonavirare associated with memory impairment. There is an unmet need to develop therapeutic strategies to treat memory impairment. The present study evaluated the effectiveness of chrysin against liponavir/ritonavir induce memory impairment in rats. Five groups of rats were divided into naive, vehicle (tween 80), lopinavir (80mg) + ritonavir (20mg), lopinavir (80mg) + ritonavir (20mg) + chrysin (50mg) and lopinavir (40mg) + ritonavir (10mg) + chrysin (50mg).

Behavioral, biochemical and histopathological changes have been evaluated. Memory impairment study was done using Barnes maze test by probe trial latency, probe trial errors and reversal learning. Moreover, biochemical studies were done to measure the enzymatic study. Tetrazolium test by histopathological studies of brain were done to assess any morphological changes in tissue architecture. The combinative effect (liponavir/ ritonavir + chrysin) significantly reduced escape latency, probe trial errors, and mean error in reversal learning. Furthermore, the combinative effect increased the level of glutathione andcause less disruption of morphological architecture of the brain tissue as compared to lopinavir/ritonavir groups. In conclusion, our finding suggests that chrysin have potential for treatment of memory impairment in lopinavir/ritonavir treated groups.

Keywords: chrysin, lopinavir/ritonavir, Barnes maze test, glutathione.

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Development and Validation of Bioanalytical Method for Lacosamide from Rat Brain Tissue

Vannekuti Shruti, S.Nukaraju and T.V. Narayana
Vikas Institute of Pharmaceutical Sciences,
Rajuhmundry, Andra Pradesh, India
www.shrutivannekuti1996@email.com

Abstract:

Lacosamide is an antiepeletic drug approved in in the USA, Urope and other countries. Lacosamide is currently use to manage partial onset seizures in human suffering from epilepsy. Rapid, sensitive, novel and simple UV method was developed and validated according to ICH guidelines for the quantification of lacosamide in rat brain homogenate supernatant. Calibaration curves were found to linear ranging from 0.02 and 0.01 microgram per ml given regression of 0.998 using detection wavelength at 250nm.precision, limit of detection and limit of quantification were calculated.recovery ranged from 97.27% to 101.45% w/w. the assay was applied successfully to pre-clinical study of lacosamide. By applying this method we were able to determine the brain concentrstion of lacosamide during at least 1 hr after 1v administration of 1 mg/kg lacosamide. The method proved to be simple useful and appropriate, for pre clinical and experimental research.

Summary

1.Introduction: Bio analytical method offers in pharmacokinetic, toxicokinetics,bioequivalence and bio avalibility studies at various stages of drug discovery programme and support pre clinical and phase I to phase IV clinical trails.

2. Experimental

A U V – visible double spectrometer, model number V-550 with 10mm matched quartz cells was used for experiments.

2.2 Reagents and materials

Lacosamide was obtained from shankus chem. Sciences pvt ltd baroda .all reagents an d chemicals used where of analytical grade.

2.3 animal and drug treatments

Uv method was developed for quantification of lacosamide from rat brain after intravenous administration of lacosamide to male wister albino rats that were obtained from appasaheb birnale college of pharmacy.

2.4 sample preparation

A procedure for lacosamide from brain samples prior to uv method development . rat brain collection was anaesthetized with ether and sacrificed, decapitated and whole brain was eased from skull.

2.5 preparation of caliberated standard solutions

A primary stock solution of lacosamidse 1000microgram per ml was prepared from dissolving 10 mng of drug in 10 ml of DMSO to achieve working standard sols of concentrations of 4,8,12,16and 20 micro grams.

2.6 method validation The method validation was according to the existing info, consisting of study of liniarity, Sensitivity,precision , accuracy,recovery specificity , selectivity.

Conclusion: The proposed spectro photometric method is very simple accurate rapid precise and sensitive for determination of lacosamide concentration.

D-350

Anti-Inflammatory Activity of Flavonoid Compound Isolated From *Gmelina Arborea* Fruits

Extract

Rohit Mandal, Haragouri Mishra, Bibhu Prasad Moharana and Mansi Khadanga
Jeypore College of Pharmacy, Jeypore, Odisha, India
mandalrohit103@gmail.com

Abstract:

Background: The plant Gmelinaarborea has been traditionally used in India for several medicinal purposes like anthelmintic, diuretic, antibacterial, hepatoprotective, anti-inflammatory, antioxidant and antidiabetic. It contains phytoconstituents like alkaloids, carbohydrates, anthraquinone glycosides, gums, mucilages, tannins, phenolic compounds and flavonoids. Aims: The objective of present study is to isolate a compound from ethanolic extract of G. arborea and to explore the anti-inflammatory activity of isolated compound. Material and methods: The isolation of compound was done by column and thin layer chromatographic methods. The isolated compound was characterized to elucidate its structure by spectroscopic methods like ultraviolet, infrared, nuclear magnetic resonance and mass spectroscopy. The anti-inflammatory activity of phytoconstituent was evaluated by Carrageenan-induced rat paw edema test method using Wistar rats as animal model. Statistical analysis used: All data are verified for statistically significant by using one way ANOVA at 5 % level of significance ($p < 0.05$). Results: A flavonoid compound was isolated as yellow colour crystal with melting point 177±1 °C with molecular formula $C_{16}H_{15}O_5$ and IUPAC name 5,7-dihydroxy-4-methoxy flavone. The compound was able to show good anti-inflammatory activity in comparison with standard drug Diclofenac sodium. Conclusion: It could be concluded that the isolated compound is a flavonoid and it possess anti-inflammatory activity.

Keywords: Gmelinaarborea, Flavonoid, Spectroscopy, Carrageenan, Inflammation.

D-351

Drug Utilization and Infertility Issues in Poly Cystic Ovarian Syndrome

K Swetha, D Varun and Veena G
Department of Pharmacy Practice, Sri Indu Institute of Pharmacy, Sheriguda, Ibrahimpatnam, Hyderabad - 501510, Telangana, India
swethapharmd2@gmail.com

Abstract:

The polycystic ovary syndrome (PCOS) is most common female endocrine disorder affecting up to one in five women of reproductive age. It has significant and diverse clinical implications including reproductive (infertility, hyperandrogenism, hirsutism), metabolic (insulin resistance, impaired glucose tolerance, type 2 diabetes mellitus, adverse cardiovascular risk profiles) and psychological features (increased anxiety, depression and worsened quality of life).The aim of this study is to describe the drug utilisation patterns in women with Polycystic Ovary Syndrome (PCOS) as well as research on the infertility causes & to identify if their infertility is exacerbated by depression which could be the reason for delay in seeking medical consultation. The benefit and utmost importance of lifestyle modification for the long-term health of these women is stressed as well. Treatment is focussed on the goals of ameliorating hyperandrogenic symptoms,including ovulation and preventing cardiometabolic complications. This is a prospective study carried out in a tertiary care hospital targeting 20 yrs -30 yrs age group of population. This study that is focused on the drug utilization patterns of the polycystic ovary syndrome provides the basis for better treatment methods and possible prevention of the syndrome and its sequelae. The prospective study revealed that about 50 % of the patients were prescribed with clomiphene and 30 % of the cases involved abnormal lifestyle(diet, sleep patterns,exercise).Patients were provided with counselling regarding the infertility causes which helped in better recovery & quality of life.

D-352

Evaluation of Carrageenan Induced Anti-Inflammatory Activity of Methanolic Extract of *Ficus benghalensis* Linn. in Swiss Albino Rats

A. Elayaraja, Sheikh Ahammed R, R. Manikandan and M. Radha Krishnan
Department of Pharmaceutical Chemistry,

Kamalakshi Pandurangan College of Pharmacy, Thiruvannamalai – 606603, Tamil Nadu, India
arasanelayarajagmail.com

Abstract:

In the current research, anti-inflammatory activity of methanolic extract of whole plant of *Ficus benghalensis* Linn was studied using the Carrageenan induced inflammation in the albino wistar rats. The albino rats of both sex (b.w. 200-250gms) were treated orally with normal saline (as control group) and *Ficus benghalensis* extract (200 and 400 mg/kg), 60 min before 0.1 mL 1% carrageenan injection. Paw volume was measured before and 1, 2, and 3 h after the injection of carrageenan. The results were expressed as the Mean ±SEM and the statistical significance of differences between groups was analyzed by One Way Analysis of Variance (ANOVA) followed by Dunnett's test and compared with standard diclofenac with various dose levels. The sub plantar injection of carrageenan caused a time-dependent paw edema in the rats were measured by vernier caliper. Oral administration of *Ficus benghalensis* extract (200 and 400 mg/kg) inhibited paw swelling dose-dependently at 0,1, 2, and 3h after Carrageenan injection. From our studies it was confirmed that *Ficus benghalensis* extract exert a significant anti-inflammatory activity.

Keywords: *Ficus benghalensis*, Carrageenan, Diclofenac, methanolic extract.

D-353

Agmatine Interaction with Imidazoline Receptors Attenuates Ethanol Consumption in Rats

Patil S. D., Patil S. A., Aglawe M. M., Umekar M. J. and Taksande B. G.

Department of Pharmacology, Smt.Kishoritai Bhoyar College of Pharmacy, Kamptee, Nagpur Maharashtra, India
sdpatil2001@gmail.com

Abstract:

The present study investigated the role of agmatine on ethanol self-administration in rats. Briefly, rats were allowed to consume ethanol inliquid modified diet for five weeks in increasing concentration (2.4 -7.2 % v/v) and rats were allowed to drink freely. Agmatine was injected by intraperitoneal chronically from day 8-21 of the protocol. Imidazoline agonists and antagonists were injected 30 min before agmatine. The results clearly demonstrated that administration of agmatine significantly reduces the ethanol consumption. The pharmacological effect of agmatine on ethanol consumption was potentiated by imidazoline receptor agonists, I1 agonist moxonidine, and imidazoline I2 agonist and blocked by imidazoline I1 antagonist, efaroxan and I2 antagonist, idazoxan. Thus, our result suggests the involvement of imidazoline I1 and I2 receptors in agmatine induced inhibition of ethanol consumption in rats

Keywords: Agmatine, ethanolconsumption, imidazoline receptors.

D-354

Hypericum Perforatum Plant Extract For Anti Depressant Activity Using Different Experimental Models

Ravi Chander T, Harish D and Y. Narasimha Reddy

Vaagdevi Pharmacy College, Warangal, Telangana, India

rccology@gmail.com

Abstract:

Depression comprises mostly chronic condition in clinical practice, and also caused by hypertension. Although much progress was there in development of clinically relevant antidepressant drugs during recent years, but currently available antidepressant therapy is not at all totally effective and it is also associated with many undesirable collateral effects. In addition, only 60% of patients respond to treatment with the available antidepressants. For this reason, there was a search for new drugs to control the symptoms associated with depressive disorders which is still desirable. In the present study, 7 days of pretreatment with ethanolic extract of *Hypericum Perforatum(*EEHP*)* at doses of 50, 100 and 200 mg/kg showed antidepressant activity in the forced swim test(FST) and tail suspension tests(TST). The FST is the tool most widely used for assessing antidepressant activity pre clinically. The widespread use of this model is largely a result of its ease of use, reliability

across laboratories and ability to detect a broad spectrum of antidepressant agents. Most clinically active antidepressants are effective in the FST, while neuroleptics and anxiolytics produce different effects. In the forced swim test, EEHP significantly reduced immobility period suggesting anti-depressant activity and the activity was comparable to the reference drug Imipramine. Immobility is a state of lowered mood or hopelessness, which the rats experience when they are allowed to swim in a restricted space from which they cannot escape. Based on coparision of two models the ethanolic extract of Hypericum Perforatum possess Anti depressant Activity.

Keywords: Hypericum Perforatum (HP), antidepressant activity, forced swim test, Imipramine.

D-355

Effect of *Moringa Oleifera* leaf extract on TNBS induced Ulcerative Colitis in Male Sprague Dawley Rats

M.Sirisha and Suhasin G
Department of Pharmacology, GITAM Institute of Pharmacy, GITAM University, Rushikonda, Vishakapatnam - 530045, Andhra Pradesh, India
mugada7cirisha@gmail.com

Abstract:

In the current research, effect of *Moringa oleifera* (MOLE) leaf extract on 2, 4, 6-Trinitrobenzene sulfonic acid (TNBS) induced Ulcerative colitis was studied. The main objective was to investigate the efficacy of herbal treatment in the management and safer treatment in large population suffering from ulcerative colitis. This can be helpful in reducing the need of steroids and surgical processes. Rat models of colitis group were induced with TNBS (60mg/ml) by intra-colonic administration to induce ulcerative colitis but didn't receive any treatment. The standard group was submitted to colitis induced followed by treatment with Sulfasalazine (SFZ) (50mg/kg). Two test groups A and B were treated with MOLE i.e 250mg/kg and 500mg/kg respectively. Body weight, stool consistency, occult blood, Disease activity index (DAI), colon length and weight, MPO activity, hematological, macroscopic parameters were measured. Test B (250mg/kg) was most promising therapeutic dose as effective as SFZ (50mg/kg). The results showed in test B group rats was increase in body weight, DAI was reduced, MPO activity was reduced, abolition of hematological signs of disease, decrease in macroscopic damage , decrease in percentage of diarrhea. In conclusion, the extract obtained from leaves *Moringa oleifera* possesses active substances, which exert marked protective effect in experimental colitis mainly by unknown mechanism. These results confirm and justify, the popular use of this plant is to treat gastro intestinal diseases.

Keywords: MPO (Myeloperoxidase), SFZ (Sulfasalazine), MOLE (*Moringa oleifera*).

D-356

Ameliorating Effect of *Punica granatum* on Advanced Glycation End Products Induced Cataractogenesis in Diabetic Rats

Swathi Putta and Eswar Kumar Kilari
AU College of Pharmaceutical Sciences, Andhra University, Visakhapatnam – 530003, Andhra Pradesh, India
swathidbmp@gmail.com

Abstract:

The objective of the study is to evaluate the aqueous pericarp extract of *Punica granatum* (APPG) for *in vivo* antioxidant and anti inflammatory activity and its role in inhibiting the polyol pathway and formation of advanced glycation end products in diabetic rats. The diabetic animals were treated with APPG for a period of 12 weeks. At the end of 12 weeks, the animals were sacrificed and the biochemical pathways involved in the pathogenesis of cataract such as oxidative stress by protein content, superoxide dismutase (SOD), catalase (CAT), reduced glutathione (GSH) and, inflammation by TNF α, IL6 and C- reactive protein (CRP) polyolpathway by aldose reductase (AR) in lens homogenates, alterations in protein carbonyl content (PCO) and advanced glycation end products (AGEs) in both serum and lens of the APPG treated diabetic rats were compared against diabetic rats. Cataract progression due to hyperglycemia was monitored by slit lamp microscope. Fundoscope test and retinal histopathology was done for assessing

retinopathy. Statistically significant reduction in glucose, and elevation of protein content, SOD, CAT and GSH levels and decreased levels of TNF α, IL6 and CRP, AR and PCO in lens homogenate and significant reduction in AGEs serum and lens homogenate were observed. Slit lamp examination, fundoscope and histopathology showed improvement in retinal changes in APPG treated rats compared to diabetic rats. The treatment with APPG found to delay the progression of diabetic cataractogenesis and retinopathy, which might be due to the presence of active phytochemicals in APPG.

Keywords: *Punica granatum*, Advanced glycation end products, Cataractogenesis.

D-357

Effect of Ethanolic Extract Of bark of *Bassia latifolia* on Adrenaline Induced Hyperglycemia And High Fat Diet Induced Insulin Resistance On Rats

Bipin Bihari Panda, Bhabani Sankar Mahapatra and Santosh Kumar Mahapatra
Gayatri College of Pharmacy, Sambalpur - 768200, Odisha, India
bipinbihari_2000@yahoo.co.in

Abstract:

In the present study, an attempt was made to establish the effect of bark of plant *Bassia latifolia* on normal, adrenaline induced hyperglycaemia and high fat diet induced insulin resistance on rats. In all models, the ethanolic extract of bark of *Bassia latifolia* was administered in the dose of 200 mg/kg orally and standard drug glimepiride (1mg/kg, p.o). Blood glucose concentration of rats of various groups was determined by glucometer and compared with standard antidiabetic treatment. In normoglycemic rats, the drug reduced blood glucose level significantly ($p<0.05$) after 6 hr of administration. It shows significant glucose lowering activity in 6hr and 8hr time points. In normoglycemic glucose loaded rats also it reduces blood glucose level significantly ($p<0.05$) when administered 3hr before administration glucose. In adrenaline induced hyperglycaemic rats, the extract in the dose of 200 mg/kg also reduces blood glucose level significantly ($p<0.05$) in comparison to control groups after 4 hr of administration. The results of our study shows that rats fed with high fat diet elicited significant increase in body weights and glucose level**.** Coadministration of ethanolic extract of bark of *Bassia latifolia* reduces glucose level of animals significantly ($p<0.05$) in comparison to control group. It can be concluded that bark of plant *Bassia latifolia* has antidiabetic effect.

Keywords: *Bassia latifolia*, Adrenaline, High fat diet.

Table-1: Effect of ethanolic extract of bark of *Bassia latifolia* (EEBBL) on normoglycemic rats.

Group	Treatment (Dose mg/kg)	Initial Glucose (mg/dl)	Final Glucose Level	
			1hr	2 hr
I	Control (solvent 5ml/kg)	90.17 ±7.54	86.50 ±7.26	89.13 ±5.57
II	Glimepiride(1)	92.33 ±8.31	70.24 ±7.00*	56.50 ±6.77*
III	EEBBL	91.15 ±6.29	90.40 ±5.37	87.52 ±5.76

Values are mean± SEM (Standard error of mean);
Statistical analysis by Students
t-test. p value <0. 01.
*Group II, III compared with Group I.

Table-2: Effect of ethanolic extract of bark of *Bassia latifolia* on oral glucose loaded rats.

Group	Treatment (mg/kg)	Initial glucose level (mg/dl)	Final glucose le	
			30 min	6
Group 1	Solvent	88.6±6.62	205.0±9.4	
Group 2	EEBBL(200)	84.5±7.53	172.4±8.5*	
Group 3	Glimepiride(1)	85.7±6.74	127.0±9.9 *	9

Values are mean±SEM (Standard error of mean);
Statistical analysis by Students
t-test. p value <0. 01.
*Group II, III compared with Group I.

Table-3: Effect of ethanolic extract of bark of *Bassia latifolia* on adrenaline induced hyperglycaemic rats.

Material and method, grouping, process

Groups	Treatment (Dose mg/kg)	Initial glucose (mg/dl)	Final glucose (mg/dl)			
			2 hr	3hr	5 hr	7 hr
I	Normal control (Solvent 5ml/kg)	86.12 ±5.12	85.62 ±5.51	87.11 ±5.82	84.62 ±5.61	86.15 ±5.22
II	Hyperglycaemic control (Solvent)	87.33 ±6.91	195.01 ±8.12*	212.52 ±9.34*	193.31 ±9.43*	142.43 ±7.11*
III	Glimepiride(1)	85.41 ±5.83	155.43 ±8.43*	144.24 ±7.31*	125.60 ±6.45*	114.62 ±6.23*
IV	EEBBL (200)	88.64 ±5.24	202.33 ±8.42	186.52 ±9.34*	168.31 ±8.44*	128.43 ±7.02*

(mg/dl)

4hr	6 hr	8hr	24 hr
86.73 ±6.72	88.67 ±6.46	87.25 ±6.22	87.00 ±6.14
51.62 ±6.06*	147.12 ±7.10*	149.23 ±6.10*	98.5 ±7.19
80.57 ±6.18*	157.67 ±5.31*	83.93 ±6.17	90.50 ±5.71

One way ANOVA followed by Duncan's multiple range test. n=6. *p<0.05

Group II compared with Group I.

Group III, IV compared to Group II.

Table 4 – Effect of effect of ethanolic extract of bark of *Bassia latifolia* on high fat diet induced rats.

Material and method, Grouping, process

Group	Treatment (mg/kg)	Initial glucose level (mg/dl)	Final glucose level (mg/dl)		
			30 min	60 min	90 min	120 min
Group 1	solvent	117.6±8.62	205.0±10.4	183.3±9.41	160.0±8.5	144.4±7.5
Group 2	EEBBL(200)	113.5±8.53	172.4±9.5*	138.6±7.5*	123.2±7.5*	119.4±5.3*
Group 3	Glimepiride(1)	115.2±8.74	157.0±9.9 *	129.2±7.5*	115.8±6.45*	

vel (mg/dl)

60 min	90 min	120 min
	142.0±8.5	101.4±7.5
	108.6±7.5*	89.4±5.3*
99.3±7.3*	103.2±7.5*	80.5±6.4*

One way ANOVA followed by Duncan's multiple range test. n=6. *p<0.05

Group II, III compared with Group I.

D-358

Agmatine Attenuates Prenatal Stress And/ Or High Fat Diet Induced Susceptibility To Obesity In Rat Offspring

Badole N.A., Hiwse C.P. and Aglawe M.M.
Department of Pharmacology Smt. Kishoritai Bhoyar College of Pharmacy, Kamptee, Nagpur, Maharashtra, India
badolenikita@gmail.com

Abstract:

Prenatal environment exerts profound influence on the development of an organism and can predispose adaptive disturbances in later life. Stress exposure or consumption of high amount of dietary fat during pregnancy can also result in postnatal metabolic syndrome. The present study investigated the influence of agmatine in stress and/or high fat diet induced metabolic complications in rat offspring. Pregnant Sprague-Dawley rats were exposed to High Fat Diet (HFD) and/ or stress (dexamethasone) with or without chronic agmatine treatment. The serum total cholesterol, triglyceride, HDL, blood glucose levels and body weight, were analysed at different time points during gestation in pregnant rats and postnatally in pups. Agmatine significantly attenuated the metabolic impairment induced by HFD and/or stress (dexamethasone) as indicated by normalization of serum total cholesterol, triglyceride, HDL and blood glucose levels in pregnant rats as well as in pups. Obesity (weight gain) was also less in pups exposed prenatally to HFD and /or stress following agmatine treatment. This finding clearly indicates the role of agmatine in modulating neural pathways that regulate stress responses and metabolic homeostasis impaired by prenatal stress and high fat diet. Thus, this study suggested agmatine as a novel approach for prevention of childhood obesity and associated future health consequences induced by prenatal stress and/or high fat diet.

Keywords: Prenatal stress, Obesity, Agmatine.

D-359

Antidepressant Activity of Hydroalcoholic Extract of *Artocarpus Heterophyllus* (Seeds)

Soni Priyanka, Joshi Ankur, Malviya Sapna, Malviya Neelesh, Sainy Jitendra and Sharma Rajesh
Research Scholar, School of Pharmacy, DAVV, Indore, Madhya Pradesh, India
soni.rgpv@gmail.com

Abstract:

The present evaluate the effect of antidepressant activity of *Artocarpus heterophyllus* seeds hydro-alcoholic extract as well as its interaction with conventional anxiolytic and antidepressant drugs using tail suspension test and forced swim test (FST) and to evaluate the possible mechanisms

involved in its actions. The seeds of *Artocarpus heterophyllus* were collected and authenticated. Extraction of dried seeds was carried out using soxhlet apparatus to obtain its Hydro alcoholic extract. The extract of *Artocarpus heterophyllus* showed the significant antidepressant activity comparable to the standard drug. The oral administration of *Artocarpus heterophyllus* seeds extract at 100 mg/ kg and 200 mg/kg respectively as compared to the control treated group showed an antidepressant activity comparable to that of standard drug. The antidepressant effects of *Artocarpus heterophyllus* extract seem to be mainly associated with the activation of dopamineergic system and possess potential anxiolytic and antidepressant activities.

Keywords: Antidepressant activity, *Artocarpus heterophyllus*, forced swimming test, tail suspension test.

D-360

Bioactivity Screening Study of the Protein Extract From The Abdominal Waste of *Oreochromis niloticus*

Saquib Raza, Sudhir Kumar Ray, Neeraj Upmanyu and Dipanjana Ghosh
School of Pharmacy & Research, People's University, Bhanpur Road, Bhopal - 462037, Madhya Pradesh, India
dipanjanagh@gmail.com

Abstract:

Fish abdominal waste is a potential source of bioactive proteins and peptides as conveyed from previous studies. Full body flesh of the fresh water fish *Oreochromis niloticus* has been explored as the source of bioactivities particularly antioxidative and antihypertensive activities. However the abdominal waste tissues including liver have not been explored for possible presence of bioactive proteins/ peptides till date. This study represents a screening of bioactivities (antimicrobial and proteolytic) from the abdominal waste protein of Tilapia. Our preliminary investigation on the protein extracts from the liver waste of the fish has shown significant proteolytic activity in crude extract. The crude extract was then subjected to a primary step of protein purification using ammonium sulphate precipitation method and the proteolytic fraction has been enriched in a 50% of ammonium sulphate precipitation. Our future aim is to further purify the fraction responsible for proteolytic activity using size exclusion and/ or ion exchange chromatographic methods and identify the protein/ peptide sequences of the responsible proteolytic fraction of highest possible purity. This study will contribute towards identifying a potential lead of proteolytic enzyme(s) to be possibly used as the therapeutics for dissolution of blood clots in ischemic stroke, wound debridement or as a substitute for digestive enzyme. Recombinant production of the identified protein/ peptide would open up another scope for collaborative industrial research.

Keywords: Bioactivity, fish protein, abdominal waste, proteolytic activity.

D-361

Evaluation of Antidiabetic activity of *Adhatoda Vesica* Nees. Against high Fat Diet And Low Dose Streptozotocin Induced Diabetic Rats

Thimma Reddygari Jyothsna, R. Kannan and R. Vadivelan
Department of Pharnacology, JSS University, JSS College of Pharmacy, Ooty, Tamil Nadu, India
tjyothsna19@gmail.com

Abstract:

Diabetes mellitus a metabolic disordercharacterised by elevated blood glucose,burden of cardiovascular problems. The advancement in the usage of herbs,herbal medicaments due to inherent efficacy, less side effects, low cost,it was proposed to screen indigenous medicinal plants for the treatment of diabetes and diabetes associated dyslipidemia. The aim of the current study is to investigate the potentiality of *Adhatodavasica*Nees.forthe treatment of diabetes and diabetes associateddyslipidemia,to study the possible mechanism(s) of action of these plant drugs by targeting biochemical pathways. Among various extracts, the ethyl acetate and methanolic extracts of the plant showed significant α- amylase inhibition

and α-glucosidase inhibition when compared toAcarbose.The $CTC_{50}$of extracts and fractions on L-6 cells and 3T3 CELLS were found to be between 334-380µg/ml and 334-381µg/ml respectively. Administration ofextract (200 and 400 mg/kg) produce a maximum reduction in blood glucose by10 and 22% in 180 min. Hence, we concluded that *Adhatodavasica*Nees ameliorates the blood glucose level, lipid and lipoprotein profile in HFD and low dose STZ- induced diabetic rats. The proposed mechanism by which the plant may probably act is, by inhibiting the enzyme involved in digestion of carbohydrates, stimulating the insulin release from β cells of pancreas.

Keywords: Adhatodavasica, Diabetes, Dyslipidemia, Blood giucose, Lipid profile.

D-362

Agmatine Inhibits Cognitive Impairment in Rats Exposed To Ethanol during Adolescence

Jambhulkar J.B., Siddique M.A., Kale M.B., Kotagale N.R. and Taksande B.G.
Department of Pharmacology, S.K.B College of Pharmacy, Kamptee, Nagpur, Maharashtra, India
jagrutijambhulkar@gmail.com

Abstract:

The present study investigated the role of agmatine in cognitive impairment in ethanol exposed rat during early adolescence. Rats treated postnatally with ethanol during adolescence i.e. from day 28-38 shown significant cognitive impairment, revealed by novel object recognition (NOR), passive avoidance and T-maze test. Agmatine increase in exploration time in NOR test in adult phase (day 58-63). Agmatine decreased number of days required reach to 100% criterion in T-maze as compared ethanol treated rats (day 75-115). Impaired retrieval was found to be improved by agmatine as observed by increase latency in rats compared with ethanol (day 28-38) exposed rats when assessed (day 120-121) in passive avoidance paradigm. Liver Section studies showed central vein with radiating hepatocytes and duct epithelium. Area of fibrosis is also noted in rats exposed to ethanol on PND 28-38.These histopathological observations were not observed significantly in rats treated with agmatine 40 mg/kg, ip before ethanol exposure. The resultclearly requests the beneficially action of on cognitive and histopathological abnormality chronic alcoholism.

Keywords: Agmatine, ethanol, NOR, T-maze, passive avoidance.

D-363

Embelin Restores Striatal Neurochemistry and Attenuates MPTP-induced Motor Deficit in Rats

Jasdeep Singh, Rajat Bhardwaj and Rahul Deshmukh
Department of Pharmaceutical Sciences and Technology, Maharaja Ranjeet Singh Punjab Technical University, Bathinda – 151005, Punjab, India
brarsangrahoor@gmail.com

Abstract:

Embelin, a main active constituent of *Embeliaribes*, has been reported to possess various neuroprotective potential and reported to produce anti-inflammatory, antioxidant, and anticonvulsant actions. In the current study we have investigated the neuroprotective potential of embelin against MPTP induces experimental Parkinson's disease in rats. MPTP (100µg/µl; intranigral) was administered on 1st, 4th and 7th day in rats. Embelin (2.5, 5 and 10 mg/kg/day, i.p.) was administered from day 2nd to 15th in MPTP infused rats. Movementabnormalities were assessed by behavioral tests and change in body weight was examined on weekly basis. On the 15th day, the animals were sacrificed, and the rat striatum was isolated for the estimation of biochemical parameters (Malondialdehyde (MDA), glutathione (GSH), and nitrite), pro-inflammatory cytokine levels [tumor necrosis factor-alpha (TNF-α), interleukin-6 (IL-6) and interleukin-1 beta (IL-1β)], and analysis of striatal neurochemistry; monoamines and their metabolites, GABA and glutamate was performed. Repeated intranigral administration of MPTP significantly altered the behavioral, biochemical, proinflammatory cytokines and striatal neurochemistry. Embelin, at the selected doses, caused a significant reversal of motor functions (grip strength, narrow beam walk and locomotor activity) in rats. Further, embelin attenuated oxidative stress, pro-inflammatory cytokines and restored the striatal

neurochemistry (monoaminergic, GABAergic, glutamatergic signaling) induced by MPTP. These findings suggest the neuroprotective effect of embelin against PD. The observed protective effects of embelin might be attributed to its antioxidant, anti-inflammatory and neuromodulatory effects.

Keywords: Embelin; Monoamines; Parkinson's disease; Neurodegeneration; Movement Disorders.

D-364

Neuroprotective Potential Of Allicin Against 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine Induced Experimental Parkinson's Disease In Rats

Karamjeet Kaur and Rahul Deshmukh
Department of Pharmacology, ISF College of Pharmacy, Moga - 142001, Punjab, India
kaurkaranjeet696@gmail.com

Abstract:

Parkinson's disease (PD) is an age related progressive neurodegenerative disorder characterized by loss of dopaminergic neurons in the substantianigra pars compacta (SNpc) region of brain. MPTP induced dopaminergic degeneration involves number of mechanisms such as oxidative stress and neuroinflammation etc.Allicinhas been reported to exert variousanti-oxidative and anti-inflammatory activities in in-vitro and in-vivo studies.In present study, we have investigatedneuroprotectve effect of allicin against MPTP induced Parkinson's disease in rats. Repeated intranigral infusion of MPTP at day 1st, 4th and 7th produced significant decreased in body weight, locomotor activity, motor coordination, antioxidant defense enzymes (reduced glutathione) and significantly increased oxidative stress markers (lipid peroxidation and nitritelevel) in striatum.MPTP treatment also increased pro-inflammatory cytokines (TNF-α, IL-6 and IL-1β) level and decreased neurotransmitter level in striatum. Allicin (5, 10 and 20mg/kg/day i.p.) treatment from day8th to 21st significant reversed the behavioral, antioxidantdefense enzymes, oxidative stress marker and pro-inflammatory cytokines in MPTP infused rats. The result of the present study suggest that beneficial effect of allicinin PD.

D-365

Evaluation of Anti-Obesity Activities of *Syzgium Cumini Linn.* Seed and *Terminalia Chebula Retz.* Fruit Extract in Monosodium Glutamate –High Fat Diet Induced Obese Mice

Sangita Kumari, Ashok Pattnaik, Sanchari Charkarborty and Satyajit Mohanti
Department of Pharmaceutical Sciences and Technology, Birla Institute of Technology, Mesra Ranchi - 835215, Jharkhand, India
sweetsangitalucy@gmail.com

Abstract:

Obesity is a major health problem . It is known for the risk factor for the development of many vital disorder. In this study ,the n –butanolic extract of seed of Syzgium cumini linn.(BESC) and hydroalcoholic extract of fruit of Terminalia chebulia retz. (HETC) have been tested for their anti-obesity property. The extacts were examined for the presence of phytoconstituents ,antioxidant property, digestive enzyme activity, hypoglycemic effect, hypophagic effect and histology of adipose tissue and fatty liver changes by using MSG-HFD induced obesity in swiss albino mice. Animals treated with BESC and HETC have reduced the increase in body weight, periepididmyal fat weight etc. Among these two plants BESC have shown more promising effects compare to HETC. Antiobesity activity produced by BESC is may be because of inhibition of amylase enzyme, antioxidant activity, presence of tannins and flavanoid content. These findings suggest that the antiobesity actions of BESC may be partly mediated by delaying the intestinal absorption of dietary fat. Before carrying out pharmacological activity preliminary phytochemical analysis was carried out . The plants have shown presence of some common constituents like saponins , flavinoids , steroids , tri-terpinoids ,glycosides and anthocyanins .In this study , BESC and HETC are found be beneficial for the suppression of obesity and associated complications.

D-366

Protective Effect of Spermine against Pentylenetetrazole Kindling Epilepsy Induced Comorbidities in Mice

Parladh Ram, Mandeep Kumar and Puneet Kumar
Deparment of Pharmaceutical Sciences and

Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda, Punjab, India
parladhkumar44@gmail.com

Abstract:

This study was designed to investigate the role of nitric oxide pathway in the neuroprotective effect of spermine, in PTZ kindling epilepsy-induced comorbidities in mice.PTZ (35 mg/kg, i.p) were administered on every alternate day up to 29thdays and challenge test was performed on 33rdday. From 15th day spermine (5 and 10 mg/kg, i.p), L-NAME (10 mg/kg; i.p), L-Arginine (50 mg/kg; i.p) and sodium valproate (400 mg/kg, i.p) were administered up to 33rdday, 30 min prior to PTZ treatment. On 30thday animals were trained on elevated plus maze, passive shock avoidance paradigm and tail suspension test and retention was recorded on 31st and 33rd day. Animals were sacrificed on 34thday for biochemical, and neurotransmitters estimation. Pre-treatment with spermine (5 and 10 mg/kg, i.p) significantly reduced the seizure severity, restored behavioral activity, oxidative defense enzymes, and neurochemical imbalance in mice brain. Further L-NAME (10 mg/kg, i.p) pretreatment with spermine (5 mg/kg, i.p) and L-Arginine (50 mg/kg, i.p) pretreatment with spermine (10 mg/kg, i.p) significantly increased and decreased its protective effects. The present study suggest the involvement of nitric oxide pathway in the protective effect of spermine against PTZ-induced kindling epilepsy in mice.

Keywords: PTZ- pentylene tetrazole, L-NAME-n-nitroargininmethyl ester.

D-367

Pain Reducing Potential of Ethanolic Extract of *Trachyspermum ammi*

Saurabh Shrivastava, Abhishek Kumar, Anshita Gupta, Bina Gidwani and Chanchal Deep Kaur
Shri Rawatpura Sarkar Institute of Pharmacy, Kumhari, Durg – 490042, Chhattisgarh, India
saurabhshri1991@gmail.com

Abstract:

Medicinal plants are the richest bioresource of drugs of traditional systems of medicine. Currently, research on medicinal plants has concerned various attentions universally. Numerous authorizations have been accumulated to expose endowed potential of medicinal plant used in various traditional, complementary and alternative systems. *Trachyspermum ammi* (ajwain) is a conventional prospective herb and is widely used for remedial a range of diseases in humans. The fruit have stimulant, antispasmodic and carminative properties. It is a significant counteractive agent for flatulence, atonic indigestion and diarrhea. The aim of the research study was to estimate the promising anti-inflammatory activity of the ethanolic extracts of the *Trachyspermum ammi* (ajwain) to sustain the ethnopharmacological claims. The study was carried out using Swiss albino mice (20-25 g). The ethanolic extracts were prepared using the Soxhlet extraction process. The anti-inflammatory activity of the ethanolic extracts of the fruits of *Trachyspermum ammi* were studied using Acetic acid induced writhing test. The ethanolic extracts at doses of 150, 300 and 600 mg/kg p.o. significantly ($p < 0.05$) inhibited granuloma formation with percentage inhibition values of 37.80, 50.41 and 71.50 respectively. Based on this study, it can be confirmed that *Trachyspermum ammi* is a potentially valuable drug suitable for auxiliary evaluation for rheumatoid arthritis, and its folk medicinal use as an anti-inflammatory agents is validated.

Keywords: Analgesic activity, Writhing, Inflammation, *Trachyspermum ammi*.

D-368

Pharmacological Inhibition of PDE1 by Vinpocetine Attenuates 3-nitropropionic acid Induced Behavioral and Biochemical Abnormalities in Rats

Sandeep Kumar, Rahul Deshmukh and P. L. Sharma
Department of Pharmaceutical Sciences and Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda - 151001, Punjab, India
login2rd@gmail.com

Abstract:

Enhancing cyclic nucleotide signaling by phosphodieterase inhibition (PDEs) has been reported to be beneficial in neurodegenerative disorders. The present study was designed to investigate the effects of vinpocetine (PDE1 inhibitor)

in 3-nitropropionic acid (3-NP) induced experimental Huntington's disease 3-nitropropionic acid was administered for 14 days (10 mg/kg ip) in rats and thsese were animal were treated with vehicle or different doses of vinpocetine (5, 10 and 20 mg/kg ip). Percentage change in body weight and cognitive and motor behavior were assessed at different time points. Biochemically markers of oxidative stress, such as striatal glutathione and melondialdehyde levels were assessed terminally. Chronic administration of 3-NP produced significant decrease in body weight, showed marked abnormalities in cognitive and motor function and increased striatal oxidative stress. Vinpocetine dose dependently attenuated 3-NP induced behavioral and biochemical toxicity. Among the doses selected, vinpocetine at a dose of 10 mg/kg ip was observed to be most effective in improving learning and memory in morris water maze and other motor functions such as grip strength, limb withdrawal and locomotor activity in rats. Further vinpocetine significantly attenuated oxidative stress in 3-NP treated rats. The above results suggesting that the inhibition of PDE1 would be therapeutically beneficial in motor disorders including Huntington's disease.

Keywords: Phosphodiesterase1; Vinpocetine; Motor disorders; Huntington's disease; Oxidative stress.

D-369

Agmatine Attenuates Diabetes Induced Depression in Rats: Involvement of Imidazoline Receptors

Alfy Azhan UR Rehman, Nitu Wankhede, Brijesh Taksande and Milind Umekar
SKB College of Pharmacy, Nagpur, Maharashtra, India
chawdashubham@gmail.com

Abstract:

Several evidences suggest a strong bilinear association between diabetes and depression. However, the exact pathogenesis remains poorly understood. In this study we explored the effect of agmatine in HFD induced anhedonia in rats. Animals were chronically exposed to HFD for induction of T2DM which was confirmed by elevated levels of blood glucose, triglycerides and cholesterol. Sucrose preference test was carried out on day 21 of the protocol and clearly shown reduction in sucrose consumption by HFD exposed animals. These results indicated induction of anhedonia, a core symptom of depression by HFD exposure. The simultaneous treatment of agmatine (10, 20 mg/kg, i.p.) in rats exposed to HFD and subsequently injected with alloxan successfully reduced blood glucose, triglyceride and total cholesterol level and normalised anhedonia. In the separate group, imidazoline-1 (I1) receptor antagonist efaroxan (1 mg/kg, i.p.) was found to attenuate anti-depressant activity of agmatine (20 mg/kg, i.p.) in rats while imidazoline-2 (I2) receptor antagonist idazoxan (10 mg/kg, i.p.) was ineffective. Thus our results clearly implicated the involvement of imidazoline receptors in antidepressant effect of agmatine in HFD treated diabetic rats. Agmatine and its interaction with imidazoline receptors can be a novel therapeutic agent for the treatment of diabetes induced depression and other associated comorbidity.

Keywords: Agmatine, Diabetes, Depression, Imidazoline receptor.

D-370

Antipsychotic Potential of Relaxin-3 Peptide in Rats

Komal Shelke, Madhura Dixit, Brijesh Taksande and Milind Umekar
Department of Pharmacology, Smt. KIshoritai Bhoyar College of Pharmacy, Kamptee, Nagpur – 441002, Maharashtra, India
mayur.kale28@gmail.com

Abstract:

Neuropeptides such as relaxin-3 are attracting increasing interest as targets for the pharmacological treatment of a range of neuropsychiatric diseases. Due to the ability of relaxin-3 to modulate neuronal processes and behaviours such as mood, stress responses and cognition, which are often aberrant in mental illnesses. Thus the present study was designed with the objective to investigate role of RLX-3 in animal models of psychosis. Sprague dawley rats were stereotaxically cannulated within nucleus incertus 2. They were evaluated for psychopharmacological activity through apomorphine induced climbing,

catalepsy and amphetamine induced hyper loco motor activity models for the effect of relaxin-3. Furthermore the involvement of 5HT1A receptor in antipsychotic like effect of RLX-3 was also assessed. Relaxin 3 was found to significantly reduce through apomorphine induced climbing and amphetamine induced hyper loco motor activity but has no effect on catalepsy. 8-OH-DPAT (5-HT1A agonist) when administered alone shows the increased activity and in combination to RLX-3 shows decresed locomotor activity. And while administration of WAY100 635 blocks the effects of 8-OHDPAT, along with RLX-3 exhibits null effect. On this we conclude that antipsychotic like action of RLX-3 is certainly mediated via 5-HT1A receptor system.

Keywords: Relaxin 3, psychosis, nucleus incertus.

D-371

Evaluation of Thymoquinone in Streptozotocin induced Diabetic Complications

Vishu Jain, Shaikh Afroz Abdulgani and Sadhana Sathaye
Department of Pharmaceutical Sciences and Technology, Institute of Chemical Technology, Mumbai, Maharashtra, India
vishujain2993@gmail.com

Abstract:

Background: There are convincing evidences indicating the pathogenetic role of free radicals and associated oxidative stress in the development of diabetic complications. Thymoquinone, a component of *Nigella sativa,* possess significant anti-oxidant activity as well as anti-diabetic effect. **Aim:** The aim of the study is to evaluate the effect of Thymoquinone in attenuating diabetic complications (Retinopathy). **Methodology:** Single intra-peritoneal Streptozotocin injection (45mg.kg) was used for diabetes induction in rats. After 72 hours, rats having blood glucose ≥ 250mg/dl were included in the study. The rats were kept diabetic for 3 weeks for development of complications. Treatment was started from 4th week till 9th week with Thymoquinone (1.25 mg/kg, 2.5 mg/kg and 5 mg/kg). At the end of the experiment, blood glucose and lipid profile were determined. Both the eyes were excised and were used for histopathological screening and biochemical estimations. **Result:** Thymoquinone, at the dose of 1.25 & 2.5 mg/kg, significantly (**P –0.05) (***P –0.001) decreased blood glucose levels, triglycerides and total cholesterol levels. HDL-Cholesterol was significantly (***P –0.001) increased by all the 3 doses of Thymoquinone. The histopathological analysis showed a dose dependent rectification of the anti-oxidant parameters. **Conclusion:** The study established that Thymoquinone plays a major role in attenuating diabetic complications by combating hyperglycemia induced oxidative stress.

Keywords: Diabetic Complication, Oxidative stress, Retinopathy, Thymoquinone.

D-372

Neuroprotective Effect of Caffeic Acid Phenethylester (CAPE) Streptozotocin-Induced Alzheimer's Disease

Devinder Kaur, Harsimran Singh and Nitin Bansal
Department of Pharmacology, ASBASJSM College of Pharmacy, Bela, Rupnagar - 140111, Punjab, India
devinderdangi@gmail.com

Abstract:

Chronic oxidative stress and inflammation severely affect the normal physiology of neurons and lead to neurodegenerative disorders such as Alzheimer's disease (AD). Polyphenols proved a boon in the prevention of dementia due to their antioxidant and neuroprotective potential. Caffeic acid phenethyl ester (CAPE) is a natural polyphenolic compound attributed with antioxidant, immunomodulatory, and neuroprotective properties. The present study investigates the effect of CAPE on experimental dementia in rats. Intracerebroventricle (ICV) injection of streptozotocin (STZ; 3 mg/kg) was given to Wistar rats (200 g, either sex) on days 1 and 3 to induce dementia of AD type. CAPE (3 and 6 mg/ kg, i.p.) was administered to separate groups of rats for 28 successive days daily. Morris water maze and elevated plus maze served as exteroceptive behavioral models to measure the memory of the rats. The present study illustrated that CAPE treatment for 28 consecutive days arrested the development of cognitive deficits in STZ-ICV-treated rats, that is, a significant ($P <$ 0.05) reduction in the mean escape latency during

acquisition trial and increased ($P < 0.05$) time spent in target quadrant during retrieval trial in Morris water maze test and reduction ($P < 0.05$) in transfer latency in elevated plus maze test. Furthermore, both the doses of CAPE when administered to rats that were previously treated with STZ-ICV prevented the rise of brain thiobarbituric acid reactive substance as well as TNF-α and simultaneously enhanced the GSH content. CAPE administration ameliorated STZ-ICV-induced dementia through the attenuation of oxidative stress and inflammation.

D-373

Screening of Ethanolic Seed Extract of Piper Attenuatum (B. HAM) In Streptozotocin Induced TypE 2 Diabetes in 2 DAYS Old Pups

Gaurav Soni and G. Jeyabalan
Department of Pharmacology, Alwar Pharmacy College, Alwar, Rajasthan, India
soni.gaurav09@gmail.com

Abstract:

Diabetes mellitus is a common worldwide metabolic disorder due to decreased physical activity, increased stress, obesity & change in food consumption pattern. It is characterized by chronic hyperglycemia, polyuria, polydipsia, polyphagia and weakness due to disturbance in carbohydrate, fat and protein metabolism& also associated with absolute or relative deficiency in insulin secretion and/or insulin action. In 2004, according to the World Health Organization reports, more than 150 million people throughout the world suffered from diabetes. *Piper attenuatum* (B. Ham.) can cure diabetes as mentioned in the literature survey of traditional Indian system of medicine but not proved scientifically so the aim of the present study is to determine the effect of *Piper attenuatum* (B. Ham.) on diabetes. In our study we induce diabetes in 2 days old pups by using Streptozotocin. Ethanolic seed extract of plant was obtained by Soxhlet extraction. The Ethanolic extract contains active constituent like Piperine, Piperlonguminine etc. It may be possible that Piperine & Piperlonguminine causes anti-diabetic activity. Plant extract causes decrease in total serum glucose, cholesterol, triglycerides level, food and water intake & Increase in body weight in different rat groups when compared to diabetic untreated groups. Histopathology is also carried out for pancreas. The Ethanolic extract of Plant showed significant results in anti-diabetic model. A dose of 200 mg/kg & 400 mg/kg was used. Values are expressed as mean ± S.E.M. Glibenclamide (10mg/kg) was used as standard drug. The total time period of the study was 3 week.

Keywords: Streptozotocin, Glibenclamide, Piper attenuatum (B.Ham), anti-diabetic activity.

D-374

Role of Tranilast (Transient Receptor Potential Vanilloid Type-2Channels Inhibitor) in High Fat Diet Induced Obesity in Rats

Amandeep Kaur, Kamini Rana and Puneet Kumar
Deparment of Pharmaceutical Sciences and Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda, Punjab, India
kaur.amandeep.pbi@gmail.com

Abstract:

Obesity is one of the most serious health problems in developed countries. It negatively affects diverse aspects of human wellbeing. We tested the hypothesis that deactivation of transient receptor potential vanilloid type-2 (TRPV2) by tranilastelevatesobesity. This study investigates the effect of Tranilast (TRPV2 antagonist) on lipid profile and its therapeutic potential against high fat diet (HFD) induced obesity in rats. HFD fed rats showed significant increase in body weight after 60 days as compared to control group rats fed on normal chow diet. HFD was administered for 60 days and Tranilast was administered for the last 30 days, starting from 61st day of HFD administration. Body weight was measured after 15 days. After 60th, 75th and 90th day, blood glucose level was checked and finally, the levels of lipids were measured in HFD fed rats and treated rats. Bioanalysis of dopamine in plasma at 90th day of HFD revealed that dopamine decreased significantly in the obese rats when compared to normal diet-fed mice. Notably, a negative correlation was found between the levels of dopamine and body weight gains. On the other hand, HFD fed

rats showed consistent rise in body weight, lipids, and blood glucose level was observed which was associated with increase in adiposity. However, tranilast treatment significantly increased the HFD-induced metabolic alterations and leads to the development of obesity in rats. Overall, our results suggest that TRPV2 can be a novel target for the treatment of obesity and associated abnormalities.

Keywords: Transient receptor potential vanilloid type-2,high fat diet (HFD) induced obesity, Tranilast, Dopamine, Bioanalysis.

D-375

Studies on the Role of Neuropeptide Y on Complete Freund's Adjuvent Induced Cachexia and Muscle Wasting in Rats

Shraddha Samrit, Dinesh Gawande, Brijesh Taksande and Milind Umekar

Dept of Pharmacology, Smt. Kishoritai Bhoyar College of Pharmacy, Kamptee, Nagpur - 441002, Maharashtra, India

ssamrit70@gmail.com

Abstract:

The cachexia syndrome is characterized by progressive weight loss and depletion of lean body mass. It results from pain, depression or anxiety, hypogeusia and hyposmia, taste and food aversions, chronic nausea, vomiting. Neuropeptide Y is central peptide involved in regulation of cognition, mood ,anxiety, stress sensitivity and immune systems. The present study was hence designed with the objective to investigate the role of NPY in CFA induced cachexia and muscle wasting in rat. Adult male Sprague-Dawley rats were given subplanter injection of CFA (0.1 ml/rat) in the right hind paw for inducing cachexia and muscle wasting. After 8 days induced rats were then treated intracerebroventrically (icv) either by Neuropeptide Y(0.5-1 nmol/rat) or aCSF and evaluated for arthritis score, paw volume and food intake. CFA lead to significant arthritis score (erythema, swelling and ankylosis), increased paw volume, reduced body weight and food intake, which was reduced after treatment with NPY (1 nmol/rat). Thus results states that with more insight NPY can be pharmacologically targeted for management of cachexia and muscle wasting

D-376

Effects of JNK Inhibition on High Fat Diet Induced Metabolic Dysregulation in Wistar Rats

Priyanka, Ankur Garg and Rahul Deshmukh
Department of Pharmaceutical Sciences and Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda – 151001, Punjab, India
login2rd@gmail.com

Abstract:

Implication of C-Jun-N-Terminal kinase (JNK) in insulin resistance and the development of obesity have opened new vistas for development of anti obesity drugs. Although there are only five reports on the functional role of JNK in obesity yet the role and importance of JNK in pathogenesis of obesity cannot be underestimated. The present study was designed to investigate the effect of JNK inhibition in obesity and associated metabolic abnormalities in male Wistar rats. Administration of High Fat diet (HFD) for 12 weeks led to significant increase in food intake, body weight & total fat pad weights. Further these rats also showed significant rise in plasma triglycerides (TGL), total cholesterol (TC) and decrease in HDL-Cholesterol levels and were found to be glucose intolerant following OGTT as compared to standard chow-fed rats. HF fed rats were treated with SP600125, a JNK inhibitor at 2.5, 5, 10 mg/kg *i.p.* daily from 6th to 12th week. SP600125 dose-dependently attenuated HFD induced increase in food intake, body weight & total fat pad weights. Moreover SP600125 treated rats were found to have almost normal lipid profile and found to significant tolerate glucose load in OGTT. The observed beneficial effects following pharmacological JNK inhibition may be due its ability to reduce energy intake in high fat diet fed rats. Thus the present study extends supports for a role of JNK in the development of obesity and associated metabolic abnormalities.

Keywords: SP600125; JNK; Obesity; Diabetes; HFD; Lipid; experimental obesity; Dyslipidemia.

D-377

Role of Biological Clock

Preet Pal Singh and Abhishek Dabra
Guru Gobind Singh College of Pharmacy, Yamuna Nagar, Haryana, India
preetpal533@gmail.com

Abstract:

Most of the vegetative, hormonal and behavioural functions of the human organism operate under the biological control of a circadian clock which responds to environmental and social stimuli, synchronizing the organism's physiology to daily and seasonal rhythms. Circadian rhythms describe biological phenomena that oscillate with an ≈24-hour cycle. These rhythms include blood pressure, body temperature, hormone levels, the number of immune cells in blood, and the sleep-wake cycle. . The underlying anatomic structures are located in the suprachiasmatic nucleus and the pineal gland. Although the precise physiologic mechanisms involved are still under study, melatonin is known to play a major role for example. Several signs of impaired function have been identified: various types of sleep disorders, memory and concentration impairment, dysphonia, asthenia, irritability. Seasonal recurrence of such signs and frequent depressive complications are also suggestive of a disorder in the circadian clock. Knowledge of specific clinical signs and biological parameters will undoubtedly lead to the discovery of other disease states dependant on the circadian clock and to the development of therapeutic strategies capable of regulating the organism's chronobiology. . According to the current understanding of the circadian system in mammals, there are a number of so-called peripheral clocks in the body which are regulated by the central clock in the SCN. Taking advantage of the MAP-induced internal desynchronization, attempts have been made to identity the peripheral clock(s) regulating the sleep-wake cycle. The nigrostriatal dopaminergic system is a possible site of the behaviour-associated peripheral clock.

Keywords: circadian clock, sleep-wake cycle, chronobiology , peripheral clocks , nigrostriatal dopaminergic system.

D-378

Review of Various Molecular Targets on Mast Cells and Its Relation to Obesity: A Future Perspective

Souravh Bais and Nilesh J. Patel
Department of Pharmacology, Rayat Institute of Pharmacy, Ropar, Punjab, India
souravh2008.123@rediffmail.com

Abstract:

Mast cells are critical effectors in the development of allergic diseases and in many immunoglobulin E-mediated immune responses. These cells play an important role in various immunological and metabolic diseases. The aim of present article is to explore the molecular targets to suppress the over expression of mast cells in obesity. The last 20 years literatures was carried out by searching bibliographic data bases such as Pubmed, Scopus, Google scholar and web of science. The data were collected by keywords like "Mast Cell" "obesity" and "role of mast cell or role in obesity" without narrowing or limiting search items. Publications with **Abstract:**s were reviewed only. Total publications found in initial research were 827, in which 87 publications were considered for study and remaining were excluded because of its specificity to the subject. This review explains the characteristics, molecular targets and role of mast cells in obesity. The article also presents the existing research with mast cells to the area of metabolic diseases.

Keywords: Mast Cells; Obesity; Molecular targets; Adipose tissue.

D-379

Comparative Assessment of Bioavailability and Anxiolytic Activity of Luteolin and Its Lipid Based Delivery System

Mohammed Junaid Khan, Swarnlata Saraf and Shailendra Saraf
Department of Pharmacy, Sarguja University, Ambikapur - 497001, Chhattisgarh, India
junaid1010@gmail.com

Abstract:

Luteolin is a well-known flavone compound

found in many medicinal plants. It is having poor aqueous solubility and is extensively metabolized in the intestinal mucosa, which restrict its potential as a successful medicine. In the present work we have prepared a phospholipid complex of luteolin (LPC) by solvent evaporation method with an objective to improve its pharmacokinetic profile. Moreover, we also evaluated the improvement in well-known anxiolytic activity of luteolin as phospholipid complex. The prepared complex showed particles having average particle size of 130nm as observed by zeta sizer. Pharmacokinetic parameters in rats were determined and the anxiolytic activity was assessed by using elevated plus maze test, hole board test and open field test. The interaction of drug and LPC with benzodiazepine (BZD) receptor complex was also evaluated. The results of FTIR, thermal and diffraction studies confirmed the formation of complex. LPC showed an increase in relative *in vivo* bioavailability to about 335.31% of pure luteolin and also demonstrated a sustained pattern of drug release. Both the drug and LPC showed significant anxiolytic activity however, the activity of LPC was found to be more significant than pure drug and was comparable with standard drug Diazepam. In the radio ligand binding study both the drug and LPC inhibited this radio ligand binding to the rat cerebral cortex membranes with a *K*i of 55.6µm and 57.2µm respectively. To conclude the LPC successfully improved the bioavailability of luteolin with a related improvement in anxiolytic potential.

Keywords: luteolin, anxiety, phospholipid complex, nanoparticle.

D-380

An outlook on Different Channels of ADR reporting in India

Ismeet Kaur, Prabhakar Mishra, V. Kalaiselvan and G.N. Singh

National Coordination Centre - Pharmacovigilance Programme of India, New Delhi, India

ishunarang12@gmail.com

Abstract:

To safeguard patient health and promote rational medicine use, Ministry of Health and Family Welfare, Government of India launched a nationwide Pharmacovigilance Programme of India in July 2010. Realizing the importance of Pharmacovigilance in recent years, the NCC-PvPI has established a wide network with different genre of healthcare professionals and the outreach of PvPI to 250 ADR Monitoring Centers (AMCs). To encourage the culture of spontaneous reporting, India has launched different channels of ADR reporting for its accessible reach. This will help to build and strengthen the national centre of excellence at par with global drug safety monitoring.

Keywords: Adverse Drug Reaction, PvPI.

D-382

In Vivo Cytogenotoxicity of Industrial Waste from Different Industry, West Bengal, River State, Indian Allium Cepa

Kaustuv Chakrabarti, Soumyadeep Ghosh and Manas Chakraborty

Bharat Technology, MAKAUT, Uluberia, Howrah - 711316, West Bengal, India

kaustuv1996@gmail.com

Abstract:

The present study investigates the genotoxic, mutagenic, & cytotoxic potential of surface water in urban streams using *Allium cepa* and analyses the applicability of this assay for environmental monitoring. The importance of *Allium cepa* test contributes knowledge in preventing toxicity in the environment. This test widely used in determining genotoxic and cytotoxic substances found in the water system. In this study, the genotoxic effects of CH_2O (Formalin) were determined using *Allium cepa* root tip cells while the water samples collected from the industrial of West Bengal viz. Hasnabad, Andul, Hooghly, Uluberia and some industry areas were also tested for genotoxicity. Onion (*Allium cepa* L.) a potential biomarker of genotoxic studies widely used as a bio indicator of genotoxicity from the different aquatic environs. This test helps to evaluate mutagens and detecting toxic substances

found in the environment. Also, it is known as a fundamental biomarker to evaluate environmental pollution. This test is one of the many methods for detecting and measuring the degree of alterations in the system subjected to carcinogens/mutagens or chemical causing damage and allow to describe the effects of these damages by observing chromosomal aberrations. This test widely used to study the toxicity and genotoxicity of many dangerous contaminants, such as pesticides, azo dyes, food preservatives and hydrocarbons. Furthermore, plant roots are extremely useful in biological testing because root tips are the first to be exposed to toxicants dispersed in soil or in water Moreover, the root tip chromosomal aberration assays constitute rapid and sensitive methods for bio-monitoring from the extent of pollution and to evaluate the effects of toxic and mutagenic substances in the natural environment. In this study, CH_2O (Formalin) were used as a positive control and distilled water was used as negative control,while the water samples collected from the industrial areas of West Bengal viz. Hasnabad, Andul, Hooghly, Uluberia and some industrial areas, were also tested for genotoxicity result of this study confirmed that the water samples exerts significant genotoxic effects. From the four water samples, we found that,Hasnabad's water is most toxic one.

Keywords: Mitosis,*Allium cepa*meta phase test, Genotoxicity, environmental toxicology.

D-383

Investigation on the Effect of Psychosocial and Psychophysical Stress on the Transcellular Intestinal Permeability of Venlafaxine - A SNRI

Anshul Namdev, Pankaj Mangroliya, Pankaj Dixit and Neelam Balekar
IPS Academy College of Pharmacy, Rajendra Nagar, Indore – 452012, Madhya Pradesh, India
anshulnamdev745@gmail.com

Abstract:

Exposure to stress is reported to have major effects on the pharmacokinetics of any orally administered drug, including various anti-stress agents. Venlafaxine is a recently approved anti depressant that is being approved for used in stress disorders. Recently, it was reported by us that oxidative stress induced by H_2O_2 increases paracellular transport of drugs across rat intestine while transcellular transport remains unchanged. Hence, in continuation, present study aimed to investigate the effect of psychosocial and psychophysical stress on apparent permeability of Venlafaxine in male rats. Herein, the stressor was selected to closely resemble real life situation. Studies were performed on Wistar rats; crowding stress model and electric foot shock model were employed for stress induction. Permeability was estimated in stressed and non-stressed rats by using everted rat intestine apparatus. Mean apparent permeability of Venlafaxine was found to be 53.668± 6.77 x 10^{-6} cm/sec in ileum and 75.93±12.55x 10^{-6} cm/sec in jejunum of non-stressed rats. Results revealed that psychosocial and psychophysical stress did not alter the intestinal permeability of Venlafaxine, substantiating our previous findings that acute stress exposure does not alter the transcellular transfer of drugs across small intestine.

Keywords: Psychosocial stress, Psychophysical stress, Pharmacokinetics, Bioavailability.

D-384

Knowledge of Drug Regulation in India among Pharmacy Students: A Questionnaire Based Survey

Riya, Ruchika Sharma and Anoop Kumar
Department of Pharmacology, Indo-Soviet Friendship Pharmacy College (ISFCP), Moga, Punjab, India
riya.c.1994@gmail.com

Abstract:

Introduction: Drug regulation plays a major role to provide safe and effective medications to the public. In India, Central Drugs Standard Control Organization (CDSCO), Ministry of Health & Family Welfare, Government of India provides general information about drug regulatory requirements. However, Knowledge of Drug Regulation among Indian Population is very low even Pharmacy students have very less knowledge regarding these regulations. Thus, this study was undertaken to

analyze the knowledge of Drug Regulation among Pharmacy students of ISF College of Pharmacy. **Material and Methods:** A questionnaire based survey was conducted in ISF college of Pharmacy, Moga, Punjab, covering all undergraduate, graduate and postgraduate students to assess their knowledge regarding drug regulation. The Consent has been taken from each participant before conducting this study. **Results and Discussion:** There were 10 different parameters/data points for which the data was collected from 200 students in ISF College of Pharmacy, Moga, Punjab. Descriptive statistics were used for analysis of data. **Conclusion:** The knowledge of drug regulation among Pharmacy students is varying according to their level of education and type of course. The Pharm D and M. Pharm final year students have good knowledge regarding drug regulation as compare to undergraduate students.

Keywords: Drug Regulation; Under Graduate Students; Post Graduate Students; Attitude.

D-385

Determination of Permeability of Drugs using a Modified Permeability Apparatus

Krishna Agrawal, Shaily Chaudhary and Neelesh Malviya
Smriti College of Pharmaceutical Education (SCOPE), 4/1 Pipliya Kumar Kakad, MR-11, Dewas Naka, Indore, Madhya Pradesh, India
krishnaa996@gmail.com

Abstract:

There are many methods available to determine the permeability of drugs out of which one model is recently standardized i.e. the everted rat intestine apparatus. With some modification in the apparatus the permeability of some drugs was determined. Six samples in triplicate were taken and analyzed using UV spectrophotometer. After analysis and calculation of data obtained from permeability apparatus and UV spectrophotometer the apparent permeability of drug was determined. In this study propranolol and verapamil were taken to determine their apparent permeability. Propranolol and verapamil were gifted by Ipca laboratories Limited, Ratlam, India. A zero permeability marker phenol red was purchased from Loba Chemie Pvt Ltd., Mumbai, India. Freshly prepared double distilled water was used. Eggs were purchased from local market and artificial membrane of 0.45 µm (Pall Life Sciences, Mumbai, India) was used. All other chemicals were of analytical grade throughout the experiment. A little modification is done in the everted rat intestine apparatus (Dixit et al, 2012). (Fig.1a). Instead of using whole apparatus a part of apparatus is used (Fig. 1b). The modified apparatus is 48 mm in length, upper opening is of 17 mm and lower opening is of 2 mm in diameter. The study is also useful in the understanding of absorption kinetics of the same drug which can be performed in future studies. The method was validated with the help of a zero permeability marker phenol red. The verapamil and propranolol was selected for the study due to the high permeability of drugs.

Keywords: Permeability, Propranolol, Absorption kinetics, Everted rat, Intestine.

D-386

Evaluation of Analgesic Activity of *Nyctanthes Aculeata craid* Bark

Tamil Selvan P, Suresh V, Thamotharan G and Logeshwaran V
Department of Pharmacology, JKKMMRF's College Of Pharmacy, Tamil Nadu, India
tamiluma37@gmail.com

Abstract:

Theleavesof Nyctanthesaculeata craidbeing used in the treatmentof Ayurvedic physician. For evaluating Analgesic activity of this plantby using Eddy'shot plate. Albinorats were divided into different groups of three animals each. Testgroup were treated orally with aqueous extract ofLiquiddosageform of test sample. The hot platesciatica and arthritis, are advocated for various kinds of fevers and painful condition by maintained at 55.0±0.50oc. The latency was recorded after 1hr,2hrs,3hrs after the administration of the test and standard drug. The standarddrug Pentazocine(10mg/kg)used.The test group receivedalcoholic and aqueous extract of Nyctanthes aculeate craid 400mg and 200mg

respectively. It showsthesignificantincreasein latencytimeascomparedto control. Pentazocineshowed significant ($p<0.001$) analgesic activity at the dose of 10mg/kg, i.p.

Keywords: Nyctanthes aculeata craid, Pentazocine,eddy's hot plate, Analgesic.

D-388

Knowledge, Attitude and Practice towards Adverse drug reactions among Pharmacy students: A Cross-Sectional Study in ISF College of Pharmacy

Mohmmad Mamtaj Alam, Ruchika Sharma and Anoop Kumar
Department of Pharmacology, Indo-Soviet Friendship Pharmacy College (ISFCP), Moga, Punjab, India
mamtajalam80@gmail.com

Abstract:

Introduction: In literature, various studies have reported regarding adverse drug reaction of drugs but in Pharmacy students very few knowledge regarding ADRs. Thus, this study was designed to assess the Knowledge, Attitude and Practice towards Adverse drug reactions among Pharmacy students of ISF college of Pharmacy, Moga. **Material and Methods:** A questionnaire based survey was conducted in ISF college of Pharmacy, Moga, Punjab, covering all kind of students. The questionnaire was given to 300 pharmacy students. Descriptive statistics were used for analysis of data. **Results and Discussion:** Out of 300 students, 270 completed the questionnaire with a response rate of 90%. The Knowledge, Attitude and Practice towards Adverse drug reactions of final year was> fourth year > third year > second year >first year respectively. Pharm D students have more knowledge as compare to B. Pharm. **Conclusion:** Majority of students has good knowledge regarding adverse drug reactions but there is lack of positive attitude towards reporting of adverse drug reactions. Further, practice regarding ADRs reporting is very low which indicate to increase in future by conducting seminar regarding Pharmacovigilance.

Keywords: Adverse drug reactions; Pharmacy students; Attitude; Practice.

D-389

Total Antioxidant Capacity and Free Radicals Scavenging Activities by *Chenopodium Album* Linn.

Pradeep Sangwan, Vishal Mathur, Mohit and Mangal Sain Hooda
Janta College of Pharmacy, Butana - 131302, Sonepat, Haryana, India
saggi990@gmail.com

Abstract:

Root part of *Chenopodium album* were extracted by using solvents of different polarities and explored for their *in-vitro* free radical scavenging activities. Preliminary assays of both different extracts of *Chenopodium album* were performed by reduction of molybdate and scavenging with 1, 1-diphenyl-2-picrylhydrazyl (DPPH) stable free radicals in concentration dependent manner (10-500µg/ml). It was observed from the *in-vitro* antioxidant studies that hydro and hydro-alcoholic root extracts scavenged the DPPH stable free radicals and showed maximum scavenging activity at concentration of 400µg/ml, beyond this biphasic effect was observed with reduced scavenging activity. Hydro-alcoholic extract of root showed maximum antioxidant activity. Hydro-alcoholic and hydro extracts of root showed 72.29 and 62.29% antioxidant activities respectively. Hydro-alcoholic root extract caused a significant reduction of molybdate to 64.77% at concentration of 600µg/ml. The significant correlations existed between extract concentrations and percentage scavenging activity of radicals in all *in-vitro* antioxidant models. All *in-vitro* anti-oxidant studies were performed on UV spectrophotometer. These results clearly indicate that hydro alcoholic extract of Chenopodium *album* have effective antioxidant activity *in-vitro* system.

Keywords: *Chenopodium album* Linn, Antioxidant, DPPH, Free radical scavenging, Bathua sag.

D-390

Antioxidant Capacity and Free Radicals Scavenging Activities of *Cucumis callosus* (Rottl.) Cogn

Mangal Sain Hooda, Rakesh, Banti and Rishi Pal
Janta College of Pharmacy, Butana – 131302, Sonepat, Haryana, India
mhooda1968@gmail.com

Abstract:

The aim of present study was to estimate the *in vitro* antioxidant activity of *Cucumis callosus* (Rottl.) Cogn (*Cucurbitaceae*) fruits which are commonly known as "Kachri" were extracted by using solvents of different polarities and explored for their *in-vitro* free radical scavenging activities. Preliminary assays of both different extracts of *Cucumis callosus* were performed by reduction of molybdate and scavenging with 1, 1-diphenyl-2-picrylhydrazyl (DPPH) stable free radicals in concentration dependent manner (10-500µg/ml). It was observed from the *in-vitro* antioxidant studies that hydro and hydro-alcoholic fruit extracts scavenged the DPPH stable free radicals and showed maximum scavenging activity at concentration of 500µg/ml. Hydro-alcoholic extract of fruit showed maximum antioxidant activity. Hydro-alcoholic and hydro extracts of fruit showed 79.15 and 69.34% antioxidant activities, and caused a significant reduction of molybdate to 74.77 and 50.05% at concentration of 600µg/ml respectively. The significant correlations existed between extract concentrations and percentage scavenging activity of radicals in both *in-vitro* antioxidant models. All *in-vitro* anti-oxidant studies were performed on UV spectrophotometer. These results clearly indicate that hydro alcoholic extract of *Cucumis callosus* fruits have effective antioxidant activity *in-vitro* or in a cell free system.

Keywords: *Cucumis callosus*, Antioxidant, DPPH, Free radical scavenging, Fruits.

D-391

Pharmacist Intervention For Anti Psychiatric Drugs Induced Pseudo Parkinsonism In Schizophrenic Patients`

Gattu Rohith and D. Varun Kumar
Sri Indu Institute Of Pharmacy, Sheriguda, Jntu, Hyderabad, Telangana, India
rohithgattu007@gmail.com

Abstract:

Schizophrenia is a complex,chronic mental health disorder characterized by symptoms like delusions,hallucinations,disorganized speech or behavior,and impaired cognitive ability (positive symptoms).Negative symptoms include reduced expression of facial,reduced feelings,sustaining activities and reduced speaking.Abnormal activity at dopamine receptor sites (specifically D2) is thought to be associated with many of the symptoms of schizophrenia.Anti psychiatric medications are used for the dopamine receptor antagonist properties.They could induce a clinical syndrome that resembled Parkinson's disease(i.e Pseudo parkinsonism) .Consisting of extra pyramidal symptoms like hypomimia,hypophonia,drooling, resting tremor,rigidity,bradykinesia, shuffling and unsteady gait.The DSM –IV-TR research criteria for antipsychiatric induced parkinsonism include at least one of three cardinal symptoms of parkinsonian tremor,musculary rigidity and akinesia developing within a few weeks after starting raising the dose of neuroleptic or reducing a medication used to treat extra pyramidal symptoms.The movement disorders associated with antipsychotics are distressing and result in behavioral disturbances,non adherence and exacerbation of psychosis.

Keywords: schizophrenia,bradykinesia,hypomimia, hypophonia,drooling.

D-392

An Overview on *Diospyrosmalabarica*

Peet Thomas, P. Vengalrao and Praveen T. Krishnamurthy
Department of Pharmacology, JSS College of Pharmacy, Ooty - 643001, Tamil Nadu, India

(A constituent college of Jagadguru Sri Shivarathreeshwara University, Mysure, India)
peetthomas@gmail.com

Abstract:

The medicinal uses and chemical constituents of various Diospyros species are now reviewed. About 300 organic chemicals have been isolated and identified. The uniqueness of the genus is the elaboration of a large number of pentacyclic triterpenes and juglone based 1, 4-naphthoquinone metabolites. These metabolites can be used as chemical markers for taxonomic studies. It is a long lived, very slow growing tree, which can reach up to 35 m in height with a black trunk up to 70 cm in diameter. It is used for the treatment of such diseases like cancer, rheumatoid arthritis, liver diseases and atherosclerosis as well as in degenerative processes associated with ageing is the consequence of various metabolic activities in our body that results in the formation of the free radicals. Antioxidant compounds play an imperative role as a health defending factor and are defined as free radical scavengers.

Keywords: Diospyros, Antioxidant, Allopathy and Diameter.

D-393

Cardioprotective Potential of Hedgehog Pathway against Ischemia Reperfusion Injury In Ovariectomized Rats

Shweta Sharma and Saurabh Sharma
Cardiovascular Division, ISF College of Pharmacy, Moga - 142001, Punjab, India
shweta1992sr@gmail.com

Abstract:

Objective: This study was designed to investigate the cardioprotective potential of Hedgehog pathway against Ischemia reperfusion (I/R) injury in estrogen deficient myocardium. **Methods:** Female wistar rats were underwent bilateral ovariectomy and subjected to Ischemia/Reperfusion protocol after 28 days. Heart was isolated and mounted on Langendorff's apparatus, subjected to 30 min of ischemia followed by 120 min of reperfusion. Ischemic Preconditioning (IPC) was mediated by four cycles of 5 min ischemia and 5 min reperfusion. Myocardial injury was assessed in terms of increase in infarct size, LDH, CK-MB, TBARS and MPO level of the isolated perfused rat heart. TNF-α level was measured by ELISA kit, eNOS expression was estimated by rt-PCR. **Results:** Preconditioning with HH agonist Purmorphamine and Estradiol significantly reduced myocardial infarct size, release of LDH and CK-MB level in coronary effluent in ovariectomised rat heart. Purmorphamine and Estradiol has also decreased the MPO activity, TNF-α and TBARS level and elevated eNOS expression in normal and ovariectomised rat heart. However, the effect of Estradiol was abrogated by GDC-0449 (HH antagonist). GDC-0449 blocked the protective effect of IPC and Estradiol mediated preconditioning in ovariectomized rat heart. **Conclusion:** Therefore, it is concluded that Hedgehog pathway has a pivotal role in estrogen mediated preconditioning in myocardium.

Keywords: Hedgehog, Ischemic preconditioning, Ischemic reperfusion injury, Ovariectomy.

D-394

Herbal Drugs Used In the Treatments of Diabetes Mellitus

Ankita Dhiman, Bhavneshwari, Pratiksha and Shalini Kumari
Abhilashi College of Pharmacy, Tanda, Ner chowk, Distt Mandi – 175002, Himachal Pradesh, India
ankitadhiman410@gmail.com

Abstract:

Diabetes mellitus is a dreadful metabolic disorder characterized by high blood sugar levels found in almost all parts of the world and is becoming a serious threat to mankind health. Currently number of drugs has used for the treatment of diabetes mellitus which includes insulin and oral hypoglycemic agents. These drugs acts by either increasing the secretion of insulin from pancreatic β-cell or by reducing plasma

glucose concentrations by increasing glucose uptake and decreasing gluconeogenesis. However these drugs are not free from side effects such as hypoglycemia, kidney diseases, GIT problems, hepatotoxicity, heart risk problems, insulinoma and they have to take rest of life. Alternative to these drugs different plants provide a potential source of hypoglycemic drugs and are widely used to prevent diabetes. Herbal medicines have been highly esteemed source of medicine throughout the human history. Various herbal drugs have been also proved effective due to their beneficial contents in treatment of diabetes. The present review therefore is an attempt to focus on the physiological aspects of diabetes, its complications, goals of management, and synthetic and herbal treatment of diabetes.

Keywords: Diabetes mellitus, Complication, Herbal treatment.

D-395

Neuropharmacological Profile Study of Eucalyptus Terticonis

Biswajit Paikaray, Prashant Tiwari and Pratap Kumar Sahu
School of Pharmaceutical Sciences, Siksha O Anusandhan University
Bhubaneswar, Odisha, India
bpaikaray14@gmail.com

Abstract:

The present study is undertaken to study behavioral profile (Awareness, mood and motor activity) of methanolic extract of *E. tereticornis*. In this procedure mice after administration of methanolic extract are observed for an initial undisturbed phase followed by phases in which they are subjected to mild to increasing stimuli. Methanolic extract of *E. tereticornis* was administred orally (100 mg/kg, 500 mg/kg and 1000 mg/kg) and mice were examined for behavioural profile studies till 1, 2 3 and 4 hours as per Iwrin's test. The effects of the test substances on the animal were scored on a scale of 0 to 8. The basic score for normal signs or effects was given 4; scores below 4 were for subnormal responses and those above for supernormal. The obtained result suggested that *E. tereticornis* showed CNS stimulant effect. So, based on the acute toxicity studies and neuropharmacology profile studies the dose of the crude extract can be decided for the further pharmacological action studies.

Keywords: Neuropharmacology, *Eucalyptus tereticornis*, Behavioural profile.

D-396

Nano Engineering Cellular Environments

G.Arun, A. Sushmita and Ch. Malathi Suvarna
Gland Institute of Pharmaceutical Science, Sy. No: 551, Shangri-la, Kothapet (village), Shivampet (Mandal), Medak - 502220, Telangana, India
arun0419guda@gmail.com

Abstract:

A nanotechnology engineer seeks to learn new things that can change the face of health science technology and the environment on a molecular level they test for pollutants create powders to enrich our foods and medicines and study the smallest fragments of DNA .Cellular environments Biological environments present a very crowded highly complex environment in which proteins and nucleic acids have to maintain structure and carry out their function. If and how exactly such an environment effects bio-molecules compared to dilute solvent or crystal conditions under which bio-molecules are often studied remains largely unclear. The reduction of space leads to the well-known volume exclusion effect that generally favors more compact states under crowded conditions. But resent experiments and computer simulation suggest that non-specific protein –protein interactions, Cell adhesion to nano digital surfaces: engineering of the cellular micro-environments has become a valuable means to guide cellular activities such as spreading motility differentiationProliferation or apoptosis. This chapter summarizes recent approaches to surface patterning such as topography and chemical patterning from the micrometer to the nanometer scale and illustrates their application to cellular studies. Particular attention is devoted to nanolithography with self-assembled diblock copolymer micelles that are biofunctionalized with peptide ligands-a method that offers unsurpassed spatial resolution

for the positioning of signaling molecules over extended surface areas. Such interfaces are defined here as "nano-digital surfaces" since they enable the counting of individual signaling complexes separated by a biologically inert background. The approach enables the testing of cellular responses to individual signaling molecules as well as their spatial ordering.

D-397

Effect of Omega-3 fatty acid on Memory

Aseem Setia, Poorti Sharma, Jhakeshwar Prasad, Ashish Kumar Netam and Trilochan Satapathy
Columbia Institute of Pharmacy, Vill-Tekari, Near Vidhansabha, Raipur, Chhattisgarh, India
aseemsetia77@gmail.com

Abstract:

Omega -3 fatty acids are long chain, polyunsaturated fatty acid of plants and marine origin because these essential fatty acid can not be synthesized in the human body, they must be derived from dietary source. Omega -3 fatty acid are vital for normal metabolism but some of potential health benefits of supplementation are controversial. There is tentative evidence that marine omega polyunsaturated fatty acids reduce the risk of breast cancer but this is not conclusive on human. Omega 3 fatty acids on rats inhibit the development of premalignant and malignant lesions which may be due to anti-inflammatory, antioxidant, anti-proliferative and anti-angiogenic properties. Omega-3 fatty acids are components of fats in foods we eat. Alpha-linolenic acid, eicosapentaenoic acid and decosathexaenoic acid are three types of omega -3 fatty acid. Omega -3 polyunsaturated fatty acids have essential role in brain development function and beneficial effects of omega -3 PUFA. Treatment have consistently been demonstrated in a variety of hippocampal-dependent tasks. Omega -3 fatty acids prevent against heart diseases, diabetes and also against dementia and Alzheimer's disease and slows ageing and reduces depression levels, risk of cancer and improves blood cholesterol level and bone strength. Omega fatty acids are seem to be "panacea" for good health, found in fishes such as salmon , herring, soybean, pumpkin seeds, spinach, walnuts and salad greens omega fatty acids can be easily included in your diet. Many clinical studies shows about omega that it has good anti inflammatory property.

Keywords: Alzheimer's disease, malignant, anti-proliferative and anti- angiogenic.

D-398

Pathophysiology and Management Of Epilepsy

Himanshu Pandey, Shivsankar Shukla and Ravindra Pandey
Columbia Institute of Pharmacy, Tekari, Raipur – 493001, Chhattisgarh, India
himanshu.pandey603@gmail.com

Abstract:

Epilepsy is a group of neurological disorders characterized by recurrent seizure followed by spontaneous resolution, loss of conscious with or without characteristic body moment. These episodes can result in physical injuries including occasionally broken bones; the cause of most cases of epilepsy is unknown. Epileptic seizures are the result of excessive and abnormal nerve cell activity in the cortex of the brain. There are six main types of generalized seizures: tonic-clonic, tonic, clonic, myoclonic, absence, and atonic seizures. They all involve loss of consciousness and typically happen without warning. The exact mechanism of epilepsy is unknown,[57] but a little is known about its cellular and network mechanisms. However, it is unknown under which circumstances the brain shifts into the activity of a seizure with its synchronization. Epilepsy is usually treated with some medication called anticonvulsant and can be taken daily in order to prevent seizure, in some case implantation of stimulator of the vague nerve or special diet can be helpful in management of epilepsy.

Keywords: Epilepsy, Seizure, Tonic, Clonic, Atonic, Myoclonicv, Anticonvulsant.

D-399

Neuroprotective Herbs: Ameliorate the Treatment of Autism Spectrum Disorders

Digvijaya, Divya and Shivani
Department of Pharmacology, B.S. Anangpuria Institute of Pharmacy, Faridabad, Haryana, India
digvijaya159@gmail.com

Abstract:

Autism spectrum disorders (ASD) are a group of neurodevelopmental disorderscharacterized by social and language deficits, stereotypic behavior, and abnormalities in motor functions. Neuropathology of ASD which suggests abnormalities in the amygdala, temporal and frontal cortexes, hippocampus, and cerebellum.Oxidative stress in autism has been studied at the membrane level and also by measuring products of lipid peroxidation, detoxifying agents (such as glutathione), and antioxidants involved in the defense system against reactive oxygen species (ROS). Lipid peroxidation markers are elevated in autism, indicating that oxidative stress is increased in this disease. Levels of major antioxidant serum proteins, namely transferrin (iron-binding protein) and ceruloplasmin (copper-binding protein), are decreased in children with autism. There is a positive correlation between reducedlevels of these proteins and loss of previously acquired language skills in children with autism. Several studies have suggested alterations in the activities of antioxidant enzymes such as superoxide dismutase, glutathione peroxidase, and catalase in autism.As most of the biochemical anomelies in Autism are associated with elevated oxidative-stress .So, many herb can target "high oxidative-stress"and"immune dysfunction" to improve the behavioral aberrations and oxidative markers in Autism.The various studies reveal that Vit.C and flavonoids- hesperidin, lycopene, neuringenin etc. present in herbs act as a very good anti-oxidant, anti-inflammatory and neuroprotective.

Keywords: Autism Spectrum Disorders, Anti-oxidants, Neuroprotective.

D-400

In Vitro of Anthelmintic Activity of Ethanol Leaf Extract of *Desmodium Triangulare* (Retz) Merr

Gayathiri P, Thamotharan G, Arun Prasanth S and Madhan R
Department Of Pharmacology, JKKMMRF'S ANNAI JKK Sampoorani Ammal College of Pharmacy, B. Komarapalayam – 638183, Tamil Nadu, India
gayasami97@gmail.com

Abstract:

The escalating pervasiveness of anthelmintic resistant strange of helminths, drug residues in animal products and high cost of conventional anthelmintics has created and interest in studying medicinal plants as an alternative source of anthelmintic. The plant *Desmodium triangulare* have great medicinal value and reported as astringent, carminative, laxative and diuretic properties. The ethanol leaf extract of *Desmodium triangulare* were screened for anthelmintic activity on pheretima posthuma (earth worm) in comparison to reference standard albendazole. A significiant anthelminitic effects were absorbed on live adult pheretima posthuma worms in terms of the paralysis and death of the worms at different concentrations. The potency of the various concentrations of extracts was evaluated by time taken for paralysis and death of earthworms after treatment with the test drugs (25, 50, 75 mg/ml) and compared with the reference drug albendazole. The ethanol leaf extract of plant ***Desmodium triangulare*** at higher doses of 75 mg/ml has shown significant activity was comparable to the reference drug.

Keywords: ***Desmodium triangulare*** Anthelmintic, Pheretima posthuma, albendazole, ethanol leaf extract.

D-401

Phytochemical & Pharmacological Evaluation of Secondary Metabolities Obtained From Selected Medicinal Plants and Development of Polyherbal Formulation for Different Inflammatory and Arthritis Models In Rats

Mohammad Sahil and Tara Sankar Basuri
Department of Pharmaceutical Sciences, Vanivihar, Bhubaneswar, Odisha, India

University

sahilmd.16794@gmail.com

Abstract:

The anti-arthritic activity of root & bark extracts *Vetiveriazizanioides&sterblusasper*was studied in rats.

Root & bark extracts *Vetiveriazizanioides&sterblusasp er*were collected and dried in shade and subjected for successive extraction with petroleum ether, ethyl acetate, and chloroform, methanol using soxhlet apparatus and distilled water by maceration. Each extracts were then subjected for preliminary phytochemical studies and pharmacological investigation. The acute toxicity studies were carried out according to the up and down method of CPCSEA guidelines No. 425 and anti-arthritic activity by Fruendsadjuant arthritis model. All the extracts have exhibited significant anti-arthritic activity. Poly herbal formulation of various extracts of both the plant was done and anti arthritis activity was done on these poly herbal extracts.

(Key words – extract,phytochemical,adjuvant,polyhe rbal,toxicity)

D-402

Agmatine Attenuates Resilience to Repeated Restraint-Stress in Rats: Involvement of Imidazoline Receptor

Shubhangi Vaidya, Mayur Kale, Brijesh Taksande and Milind Umekar
Smt. Kishorotai Bhoyar College of Pharmacy, Kamptee, Nagpur, Maharashtra, India
shubhangivaidya12@gmail.com

Abstract:

In present study immobilization stress using restrainer results in number of behavioral and biochemical alterations such as change in food intake, imparement in learning and memory, increase in blood glucose level, increased serum alkaline phosphatase level and adrenal hypertrophy. Agmatine had been reported to play crucial role as anxiolytic, neuroprotective, memory facilitation, and antidepressant and endogeneous modulator of stress. This study is planed with an objective to explore the role of agmatine and imidazoline receptors in resilience to repeated restraint stress in rats. In present study, animals are subjected to immobilization stress using restrainer 3 hours a day for 15 days and evaluated for various behavioral and biochemical changes mentioned above. Dose dependant study of agmatine (10 µg/rat, 20 µg/rat, 40 µg/rat and 80 µg/rat) revealed that agmatine (20 µg/rat) showed significant decrease than agmatine (10 µg/rat, 40 µg/rat and 80 µg/rat) in stress induced feeding behavior, alteration in learning and memory, blood glucose level, serum alkaline phosphatase level and level of adrenal hypertrophy. Study of I2 agonist 2-BFI (100 nmole/rat) alone and its combination i.e. 2-BFI (50 nmole/rat) with agamatine (10 µg/rat) showed significant decrease in above mentioned paradigms than moxonidine (20 nmole/rat) alone and its combination i.e. moxonidine (10 nmole/rat) with agmaitne (10 µg/rat). Individual study of I1 and I2 antagonist efaroxan (100 nmole/rat) and idazoxan (100 nmole/rat) showed no significance change in paradigms mentioned above. Combination study of efaroxan (100 nmole/rat) with agmatine (20 µg/rat) showed significant decrease whereas combination of idazoxan (10 nmole/rat) with agmaitne (20 µg/rat) showed no significant change in above mentioned paradigms. Hence the above finding clearly indicates the role of agmatine and involvement of imidazoline receptors system predominantly I2 receptors in mechanism of resilience to repeated restraint stress.

Keywords: Agmatine, repeated restrain stress, imidazoline receptor.

D-403

In Vitro Hypolipidemic Activity of *Pouzolzia Zeylanica (L.)Benn*

S. Baby Vanitha and B. Jaykar
Department of Pharmacology, Vinayaka Mission's College of Pharmacy, Salem – 636008, Tamil Nadu, India
vanithabprakash@gmail.com

Abstract:

Aqueous extract from *PouzolziaZeylanica(L.) Benn* was investigated for its effect on anti-cholesterol activity. In vitro anti-cholesterol activity was measured by cholesterol enzymatic end point method using Simvastatin as positive control. Increasing anti-cholesterol activity by *PouzolziaZeylanica(L.) Benn* was observed upto 20 minutes and a maximum inhibition was found as 85.04% which was comparable to anti-hyperlipidemic drug Simvastatin (95.1%). The results indicated that *PouzolziaZeylanica* might reduce or

control the cholesterol levels.

Keywords: *PouzolziaZeylanica(L.) Benn* ,Randox reagent, Simvastatin.

D-404

Monoclonal Antibodies in Cancer Therapy

Nitesh Kumar and Deepika Purohit
Department of Pharmaceutical Sciences, Indira Gandhi University, Meerpur, Rewari - 123401, Haryana, India
niteshrao807@gmail.com

Abstract:

According to WHO's report, cancer is the second leading cause of death globally and was responsible for 8.8 million deaths in 2015. It is expected that the value will rise about 70% over the next two decades. In India the cases of cancer are estimated to be about 1.75 million by 2020. Several methods are available for the treatment of cancer including surgery, radiotherapy, chemotherapy and immunotherapy which basically includes treatment with monoclonal antibodies (MAb). MAbs are prepared by using hybridoma technique in which lymphocyte obtained from draining lymph node of mice immunized over a 10 day period with antigen injected into the foot pads were used for cell fusion. By pre-incubation of hybridomas, yield can be increased 10 times. Monoclonal antibodies are introduced into the body which binds with the antigens. Once the antibody attaches to these antigens, this will attract the immune cells for immune response. The first monoclonal antibody for the treatment of cancer approved by USFDA in 1997 was "rituximab" for targeting C**D-20** antigen prepared by the company IDEC Global after which the 2nd monoclonal antibody "trastuzumab" got approval by USFDA in 1998 and increased the interest and success of this approach. Around 23 monoclonal antibodies has been approved by USFDA till January 2017. Most recently "atezolizumab" got approval for targeting PD-L1 antigen on 18 May, 2016. MAbs are being modified by fragmenting with radioisotope "ArcituMAb" fragments with technetium 99 for the treatment of metastatic colorectal cancer. MAb are also being mixed with chemotherapy to form antibody drug conjugates like "Ado-trastuzumab" (TDM1) which targets "HER2" protein attach to a chemo drug "DM1" which is used to treat breast cancer. The MAb technique is better than chemotherapy because chemotherapy is non-specific in nature (could target non cancerous cells) while MAb are specific in their action. The MAbs could be proved very affective mean for cancer treatment in future with proper advancements.

Keywords: Cancer, chemotherapy, monoclonal antibodies, antigen, rituximab.

D-405

Pre-Clinical Evaluation of Poly-Herbal Formulation for its Anti-diabetic Effect On Experimental Animals

Vikas B. Gawali, Niraj S Vyawahare, Maheshali Undale and Bharati Zaware
Abasaheb Kakade College of Pharmacy, Bodhegaon, Shevgaon - 414 503, Maharashtra, India
vikasgawali07@gmail.com

Abstract:

Polyherbal formulation (PHF) containing different herbs have been used to treat diabetic patients by ayurevedic practitioners in India. The present study reports the effect of PHF on different rat models of hyperglycemia. PHF treatment given significant hypoglycemic effect on epinephrine hyperglycemia and alloxan diabetic rats.PHF treatment also altered glucose tolerance curve pattern both in normal and diabetic rats. Further, PHF treatment increased liver glycogen, glucose transfer in liver, enhanced glucose uptake process in peripheral muscles. The hypoglycemic effect of PHF may be mediated through pancreatic as well as extra pancreatic systems. This can be presumed to the enhanced insulin secretion, which in turn able to activate glycogen synthase. In diabetic rats, glucose uptake process is decreased as compared to normal rats.Further, PHF seems to be useful in

diabetes mellitus and needs to be investigated the combination with metformin on different animal subjects to establish such potentiation hypoglycemic effect.

Keywords: Poly-Herbal Formulation, Antidiabetic activity, Glucose metabolism, Glucose utilization.

D-406

Evaluation of *Chloroxylon Swietenia* Dc Bark Extract on Alloxan Induced Diabetic Nephropathy in Wistar Rats

Manpreet Singh and Madam L. Kaushik
Department of Pharmacoogy, CT Institute of Pharmaceutical Sciences, Shahpur, Jalandhar-144020, Punjab, India
arora.manpreet.ms@gmail.com

Abstract:

The aim of present study was to investigate the anti-diabetic effect ofmethanolicbark extract of*Chloroxylonswietenia*DConalloxaninduceddiabetic nephropathy in Wistar rats.Diabetic nephropathy is a significant cause of chronic kidney disease and it is associated with significant morbidity and mortality due to decline in the glomerular filtration rate (GFR) & elevated arterial blood pressure. The end-stage of diabetic nephropathy is renal failure. The bark of *C. swietenia* was collected, shade dried and dried material was extracted with methanol by percolation method.Alloxan 120mg/kg.i.p. was used to induce the diabetic nephropathy in rats. Phytochemical study was performed of methanolic extract. The result indicate that the presence of bioactive constituents like alkaloids, carbohydrates, proteins, amino acids, tannins, flavonoids and terpenoids. The standard drug Glibenclamide 10mg/kg/.i.p./day was administered to rats. The test drug methnolic bark extract of C.swietenia were given orally in the different grade of doses 125, 250 and 500mg/kg/day for 28 days. The results indicate thatthe methanolic bark extract of C. *swietenia* showed significant inhibition of Cholesterol, Triglycerides and creatinine level compared with control group. The body weight and bun nitrogen urea were significantly improved in all drug treatment group compared with control group.Histopathologcal study show the protective effect compared with control. This research article evidence the retinoprotective nature of methanolic extract of *Chloroxylon swietenia* DC on alloxan induced diabetic rats by restoring the normal architecture of the kidney tissue.

Keywords: Retinoprotective, Diabetic nephropathy, Kidney,Glibenclamide.

D-407

Anti Convulsant Effect of Putrescine- A Polyamine in Mice

Parveez Muzaffar, Firdos Khan, Pankaj Dixit and Neelam Balekar
IPS Academy College of pharmacy, Rajendra Nagar, Indore – 452012, Madhya Pradesh, India
parvaizvar36@gmail.com

Abstract:

Epilepsy, a serious neurological disorder is associated with huge economic, social and personal costs due to uncontrolled seizures, in spite of pharmacotherapy. This stems the need for more research for this area. Putrescine is a polyamine with pleotropic actions and literatute documents its differential effects on various ion channel and epileptic seizures. Therefore the study aimed to investigate the effect of putrescine administration on epileptogenisis in different paradigms i.e maximal electroshock seizure, isoniazide induced seizures and PTZ induced seizure. It was observed that putrescine at a dose of 100 mg/kg protected 80% mice agaist MES. In INH and PTZ induced seizure the recovery at 100 mg/kg was 100%. In conclusion, this study documents a anticonvulsant potential of putrescine in different animal models of epilepsy.

Keywords: MES, Pharmacotherapy, Epileptogenesis.

D-408

A Study on Monitoring and Detection of Adverse Drug Reaction at Govt. District Head Quarters Hospital (GHQH), Ooty

Anjali K, S. Ponnusankar and Manu Mathew
Department of Pharmacy Practice, JSS College of Pharmacy, Ooty, Tamil Nadu, India

anjalisethumadhavannn@gmail.com

Abstract:

This research assessed Adverse Drug Reactions (ADRs) among the patients of a secondary care hospital. The objectives of the study was the detection of ADRs , provide drug information relevant to suspected drug reaction to doctors and educate the patient about the ADRs, prevention of further reaction and also encourage the healthcare professionals to report ADRs and to assess the reported ADR by using Causality Assessment Scale . Patients who admitted in hospital and admitted due to ADRs were observed and included in the study. All the necessary and relevant data collected from in-patient and out-patient case notes, treatment chart, laboratory data reports, patient interview, and reporter interview. Various factors such as the Patient demographics, most commonly affected organ system, types of ADRs; outcome of management related to ADRs, seriousness, causality, preventability and severity assessment of ADRs were taken into account. The Statistical data was assessed by using SPSS 20 version Software. Chi Square test was used for checking the significance of various parameters like Age and Gender. The value of $p < 0.05$ was considered as statistically significant. Study concluded that the highest percentage of ADRs was seen in adults, being statistically significant when compared with other Age groups. Type H (58.3%) reactions accounted for majority of reports. Dermatological System (59.2%) was the most commonly affected Organ System. Majority of the ADRs were preventable by education and promotes health professionals for reporting ADRs. Majority of reports were rated as Probable according to the Naranjo's causality assessment scale.

Keywords: Adverse drug reaction, pharmacovigilance, Naranjo's Causality assessment scale, Modified Hartwig and Siegel assessment scale.

D-409

Mechanism of Immunoprotective Effects of A-Tocopherol in DLM Induced Splenic Apoptosis

Rishabh Kumar, Ruchika Sharma and Anoop Kumar
Department of Pharmacology, Indo-Soviet Friendship Pharmacy College (ISFCP), Moga, Punjab, India
rishabhdaksh@gmail.com

Abstract:

Introduction: α-Tocopherol is the most active form of the vitamin E that has several biological roles. However, the exact molecular mechanism of its action is not fully understood. Thus, the primary aim of this study is to determine the contribution of α-tocopherol in counteraction of the apoptogenic signaling pathways induced by deltamethrin in murine splenocytes. **Material and Methods:** The mice has been scarified by cervical dislocation and prepared the cell suspension. After that, cell has been counted by using haemocytometer and density was adjusted to $1.5*10^6$cells/ml. Finally, various parameters such as cytotoxicity (MTT assay), oxidative stress (ROS and Glutathione measurement), caspases (DEVD-AFC method) and apoptosis (cell cycle analysis) has been measured by using suitable methods. **Results and Discussion:** DLM (25μM) induces splenocytes apoptosis at 18h through oxidative stress and caspase dependent pathways. MTT assay results have shown that α-tocopherol (1, 10 and 50 μg/ml) when added along with DLM (25μM), increases cell viability in a concentration dependent manner. The early activated markers of apoptosis such as enhanced reactive oxygen species (ROS) and caspase-3 activation are significantly

reduced by α tocopherol treatment. GSH depletion induced by DLM has been also restored by α tocopherol treatment. At 18h, all concentration of α tocopherol (1, 10 and 50µg/ml) significantly ameliorated the DLM induced apoptosis. n: These findings strongly indicate that αtocopherol shows immunoprotective effects in DLM induced splenic apoptosis by inhibiting oxidative stress and caspase dependent apoptogenic signalling pathways.

Keywords: Cytotoxicity; Oxidative stress; Caspases; Apoptosis.

D-410

Pharmacological Investigations of Ursolic Acid in Chronic Restraint Stress Induced Insulin Resistance in Mice

Amandeep Kaur

University Institute of Pharmaceutical Sciences, Nabha, Punjab, India

ad5474883@gmail.com

Abstract:

Chronic restraint stress or immobilisation is an easy and convenient method to induce both psychological and physical stress resulting in restricted motility and aggression. Stress activates HPA axis, renin-angiotensin system (RAS) pathway and sympatho-adrenal system (SAS). But stress for longer periods leads to HPA axis fatigue which is involved in activation of inflammatory pathways. Activation of other systems like RAS and SAS are involved in the production of pro-inflammatory cytokines. Increased pro-inflammatory cytokines during stress cause negative regulation of insulin signalling either by phosphorylating serine residues of IRS or by inhibiting the activity of Akt leading to insulin resistance. In the study, male albino Laca mice (20-30g) were restrained individually for 2 hours daily at variable time periods between 9:00-17:00 hrs for 30 days. The ursolic acid and its combination with metformin were administered 45 min prior to the animals being subjected to chronic restraint stress (CRS) and continued for 30days. The inflammatory effect was examined on CRS-induced behavioural, biochemical and metabolic alternations. CRS for 30 days developed insulin resistance characterised by hyperglycaemia,increasedglycosylatedhaemoglobin (hbA1C), increased inflammatory cytokines like TNF-alpha and IL-alpha, increased corticosterone levels, hyperinsulinemia, decreased body weight, reduced glutathione, hyperlipidemia. Treatment with ursolic acid, and metformin attenuated stress-induced insulin resistance. Synergic effect was found when ursolic acid was in combination with metformin via anti-inflammatory actions.

D-411

Evaluation of Ethanolic Extract of *Ottelia Alismoides (L.)* Pers on the Pain Threshold Response in Stz Induced Diabetic Neuropathic Pain Model in Rats

G. Sumithira, V. Kavya, V. Ganesan and B. Krishnamurthy

Department of Pharmacology, The Erode College of Pharmacy and Research Institute, Erode- 638112, Tamil Nadu, India

allimalarshnmgm70@gmail.com

Abstract:

The present study was designed to evaluate the Ethanolic extract of *Ottelia alismoides* on the pain threshold response in STZ induced diabetic neuropathic pain model in rats. To the overnight fasted rats, diabetes was induced by single dose of STZ (55mg/kg, b.w., i.p) injection dissolved in 0.01 M citrate buffer at pH 4.5. Before STZ injection the basal reaction time were taken in different behavioural

models. After STZ injection the drug treatment was started from week 4 onwards and continued upto 8th week. All the group were treated with insulin except vehicle treated group to maintain plasma glucose levels. Behavioural assessments like thermal hyperalgesia and allodynia were performed at 4th, 6th & 8th week. At end of the study period all the experimental animals were sacrificed followed by the biochemical and oxidative stress were evaluated in sciatic nerve tissues. Animals treated with plant extract of *EEOA* significantly decreased blood glucose level and restore the reduced body weight and organ weights. The plant extract exhibited significant decrease in oxidative stress and increase in endogenous antioxidant enzyme levels. After 8th weeks of treatment of *EEOA* produced more significant anti-nociceptive activity as compare to pregabalin. Treatment of insulin did not alter behavioural parameters. Histopathological analysis indicated that plant extract of *EEOA* corrected the sciatic tissue in the diabetic rats. Thus, from this study we concluded that the plant extract exhibits significant antidiabetic, antioxidant and neuroprotective activity against STZ induced diabetic neuropathy in rats.

Keywords: Diabetic neuropathy, Streptozotocin, Pregabalin, *Ottelia alismoides*.

D-412

Zika Virus: Emerging Infectious Disease

Sajan Kumar and Rashmi Sharma
Lord Shiva college of Pharmacy, Sirsa, Haryana, India
sajaninsan15725@gmail.com

Abstract:

Zika virus is a mosquito borne flavivirus that is the focus of an ongoing pandemic and public health emergency. Zika virus (ZIKV) has two lineages: African and Asian. Flaviviruses are thought to replicate initially in dendritic cells and then spread to lymph nodes and the blood stream. Risk for infection through blood transfusion, sexual practices and perinatal transmission exists. The possible routes of perinatal transmission are during delivery, breastfeeding and by close contact between the mother and her newborn. There are two types of ZIKV infection; Zika fever and congenital infection. The clinical feature could be mistaken for dengue or chikungunya fevers. Microcephaly is the most important and frequently reported clinical picture of suspected congenital Zika syndrome. RT-PCR is the most well-liked assay. Serum samples are tested by immunoglobulin G ELISA with ZIKV antigen. Samples are also tested by immunoglobulin M ELISA. Neither an effective treatment nor a vaccine is available for Zika virus; therefore, the public health response primarily focuses on preventing infection, particularly in pregnant women. Despite growing knowledge about this virus, questions remain regarding the virus's vectors and reservoirs, pathogenesis, genetic diversity, and potential synergistic effects of co-infection with other circulating viruses. These questions highlight the need for research to optimize surveillance, patient management, and public health intervention in the current Zika virus epidemic.

Keywords: Zika virus, Microcephaly, Serologic tests.

D-413

CYP Testing To Help Prevent Dangerous Adverse Drug Reactions

Salmanul Faris A and Ateendhra Jha
Department of Pharmacy Practice, Srinivas College of Pharmacy, Mangalore - 574143, Karnataka, India
salmanulfarisadiyattil786@gmail.com

Abstract:

The cytochrome P450 enzyme system consist of a super family of hemoproteins that catalyse the oxidative metabolism of a wide variety of exogeneous chemicals including drugs , carcinogen, toxins and endogenous compounds such as steroids , fattyacids and prostaglandins. Clinical problem varies with

interindividualvariabilities in drug responses. Genetic polymorphisms and polymedication modulating drug-metabolising enzyme activities (cyp450, CYP) are identified as sources of variability in drug response. With this test we are giving an awareness about ADR monitoring among medical practitioners. From the data containing 80 members of medical practitioners out of which 50 members are not aware about CYP test. From this study we realized that more than 50 % of medical practitioners are not familiar with this test. So the medical practitioners should have keen knowledge about CYT testing to improve quality of life. CYP test is focused on enzyme polymorphism in drug oxidation and conjugation as risk factor for toxicity.

Keywords: Cytochrome P450, Drug metabolism, Genetic polymorphism, Adverse drug reaction.

D-414

Living Donor Kidney Transplantation in the United States Looking

Nirmal Joshi and Dheeraj Bisht
Department of Pharmaceutical Sciences
Bhimtal Campus Bhimtal, Kumaun University
Nainital-263136, Uttarakhand, India
krishna792006@rediffmail.com

Abstract:

There is a desperate need for kidney donors. Twenty-five years ago, we urged more wide spread acceptance of unrelated living donors for kidney transplantation. Since then, two of us have donated a kidney to an unrelated recipient. In our view, the major challenges for living donor transplantation today are to improve access to this extraordinary gift of life and ensure its safety. Our perspective is that altruism is the motivation for most living kidney donors and the decision to donate represents a shared responsibility among the donor, the donor's physician, and the team of professionals at the transplant centre. Thus, sound knowledge of the benefits and risks to donors and recipients is required for informed decisions, and all parties share in the responsibility for the outcomes after living kidney donation. We encourage our colleagues and agencies within the US Department of Health and Human Services to accept the responsibility to do their utmost to provide access to this life enhancing procedure and systematically evaluate the safety of kidney donation as it evolves to meet the needs of more of our patients.

D-415

Evaluation Of Antibacterial Activity of *Shorea Robusta Resin* By Zone Inhibition

Shrikant M. Darekar, S. Jayakumari and S. S. Shyale

Department of Pharmacology, H.S.B.P.V.T. College of Pharmacy, Kashti, Dist. Ahmednagar, Maharashtra, India

shridarekar@gmail.com

Abstract:

To the best of our knowledge antibacterial activity of aqueous alcoholic extract of Shorea robusta resin against enteric pathogens have not been reported so far. Aqueous & alcoholic extracts of *shorea robusta resin* were prepared. Five concentrations of each extracts (10 mg/ml, 20mg/ml, 30mg/ml, 40mg/ml & 50 mg/ml) were tried against the enteric pathogens by Agar diffusion method. Wide zones of inhibition were observed at 40 mg/ml concentration of extract. Aqueous extract showed wider zone of inhibition when compared to alcoholic extract. Aqueous extract showed wider zones of inhibition for, Staphylococcus aureus.

D-417

Gene Therapy: A Valuable Tool to Treat Genetic Disorders

Tarun Kapoor and Shamsher Singh
Department of Pharmacology, ISF College of Pharmacy, Moga - 142001, Punjab, India
tarunkumar.tk677@gmail.com

Abstract:

Gene therapy is an experimental tool that utilizes genes (hereditary unit) to treat genetic disorders. Presently, this technique provides therapeutic outcomes to treat genetic disorders by altering gene functioning instead of using drugs or surgery. Firstly this technique was came into existence in 1960s and in 1972, Theodore Friedmann

and Richard Roblin govern the role of "Gene therapy for human genetic disease." After in 1970 that "good DNA" could be used to replace defective DNA in people with genetic disorders. In this carrier used for gene insertion was retrovirus correct human ADA gene to the cells. In this the normal ADA genes were delivered to immature blood cells isolated from the babies' umbilical cords. Recent advancement in immunology, molecular biology, and bioinformatics has yielded extensive information on the pathophysiological mechanisms of autoimmunity. Now a days its widely perceptible for treatment of blood and vascular system disorders, for orthopedics problems as well as for cancer ailment. Recent studies have immunodeficiency (SCID) and Leber's congenital amaurosis. At present, three main gene therapy strategies for treatment of investigated potential applications of gene therapy in correcting genetic diseases, treating severe combined cancer are application to oncolytic viruses like suicide-gene therapy and gene-based immunotherapy. Recently in March 2017, French scientists treated sickle-cell disease through gene therapy. FDA has also approved tisagenlecleucel for acute lymphoblastic leukemia. So, because of long term side effects of radiopharmaceuticals and nuclear medicines, gene therapy is widely acceptable technique for helming genetic disorders.

Keywords: gene therapy, retrovirus, bioinformatics, Leber's syndrome.

D-418

Recent Advancement in the Treatment of Rheumatoid Arthritis

Vikash Sharma, Raj Kumar Tiwari, Ravindra Pandey and Shiv Shankar Shukla
Columbia Institute of Pharmacy, Raipur, Chhattisgarh, India
vikassharma10588@gmail.com

Abstract:

Rheumatoid arthritis (RA) is the most common autoimmune inflammatory arthritis in adults. Rheumatoid arthritis is an inflammatory arthropathy with multi-organ involvement. In India Arthritis affects 15% people i.e. over 180 million people in India. This prevalence is higher than many well known diseases such as diabetes, AIDS and cancer. it carries a vast cost to individual and society. There are over 100 rheumatological disorders classified by World Health Organization. Shortage of trained rheumatologists in India has led to management of these diseases by untrained doctors, practitioners of alternative medicine and quacks. Insufficient appreciation of rheumatological problems appears to be due to lack of knowledge about these conditions. The patient suffers from a disabling arthopathy, increased prevalence of co-morbid conditions such as atherosclerotic disease, as well as reduced participation in society and resultant impact on quality of life. There are a number of medicinal approaches has been developed. Still it requires some advancement for the control of the disease. In the present study we have gone through the recent advancement in the approaches for the treatment of this complication. This review article has the prospects for the professionals working in this area.

D-419

An Updated Overview on Pharmacognostical and Pharmacological Screening of Tecoma Stans

Kamalesh Mistry and Bibhu Prasad Moharana
Jeypore College of Pharmacy, Rondapalli, Jeypore, Odisha, India
kamaleshmistry143@gmail.com

Abstract:

The using of natural plants in treatment purposes are the nowadays most familiar than synthetic products because synthetic drugs can cause many of the side effects and the adverse effect. The Tecomastansare one of the plants which are available in most of the tropical countries. In this plant is already used in the traditional medicine in

some of the countries like India, Pakistan, etc., this plant belongs to the family of Bignoniaceae. This plant is having the many of the active chemical constituents and pharmacological effects. Many of the researchers are studied the pharmacological screening and the current research is going in that plant. The aim of this review was the updated research collections of this plant for its pharmacological screening. The review the on various researchers like pharmacognostical study and the in vitro and in vivo screening of various parts of Tecomastans. In this review was concluded that the various parts of the plants are having various pharmacological actions like anti-inflammatory, analgesic, anticancer cardio-protective effect, genotoxic, cytotoxicity, wound healing, anti-hyperglycemic, protect CNS, gastric ulcer healing, antiproliferative, antioxidant, anti-microbial, hemolytic activity, anti-lipoxygenase and acetyl-cholinesterase inhibitory activities. And this review was used to develop the future research on this plant.

D-420

Wound Healing Enhancement Potential of Eugenol in Streptozotocin Induced Diabetic Rats

Soni Rupesh and Srivastava DN
DDM College of Pharmacy, Gpndpur Banehra (Upper)-177213, Distt. Una, Himachal Pradesh, India
rupeshsoni77@gmail.com

Abstract:

Diabetes is the primary inducer of many physiological defects inside the body including delayed healing of wounds. Person suffers from diabetes are very susceptible for any physical or biological damaging of tissues in the body. These wounds are taking long time with difficulty in healing. The rats were made diabetic by i.p. injection of streptozotocin at a dose of 45 mg/kg in wistar albino rats. The diabetic rats having blood glucose level more than 300 mg/dl selected for implementation of wound models. The incision wound model was applied in diabetic rats by cutting 10 cm long incision on back side of diabetic rat. The eugenol was isolated from ethyl acetate soluble fraction of ethanolic extract of cinnamomum tamala and administered orally at a dose of 50 mg/kg for 10 days. After completion of 10 days treatment of eugenol. Tensile strength was calculated for measurement of wound breaking strength by using tensiometer. The Wound breaking tensile strength of sutured wound was obtained highest inside rats treated with oral dose of eugenol 50 mg/kg as compared to control diabetic rats treated with non-drug containing plain vehicle only. On the basis of above biological experiment one can conclude that eugenol isolated from ethyl acetate soluble fraction of ethanolic extract of cinnamomum tamala is having principal role for enhancement of wound repair by healing incision wounds in diabetic rats.

Keywords: Diabetic wound, Incision, Tensile strength, Eugenol, Cinnamomum tamala, streptozotocin.

D-421

Pleiotropic role of Cytochrome C in cellular life and Death

Jhakeshwar Prasad, S. Prakash Rao, Trilochan Satapathy and Bibhas Pandit
Columbia Institute of Pharmacy, Vill-Tekari, Near Vidhansabha, Raipur, Chhattisgarh, India
jhakeshwarprasad03@gmail.com

Abstract:

Cyt *c* (Cc) is a small soluble hemeprotein found loosely associated with the inner membrane of the mitochondrion of the cell. Cytochrome c is highly water-soluble, unlike other cytochromes, and is an essential component of the electron transport chain, where it carries one electron and capable of undergoing oxidation and reduction, but does not bind to oxygen. It transfers electrons between Complexes-III (Coenzyme Q – Cyt C reductase) and Complexes-IV (Cyt C oxidase). Cytochrome c also has an intermediate role in apoptosis. Cytochrome c binds to cardiolipin in the inner mitochondrial membrane, thus anchoring its presence and keeping it from releasing out of the mitochondria and initiating apoptosis. During the early phase of apoptosis, mitochondrial ROS production is stimulated, and cardiolipin is oxidized by a peroxidase function of the cardiolipin–cytochrome c complex. One of the ways cell apoptosis is activated

is by release of cytochrome c from the mitochondria into cytosol. Several studies suggest that, cells are able to protect themselves from apoptosis by blocking the release of cytochrome c using B-cell lymphoma-extra large Bcl-x_L which is encoded by the BCL2-like 1 gene and is a transmembrane molecule in the mitochondria. Another way that cells can control apoptosis is by phosphorylation of Tyr48 which would turn cytochrome c into an anti-apoptotic switch.

Keywords: Cytochrome c, Apoptosis, Cardiolipin, Cell death.

D-422

Norovirus Infection

Jagriti Kumawat
Chitkara College of Pharmacy, Chandigarh-Patiala highway, Rajpura - 140401, Punjab, India
savetrees786@gmail.com

Abstract:

The clinical importance of noroviruses has increased in recent years. It is challenging to control the annual gastroenteritis and vomiting outbreaks caused by noroviruses in hospital wards and also long term care facilities. Thus problem is partly due to the repeated emergence of highly penetrant genotype GII. Consequently, this led to an increased awareness of norovirus receptor selection and the population immunity characteristics that drive the evolution of virus. Noroviruses mainly transmit from person to person by the feco-oral route and also via food, water and environment fomities. It is also known as infectious diarrhoea, is inflammation of gastrointestinal tract that involves stomach and small intestine. International surveillance helps in source-tracking and in being able to follow the dissemination of viruses with food products in addition to the early detection of emerging variants.

D-423

Inhibitory Influence of Agmatine on B-Amyloid Induced Impaired Learning and Memory Impairment in Mice

P U Raut, H Garmelwar, M P Dixit, N R Kotagale and M J Umekar
Smt. Kishoritai Bhoyar College of Pharmacy, Kamptee, Nagpur, Maharshtra, India
prachiraut.2016@gmail.com

Abstract:

The study was designed to determine the effect of agmatine on Aβ induce learning and memory impairment. Aβ was injected in lateral ventricle and agmatine was chronically administered on day 1-14 at doses [10, 20 and 40mg/kg, i.p.]. Learning and memory was monitored on the 14th day by using Morris water maze and novel object recognition test. Agmatine levels were also analysed during the course of diseases. Agmatine significantly increased the time spent in platform quadrant, decreased the escape latency, increased the number of entries in the platform quadrant and number of crossing over platform in Morris water maze compared to control animals. In novel object recognition test agmatine improves % preference for novel object. The result demonstrated the beneficial effect of agmatine on Aβ induce learning and memory impairment in mice. The results support the use of agmatine in Alzheimer disease.

Keywords: Aβ, learning and memory, Alzheimer, Agmatine.

D-424

Rising Trends in Nomophobia among Youth

Rai Ankit, Vashist Swati, Sanduja Mohit and Gupta Jyoti
School of Pharmaceutical Sciences, M.V.N University Palwal, Haryana, India
rai680861@gmail.com

Abstract:

Nomophobia is the irrational fear of being without your mobile phone or being unable to use your phone for some reason, such as the absence of a signal or running out of minutes or battery power. A phobia is by definition an irrational fear. Indian scenario considering the tremendous increase in the number of mobile phone users in the past decade. Mobile phones were originally seen as a gadget for communication but currently, the internet enabled mobile phones have become an integral part of our daily life. Their benefits are

incomparable but at the same time, they have some negative effects too.clinical characteristics of nomophobia are a considerably decreased number of face-to-face interactions with humans, replaced by a growing preference for communication through technological interfaces, keeping the device in reach when sleeping and never turned off, and looking at the phone screen frequently to avoid missing any message, phone call, or notification (also called ringxiety).

D-425

Emerging Role of Various Signalling Pathways in the Pathogenesis And Therapeutics of Atherosclerosis

Yash Prashar and Nilesh J. Patel
Shree S.K. Patel College of P'ceutical Education & Research, Mohali, Punjab, India
yashprashar@gmail.com

Abstract:

Atherosclerosis is a leading cause of mortality and morbidity in the western world. It is no longer a disease attributed mainly to the high lipid content of the body but has come to be regarded as a chronic inflammatory disease with an autoimmune component. Studies which explore the interactions between molecular and cellular elements generally focus on pathophysiologic aspect of atherosclerosis. The focus has now shifted to the novel risk factors and the genetic predisposition which has further broadened the pathogenetic mechanisms. Hence, It's high time to understand these processes in depth so that new markers and treatments which target mechanisms specially inflammation which is now the most exact cause of atherosclerosis. Moreover, the diagnosis and management is the guiding element in the understanding, progression of chronic diseases like atherosclerosis.Therefore, targeting and understanding of biochemical pathways would help in more accurate diagnosis and management of disease. Additionally, the use of antihyperlipidemic and anti-inflammatory drugs for the treatment of atherosclerosis was only possibility but it had average results. Henceforth, delving into newer areas or novel drug targets like endoglin receptor, PPARα, squalene synthase, thyroid hormone analogues, scavenger receptors, Leucotriene receptors, calcium signaling, Pentraxin, nitric oxide, heat shock proteins, Liver X Receptors, shear stress pathway, CD14, endotoxin signaling, and nuclear factor kappa B give better treatment
possibilities to control the process of atherosclerosis

D-426

Sildenafil: A potential Drug for the Treatment of Neuropathic Pain

Indu Malkani, Sakshi Panchal, Bimlesh Kumar, Sachin Kumar Singh and Amarjeet Singh
School of Pharmaceutical Sciences, Lovely Professional University, Punjab, India
ikshitamelkani@gmail.com

Abstract:

Pain arises due to primary sensory neurons (C fibre and Aδ, respond to intense thermal or mechanical stimuli) and inflammation, which is a consequence of trauma to neuronal and peripheral tissues. Dysfunctional pain, such as neuropathic pain that results from direct injury to the nervous tissue (e.g., nerve transection), central nervous system and spinal cord. Sildenafil is PDE5 inhibitors, is giving so it acts like, GTP converted to cGMP and activate guanylyl cyclase. It is inhibiting the increased cyclic guanosine monophosphate (cGMP) followed by increasing the GABA activity. Monitoring of neuropathic pain is used by many parameters like Mechanical (Grip muscles Test, Pin prink test), chemical (Acetone Drop test) and Thermal (Heat hyperalgesia test, Heat allodynia test and Tail immersion test). This review will give information that approaches to treat neuropathic pain by potential therapeutic agent i.e. Sildenafil.

Keywords: Sildenafil, neuropathic pain, PDE5 inhibitor.

D-427

Studies On Some Novel Synthetic Chloroquinolin Hybrids as Anti-Breast Cancer Agents

Vishal Sharma, Pratima Shrivastav, Kaushik Neogi and Prasanta Kumar Nayak
Department of Pharmaceutical Engineering and Technology, IIT (Banaras Hindu University), Varanasi

- 221005, Uttar Pradesh, India
vishals.phe16@itbhu.ac.in

Abstract:

Among all cancers, breast cancer is the most common among female population that affects 25–33 in 100,000 urban population and 7.2 in rural population. Chemotherapy is an important component of adjuvant treatment for breast cancer, but the drawbacks of current chemotherapeutic drugs have further promoted the search for alternative drugs that confer maximum effect and are less harmful to patients. In the present study, two series of chloroquinolin hybrids (BY-1 to BY-15 and NBY-1 to NBY-15) have been screened against breast cancer cell lines (MDA-MB-231 and MCF-7). The chloroquinolin hybrids were first screened out against active binding site of enzymes, aromatase and DNMT by molecular docking studies. Out of 30 compounds, 12 compounds showed meaningful interaction (based on G Score and hydrogen binding) and therefore selected for cytotoxicity studies. Cell number in each well was determined using the SRB assay. Potencies (IC50) were quantified by SRB Assay and compared with IC50 of doxorubicin. The IC50 values of BY and NBY series compounds against MDA-MB-231 were as follows: BY-4 (8.916 µM), BY-11 (7.260 µM), NBY-6 (10.54 µM), NBY-7 (7.546 µM), and doxorubicin (2.938 µM). Similarly, IC50 values of the same compounds against MCF-7 cell line were as follows: BY-4 (3.264 µM), BY-11 (3.153 µM), BY-12 (3.466 µM), NBY-6 (4.080 µM), NBY-7 (3.040 µM), NBY-11 (6.186 µM), and doxorubicin (2.764 µM). Further studies are required to gain insight into the molecular mechanisms through which chloroquinolin hybrids produce their cytotoxicity activity and evaluate their side-effect potential.

Keywords: Chloroquinolin hHybrids, Srb assay, Breast Cancer.

D-428

Objective, Approaches and Importance of Molecular Docking: An Overview

Kinshuk Bhojwani, Bibhas Pandit and Swapnil Lall
Columbia Institute of Pharmacy, Tekari, Raipur, Chhattisgarh, India
coolbuddykinshuk@gmail.com

Abstract:

Molecular docking is a key tool in computer-assisted drug designto investigate the binding affinity of two interaction species i.e. the interaction between a protein-ligand, protein-protein, and protein-DNA molecule. The information obtained from the docking technique can be used to suggest the binding energy, free energy and stability of complexes. Computer-assisted drug design can be of structure-based or ligand-based. In the ligand-based drug designthe use of Molecular docking tool is indispensible to predict the probable structure of the ligand required to bind with the targeted protein molecule. The docking approach can be used to model the interaction between a ligand and aprotein at the molecular level, which allow us to characterize the behaviour of small molecules in the binding site of target proteins as well as to elucidate fundamental biochemical relations. The main application of molecular docking is lies on structure-based virtual screening for identification of new active compounds towards a particular target protein. The main objective of molecular docking is to attain ligand-receptor complex with optimized conformation and with the intention of possessing less binding free energy. The net predicted binding free energy (ΔG_{bind}) is revealed in terms of various parameters, hydrogen bond (ΔG_{hbond}), electrostatic (ΔG_{elec}), torsional free energy (ΔG_{tor}), dispersion and repulsion (ΔG_{vdw}), desolvation (ΔG_{desolv}), total internal energy (ΔG_{total}) and unbound system's energy (ΔG_{unb}). Therefore, good understanding of the general ethics that govern predicted binding free energy (ΔG_{bind}) provides additional clues about the nature of various kinds of interactions leading to the molecular

docking. The main purpose of this review article is to give a clear idea about the objective, importance and approaches of molecular docking in the development of new drug moiety.

Keywords: Drug design, molecular docking, structure-based, ligand-based, free energy.

D-429

Comparative Study Of Pantoprazole And Ginger Extract In The Evaluation Of Antiulcer Activity On Ethanol Induced Gastric Ulcer In Rat

Premchand Gupta, Thomson Alex and Shaily Chaudhary

Smriti College of Pharmaceutical Education, (SCOPE) Indore, 4/1 Pipliya Kumar Kakad, Dewas Naka, MR-11, Indore – 452001, Madhya Pradesh, India

gupta.premchandra123@gmail.com.

Abstract:

The main objective of this study is to compare pantroprazole and ginger extract in the treatment of Pyloric ligation induced gastric ulcer in rat**.** Dried rhizomes of *Z.officinale* were extracted with absolute ethanol. Eighteen Wistar rats of either sex weighing 250-300 gm were taken and divided equally into 3 groups namely control, standard and test group. They were fed with standard pellet diet and water ad libitum. All the animals were fasted for 36 hours before administration of ethanol. One group represented the control group, which received ethanol Second & Third Groups received ethanolic extract of ginger 500 mg/kg and, pantoprazole, in the dose of 40 mg/kg were administered orally. The gastric ulcers were induced in rats by administrating absolute ethanol (90%) (0.5 ml/100g) orally, after 45 min of ethanolic extract and pantroprazole treatment. They were kept in specially constructed cages to prevent coprophagia during and after the experiment. The animals were anaesthetized 1h latter with anaesthetic ether. The stomachs were opened along the greater curvature, rinsed with saline to remove gastric contents and blood clots and examined by a 10X magnifier lens to assess the formation of ulcers. The numbers of ulcers were counted. Ginger extract was more potent then pantoprozole in the treatment of ulcer in rat induced by ethanol.

Keywords: Pantroprazole, gastric ulcer, *Z.officinale,* ethanol.

D-430

Dyslipidemia

M Tejaswi and M. Gowri Manoja

Srinivasa Rao College of Pharmacy, Visakhapatnam - 530041, Andhra Pradesh, India

tejaswimallidi29@gmail.com

Abstract:

Dyslipidemia is an abnormal amount lipids (like triglycerides, cholesterol and/or fat phospholipids) in the blood. In developed countries, most dyslipidemias are hyperdyslipidemias, which is an elevation of lipids in the blood. Thia is often due to diet and lifestyle. Prolonged elevation of insulin also leads to dyslipidemia because elevated plasma insulin levels causes increased hepatic fatty acid esterification, which forms triglycerides. It gives rise to many serious problems like atherosclerosis. Atherosclerotic lessions arise from transport and retention of LDL (Low Density Lipoprotein) through the endothelial cell layer into the extravascular matrix of the subendothelial space. Once in the artery wall, LDL is chemically modified through oxidation and non-enzymatic glycation. Mildly oxidized LDL recruits monocytes into the artery wall, which transforms into macrophages that accelerate LDL oxidation. Oxidized LDL provokes an inflammatory response mediated by chemoattractants and cytokines. Repeated damage and repair within an atherosclerotic plaque eventually leads to a fibrous cap protecting the underlying core of lipids, collagen, calcium and inflammatory cells. Maintainance of fibrous plaque is critical to prevent plaque rupture and coronary thrombosis eventually leading to narrowing of coronary artery and finally leads to atherosclerosis. There are two types of treatments which involves non-pharmacological and pharmacological. Non- pharmacological treatment involves the treatment which is given by making necessary changes made in the lifestyle of the patient. Pharmacological treatment involves the

use drugs like Bile Acid Resins, Niacin (Nicotinic acid), Statins like atorvastatin, Fibric acids like clofibrate, Fish oil supplements like LOVAZA (omega-3-fatty acid ethyl esters).

D-431

Painless Insulin Patch

M. Narayana
Samskruti College of Pharmacy Kondapur, Ghatkeshar, Hyderabad, Andhra Pradesh, India
aryanmartha1@gmail.com

Abstract:

Beta cells which reside in the pancreas act as insulin producing factories, they release insulin hormone to regulate sugar released in to the blood stream, but in people with diabetes these cells are damaged or unable to produce sufficient amount of insulin to keep sugar level under control managing diabetes is tough for patient because they have to undergo many painful process. Painless insulin patch can detect increased blood sugar levels and it secretes doses of insulin into the bloodstreams whenever needed, it is made of nontoxic, biocompatible materials. It consists of microneedles which are packed with microscopic storage until for insulin and glucose-sensing enzymes that rapidly release insulin to control blood sugar levels.

Keywords: Insulin, Pancreas, Beta cells, Diabetes.

D-432

Exploration of Therapeutic Potential of Stem Cell Therapy In Huntington's Disease (HD)

Tanya, Kuldeep Kumar and Jitender Singh
Department of Pharmaceutical Sciences, Lord Shiva College of Pharmacy, Sirsa – 125055, Haryana, India
tanyatageja05@gmail.com

Abstract:

Huntington's Disease (HD) is an abnormal inherited, neurodegenerative, progressive brain disorder characterized by choreichyperkinesias and dementia. HD is caused by genetic error in huntingtingene and abnormal synthesis of a huntington protein that is the repeated slutter of three letters of DNA codon,(C-A-G-C-A-G--). This repetition of polyglutamineresults in apoptosis and excitotoxicity which may leads to neuronal loss in cortex,hippocampus and mainly striatum. In HD,there is a degeneration of GABAergic neurons. Brain Derived Neurotrophic Factor (BDNF) is a factor needed by neurons to remain alive and healthy but which declines to very low level in HD patients due to interference by the mutant huntingtin(htt) protein that is hallmark in the HD. Implantation of mesenchymal stem cell(MSC) has a restorative effect toneurons . Delivery of BDNF by the transplantation of MSC into the brains of HD is safe and resultant in the reduction of their behavioral defecits nearly back to normal levels. MSC in the brain promote neuronal growth,decrease apoptosis and regulate inflammation.MSC transplanted at the site where need have been demonstrated to promote functional recovery by BDNF. There is no cure of HD is available and theobjective of treatment is to minimize the symptoms and prevent complications.

Keywords: Huntington Disease(HD), Huntingtin, BDNF, Stem Cell, MSC.

D-433

Microarray Patches -A Novel potentially useful drug delivery system

Vashist Swati, Sanduja Mohit, Virmani Tarun and Alam Shadab
School of Pharmaceutical Sciences, M.V.N. University, Palwal, Haryana, India
souravbhardwaj093@gmail.com

Abstract:

MicroArray Patch technology is being developed for the transdermal delivery of large molecule drugs, without the use of injections.The patch is in a band-aid format, and the surface of the patch is structured with polymer microneedles, from which the drug is delivered. The drugs can be attached to the external surface of the polymer microneedles, integrated into the polymer, or both. When the patch is applied, the microneedles cross the stratum corneum and penetrate into the epidermis. The microneedles do not penetrate deep

enough to enter blood capillaries or nerves, hence the delivery is non-invasive and pain-free. The drugs for delivery are present in a nanostructured form, facilitating uptake into the body. The microneedles are made of a polymer that is biocompatible and biodegradable. This reduces the risk of trauma to the skin and infection. The MicroArray Patches have been designed for the delivery of peptides, proteins, hormones, vaccines and skin repair agents. The use of MicroArray Patches will enable a wide range of medications to be effectively delivered to humans in a safe and non-invasive manner.

Keywords: Microarray, Transdermal delivery, microneedles, etc.

D-434

New Trends in Psychiatric Disorder Diagnosis: Biomarker for Anxiety Disorder

Neelam Raj, C P Verma, M S Ashawat and Shiv K Kushawaha
Laureate Institute of Pharmacy, Jawalamukhi, Kangra, Himachal Pradesh, India
neelam2391982@gmail.com

Abstract:

Anxiety is a common psychiatric disorder lead to disability due to its chronic nature.Presently used drugs are ineffective because of addiction, tolerance, and poor efficacy. So for better therapy new anxiolytics are needed and for their development requires better understanding of the molecular mechanisms of anxiety, which remain largely unknown. This review deal with some promising psychiatric biomarker such as (the error-related negativity (ERN) a neural index of error processing) and (serotonin transporter molecule, which determines the amount of serotonin in the brain) which arenew biological markers for psychopathology. ERN related to diagnoses and dimensional anxiety symptoms concurrently helpful in the prediction of newonset of psychiatricdisorders. The ERN appears related to a clinically relevant trans-diagnostic phenotype (i.e. the tendency to engage in checking behaviours) and also differentiates anxiety from other concomitant conditions such as depression. Here, we are highlighting the importance of evaluating the psychometric properties of psychiatric biomarkers, in adults and children. ERN display excellent internal and test-retest reliability across development.In ERN, we will focus on use of attentional training, parenting interventions, and neuro-stimulation as potential possibilities of intervention to improve or prevent the onset of anxiety disorders. Furthermore; we discuss the diagnostic utility of the ERN as well as animal models.Whereas serotonin transporter molecule, which determines the amount of serotonin in the brain. This transporter has different DNA sequences in gene which contribute to aggravated response during stress in some individuals, which can lead to the development of anxiety disorders. However, this study focuses on methyl groups attached to the serotonin transporter DNA. These methyl groups mainly determine when and where the transporter gene is active, and therefore contribute to the levels of serotonin present in the brain.Methylation levels were more accurate predictors of stress reactivity than DNA sequence variation. Finally, we conclude that a psychiatric biomarker can serve as a target of treatment, thereby encouraging the development of novel intervention strategies.

Keywords: Error-related negativity ERN Biomarker, Psychiatric biomarker, Anxiety Developmental psychopathology.

D-435

Effects of Dietary Food Ingredients on Recognition Memory by Using Object Recognition Test In Mice

Vaila Bhavana, Kadiri Sunil Kumar, V. Nveen Sai and R. Suthakaran
Department of Pharmacology, Vijaya College of Pharmacy, Munaganoor, Hyderabad, Telangana, India
naveensai.v@gmail.com

Abstract:

The present research was designed to compare the effects of dietary food ingredients such as saccharin (100 mg/kg), turmeric (1g/kg) and transfat (2%) on recognition memory in albino mice by using object recognition test (ORT) apparatus.The object recognition test includes 3 sessions A) The first

day training session which consist of placing all the mice one by one in an empty recognition chamber for 5 minutes so that the mice get habituated in the environment (habituation). B) On 2nd day, test session begins (acquisition) where in the control mice are allowed to explore 2 different objects of same size, color and weight but with different shapes for period of 5 minutes (F&F1) and the time taken by each mouse to explore the objects was recorded. Repeat the same procedure with test (saccharin 100 mg/kg, turmeric 1g/kg and transfat 2%) and standard donepezil (1mg/kg) treated mice. The Third day session includes exploring with one familiar object (F) and a new object (N) for a period of 5 minutes. Discrimination index (DI) was found to be 0.0714± 0.17 in control mice, whereas DI was found to be 0.015±0.12 and 0.027±0.09 with saccharin and transfat. Turmeric treated mice exhibited a DI of 0.25±0.09. The above readings indicate the DI of saccharin & transfat treated mice found to be less than control mice indicating memory impairment with saccharin & transfat. However, turmeric treated mice exhibited increased DI than control indicating memory enhancement with turmeric.

Keywords: Recognition memory, dietary ingredients, donepezil, discrimination index, object recognition test.

D-436

A Survey Exploring the Knowledge and Perceptions of Pharmacy Students toward Generic Medicines

Bivek Shah, Ruchika Sharma and Anoop Kumar
Department of Pharmacology, Indo-Soviet Friendship Pharmacy College (ISFCP), Moga, Punjab, India
bivshah@gmail.com

Abstract:

Introduction: Herbal medicines are widely accepted as safe medicine in the treatment of various kinds of diseases. However, in actual practice, very less population is using these medicines. Thus, this study was undertaken to assess the Knowledge and perceptions of Pharmacy students of ISF College of Pharmacy, Moga toward generic medicines. **Material and Methods:** A questionnaire based survey was conducted in ISF college of Pharmacy, Moga, Punjab, covering all undergraduate, graduate and postgraduate students to assess their Knowledge and perceptions toward generic medicines. **Results and Discussion:** There were 10 different parameters/ data points for which the data was collected from 300 students in ISF College of Pharmacy, Moga, Punjab. Descriptive statistics were used for analysis of data. **Conclusion:** Overall, knowledge about the generic medicine among students was deficient. The perception of the students toward generic medicine was also not positive. Thus, there is need of seminar, conferences and workshops regarding use of generic and brand drugs.

Keywords: Knowledge; Perceptions; Brand drugs; Generic drugs.

D-437

Clinical Pharmacy in India: Recent Advances and Perspective

Sandigdha Choudhury and Mansi Khadenga
Jeypore College of Pharmacy, Rondapalli, Jeypore, Odisha, India
sandigdhachoudhury44974@gmail.com

Abstract:

In lieu of the fact that without adequate supervision, the assurance of quality of any system is not possible; clinical pharmacy has emerged as one of the latest and unmapped discipline of pharmacy in the 21st century. The existence of clinical pharmacists in medical rounds could support physicians in optimizing pharmacotherapy. This novel profession in India extends its diversions to good manufacturing practices, procurement/preparation/distribution of medication, reporting ADRs/ ADEs and on the whole to a very promising aspect of patient healthcare service. The state of clinical pharmacy in India is in the transformational state showing serious positive promising changes in the past couple of years. Even hospitals have started distinguishing the importance of clinical pharmacy and have taken initiatives for making it possible although at a budding stage.

The clinical pharmacy branch of pharmacy is surely attaining new heights in regard to patient care services which have certainly increased the services and satisfaction to the patients.

D-438

Possible Modulatory Potentials of Probiotics & Voglibose in Experimental Induced Type 2 Diabetic Mellitus

Gurfateh Singh, Sheena Mehta, Monisha Bansal, Nitin Kumar, Monika Dhiman and S.L. Harikumar
University School of Pharmaceutical Sciences, Rayat Bahra University, Sahauran, Kharar, Mohali - 140104, Punjab, India
dr_sugga@yahoo.co.in

Abstract:

Over the last few decades certain demographic changes have been observed worldwide, which have led to an increased in the prevalence of chronic non-communicable diseases. Type 2 Diabetes Mellitus is a major contributor to this disease burden leading to morbidity and mortality. Type 2 Diabetes with its micro- and macrovascular complications is occurring in younger populations. Prevention appears to be an important strategy to reduce the burden of disease. Along with inculcating healthy lifestyle habits across populations, it may be suitable to use preventive pharmacotherapy in those with pre-Diabetes and other risk factors like obesity. Probiotics are lactic acid bacteria which are used extensively in therapeutic preparations and added to foods. This study has been designed to determine the modulatory effect of probiotics on different doses of voglibose in type 2 Diabetic rat model. In the end of the study we observed that combined therapy of probiotics and voglibose has shown synergistic effects in Type 2 diabetic rats in comparison to single therapy of voglibose which were confirmed by estimation of blood glucose, body weight, total cholesterol level & triglyceride level. The impairment of insulin secretion results in enhanced metabolism of lipid and insulin deficiency in Diabetes leads to a variety of disruption in metabolic and regulatory processes, which in turn lead to accumulation of lipid. Therefore the present study shown additive anti-diabetic effects pre-clinically which can be an applicable as good model for clinical research.

Keywords: Diebetic effect, voglibose, Rat model.

D-439

Antidiabetic and In Vivo Antioxidant Potential Of Alcoholic Extract Of Geniosporum Prostratum On Stz Induced Diabetic Rats

Ashutosh Upadhayay

Alwar Pharmacy College, North Extension, MIA, Alwar, Rajasthan, India

ashu7185@gmail.com

Abstract:

Diabetes mellitus is a metabolic disorder which alter carbohydrate, fat and protein metabolism that affects nearly 10% of the population per year. The treatment of diabetes mellitus has been confined to use of oral hypoglycemic agents and insulin, the former being reported to possess serious side effects. This leads to increasing demand for herbal products with antidiabetic factor with little side effects. Free radicals have been implicated in the pathogenesis of diabetes mellitus leading to various complications including atherosclerosis. The present study was designed to investigate the antidiabetic and antioxidant effects of ethanolic extract of *Geniosporum Prostratum*(GPEt). Type I diabetes was induced in rats by injection of streptozotocin (STZ) in a dose of 60 mg/kg bwt, i.p. for 3 consecutive days. GPEt was administered orally at a doses of 100, and 200 mg/kg of body weight for 21 day, after which liver tissue was assayed for the degree of lipid peroxidation by means of markers, lipid peroxidation, reduced glutathione content and activities of catalase, and superoxide dismutase. Treatment of diabetic rats with GPEt increased the antioxidant levels with significant decrease in LPO. GPEt at a dose of 200 mg/kg of body weight exhibited a significant effect as compared with 100 mg/kg of body weight. These effects were compared with glibenclamide, a reference drug.

Keywords: blood glucose, *Geniosporum Prostratum*,

enzymic antioxidants, lipid peroxidation, streptozotocin induced diabetes.

D-440

Hypoglycemic Effect of Urtica Parviflora in Streptozotocin Induced Diabetic Rats

Prasanna Aditya K, Prasanna K Kar and Rath Amrit Kumar
Jeypore College of Pharmacy Po-Rondapal, Jeypore, Odisha, India
adityaprasanna143@gmail.com

Abstract:

Diabetes mellitus is the metabolic disorder with the highest rate of prevalence and mortality world-wide. The incidence of type 2 diabetes is increasing worldwide. Although genetic factors may play a role, life-style changes such as the consumption ofnon-indigenous diet which are high in fat, leads to obesity which can be a factor also contributing to the increase of this disease. In this experiment, the antidiabetic activity on glucose tolerance in streptozotocin induced diabetic rat is carried out. The result revealed that the methanolic extract of *Urticaparviflora* succeeded to control the rise of serum glucose level (70.6%) within 1st hour of GTT in streptozotocin induced diabetic rats. Glibenclamideis used as the standard drug. The extract was fed orally in a dose of 200 mg/kg body weight; whereas Glibenclamide was given orally in a dose of 0.20g/kg body weight. six rats each in one group were used in this experiment. The fasting blood samples were drawn from the tail vein. To get the GTT pattern in untreated animals, empty gelatin capsules were fed to the animals after withdrawal of fasting blood samples. Again after 90 minutes blood samples were withdrawn. This sample ware taken as '0' hour value for GTT.The blood samples were withdrawn at 1, 2 and 3 hr after glucose administration to get the GTT pattern of the untreated diabetic animals which served as diabetic control. After a week, same animals were again fasted overnight to carry out GTT with drug. Fasting blood samples were drawn.

D-441

Nootropic potential of *Murraya Koengii* leaves by Object Recognition Test in Rats

Pravallika G, Vaila Bhavana, Kadiri Sunil Kumar and V. Naveen Sai
Department of Pharmaceutical Sciences, Vijaya College of Pharmacy, Hayathnagar, Hyderabad 500035, Telangana, India
naveensai.v@gmail.com

Abstract:

The study was designed to evaluate the nootropic potential of murraya koengii leaves by using object recognition test in albino rats. The apparatus is composed of open box (16x5cm) with an open roof. The object recognition test includes 3 sessions A) The first day training session which consist of placing all the rats one by one in an empty recognition chamber for 5 minutes so that the rats get habituated in the environment (habituation). B) On Second day, test session begins (acquisition) where in the control rats are allowed to explore 2 different objects of same size, color and weight but with different shapes for period of 5 minutes (F&F1) and the time taken by each rat to explore the objects (rat touches its nose or places its nose at a distance of 2 cms from the object) was recorded. Repeat the same procedure with test and standard treated rats after one hour of administration of murraya koengii chloroform extract 100 mg/kg and Piracetam 200 mg/kg. C) The Third day session includes administration of an amnesic drug propofol (0.5 ml/200g) i.p to all the groups and then exploring the control, test and standard treated rats to one familiar object (F) and a new object (N) for a period of 5 minutes. Discrimination index which is an index of memory is calculated in all the groups of rats. It was found that discrimination index of murraya koengii chloroform extract 100 mg/kg treated rats was 0.714± 0.615 which is greater than the discrimination in dex of control treated rats (0.302± 0.014). This increase in discrimination index with murraya koengii leaf extract rats when compared to control rats indicates the presence of nootropic activity in murraya koengii leaves. Standard (piracetam 200mg/kg) treated rats

exhibited discrimination index of 0.729± 0.192. Phytochemical screen ing of murraya koengii leaves reveals the presence of carbohydrates, alkaloids, glycosides, flavonoids, proteins, triterpenes, resins and phytosterols. Hence any of the above mentioned active constituents in murraya koengii leaves may be responsible for its nootropic potential.

Keywords: Nootropic activity, Murraya koenigii, discrimination index, object recognition test.

D-442

In vitro Evaluation of Immunomodulatory Activity of Herbal Extract on Peripheral Blood Mononuclear Cells

Rakesh Tirkey
University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur - 492010, Chhattisgarh, India
rakeshtirkey99@gmail.com

Abstract:

Sesbaniasesban (SS) Linn. (family: Fabaceae), is a plant well-known for its medicinal value in Ayurveda. All the parts like Seed, Bark and Leaf have been indicated for folklore use in menorrhagia, spleen enlargement, diarrhea, anthelmintic and also used as astringent, emmenagogue, anti-inflammatory. In our study, we have evaluated immunomodulatory activity of *Sesbaniasesban* leaf extract by *in vitro* method using human peripheral blood mononuclear cells (PBMCs) from healthy individuals. Interestingly, *Sesbaniasesban* extracts produced immunomodulatory response through significant inhibition of IL-2 and TNF-α when PBMCs were treated with the nontoxic doses of 100 and 200 µg/ml. Our results concluded that *Sesbaniasesban* leafextractsshowed significantsuppressive effect on proliferation of PBMCs andcytokines are involved such as Multiple Sclerosis, Rheumatoid Arthritis and Cancer, which might be due to presence of some phytoconstituents such as cholesterol, campesterol and beta-sitosterol.

Keywords: Immunomodulatory, PBMC.

D-443

Preparation and Evaluation of Herbal Hydrogel for the Treatment of Psoriasis

Verma Nitin and Sunil Kumar
School of Pharmacy and Emerging Science, Baddi University of Emerging Science and Technology, Makhunmajara, Baddi Distt. Solan - 173205, Himachal Pradesh, India
nitin.verma@baddiuniv.ac.in

Abstract:

Psoriasis is immune mediated condition which is caused by faulty signals in the body's immune system. There are number of disadvantages and adverse effects of allopathic treatment. Herbal origin compounds can be used for the treatment. In this study Neem Extract and Capsicum Extract were used for preparing hydrogel for treatment of psoriasis. The gel was prepared at different concentrations and its evaluation was performed. PVA/Borax hydrogels were prepared by chemical crosslinking. Briefly, 4% PVA solution was prepared by dissolving 4 gm in 100 ml of distilled water while 4, 8, 12, 16 and 20 % concentration of borax were prepared by dissolving 4, 8, 12, 16 and 20 gm of borax in 100 ml of water. They were then mixed in the weight ratio of 10:1 (19); 10:2; 10:3; 10:4 and 10:5 respectively (all were without drug). For increase in flexibility, plasticizers viz. glycerine and PEG 300 were added in the percentage of 10 – 50 % w/w of the final optimized formulation before the addition of cross-linker. Herbal extracts of Neem (1.6%), *Capsicum anumm* (0.6%) were added directly into the PVA solution. The various optimization parameters were gel fraction determination, swelling ratio determination, water vapour transmission test and *in vitro* drug release studies. Water vapour transmission test and *in vitro* drug release studies points out that the 20 % w/v concentration of borax gives maximum drug release among all others. Hence, all the studies done so far

clearly indicate that the optimized formulation have all the properties requisite of an ideal treatment of psoriasis.

Keywords: Psoriasis, Herbal drugs, Capsicum, Neem.

D-444

Exploration of Novel Carrier Systems for Reducing the Resistance of Colchicine in Breast Cancer Cells

Sandhya and Dinesh Kaushik
Department of Pharmaceutics, Hindu College of Pharmacy, Sonepat, Haryana, India
dineshkaushik07@yahoo.com

Abstract:

Understanding the mechanism of resistance to tubulin-targeted anticancer drugs is important for improved chemotherapy. Colchicine a microtubule modulating agent, initiates apoptosis selectively via a mechanism involving inhibition of tubulin\ polymerization. However, breast cancer cells MCF-7 displayed resistance against colchicines. This may be contributed to enhancement in the levels of tubulin acetylation and glutamylation in MCF-7 cells. Several strategies have been used to address MDR, especially P-glycoprotein-mediated drug resistance in tumors. However, clinical success has been limited, largely due to issues regarding lack of efficacy and/or safety. Nanoparticles have shown the ability to target tumors based on their unique physical and biological properties. To date, nanoparticles have been investigated primarily to address P-glycoprotein and the observed improved anticancer efficacy suggests that nanomedicinal strategies provide a new opportunity to overcome MDR. In conclusion, we have reported here various strategies to overcome cochicine resistance in MCF-7 cells.

Keywords: Breast cancer, colchicines, drug resistance, nanoparticles.

D-445

Evaluation of Antidepressant Activity of Synthesized Substituted 4-Oxo-4H-Chromene-3-Carbaldehyde Derivatives

Pawanpreet Kaur Bansal, Navpreet Kaur and Anuja Chopra
Ghg Khalsa College Of Pharmacy, Gurusar Sadhar, Punjab, India
pb546125@gmail.com

Abstract:

The present study was carried out to evaluate antidepressant effect of synthesized compounds in Swiss albino mice. The antidepressant effect was determined by recording the immobility time and fatigue time in Forced Swim Test (FST) and immobility time in Tail Suspension Test (TST). The synthesized compounds were analysed by 1H NMR. In both cases of Forced Swim Test (FST) and Tail Suspension Test (TST) model, depression induced in Swiss albino mice resulted in increase in immobility time and fatigue time. The results of mice model of depression i.e. FST and TST indicated that the synthesized compounds 4-Oxo-4H-chromone-3-carbaldeyde and its substituted derivatives showed potent to moderate antidepressant effect (decrease immobility time and fatigue time) as compared to normal control group. These compounds might have effect on monoamine oxdase enzyme, inflammatory process and oxidative stress but the study needs further investigations.

D-446

Experimental and Pharmacological Study on Anti-Parkinsonian Activity Ofnovel Inductants Inbehavioural Response in Rodents

Ramandeep Saini, Manoj Kumar Katual and S.L. Harikumar
1-Rayat-Bahra Institute of Pharmacy, Education City, Hoshiarpur, Punjab, India
manojkumar.katual@gmail.com

Abstract:

Introduction: Parkinson's disease (PD) is a complex hyperkinetic syndrome of abnormal involuntary dyskinesia movements.The present research work was aimed to study behavioural and biochemical abnormalities in haloperidol induced dyskinesia in experimental animalsi.erats. **Experimental:** Experimental model used Haloperidol induced dyskinesia.Male wistar rats, weighing 180-250 g (4-6 months old) were used in the study. Animals were acclimatized to laboratory conditions at room temperature prior to experimentation and were carried out in accordance with the guidelines of INSA for the use and care of the experimental

animals. Haloperidol at a dose of 1mg/kg s.c was administered chronically to the rats for a period of 21 days to induce PD. All the behavioural assessment was carried out every week and the last behavioural quantification was done 24 hours after the last dose of Haloperidol. **Results:** Various parameters assessed like behaviour response, rota rod test, narrow beam walking test, biochemical estimation, lipid peroxidation and reduced Glutathione. **Conclusion:** The experimental animals treated with chronic haloperidol showed decrease in muscle co-ordination in narrow beam walk and in rota rod activity, glutathione concentration and increased in nitrite concentration as compared to control group. Haloperidol treatment produces behavioural abnormalities as evidenced by increase in frequency of foot slips, loss of grip strength of hind paws on rota rod test and increase in tongue protrusions and facial jerking.Haloperidol treatment increased oxidative stress in rat brain as evidenced by increase in lipid peroxidation and nitrite production.Therefore, it can be concluded that haloperidol administration to rats produces behavioural and biochemical abnormalities similar to as observed in PD patients.

Keywords: Parkinson's Disease, *In-vivo* study, Tarditive Dyskinesia.

D-447

Pharmacological Modulation of Nuclear Factor-Kappa-B Attenuates the Development of Seizures in Mice

Shareen Singh and Thakur Gurjeet Singh

Department of Pharmacology, Chitkara College of Pharmacy, Chitkara University, Punjab, India

shareenpharmachitkara@gmail.com

Abstract:

The present study has been designed to evaluate the role of nuclear factor-kappa-B in the pathophysiological progression of seizures using mouse models. *Chemically induced kindled epilepsy model:* Pentylenetetrazole (40mg kg-1) (PTZ) administration, every second day, for a period of 15 days was used to elicit kindled seizures in mice. Severity of kindled seizures was assessed in terms of a composite kindled seizure severity score (KSSS). *Status epilepticus induced spontaneous recurrent seizures model:* Pilocarpine (100 mg kg^{-1}) was injected every twenty minutes until the onset of status epilepticus. A spontaneous recurrent seizure severity score (SRSSS) was recorded as a measure of the progressive development of spontaneous recurrent seizures induced post-pilocarpine status epilepticus. Sub-acute PTZ administration induced severe form of kindled seizures in mice. Severity of kindled seizures was assessed in terms of a composite kindled seizure severity score. Further, pilocarpine induced status epilepticus elicited a progressive evolution of spontaneous recurrent seizures in the animals. However, treatment of diethyl dithiocarbamic acid sodium salt trihydrate (DDA), a selective inhibitor of nuclear factor-k-B (NF-kB), markedly and dose dependently suppressed the development of PTZ induced kindled seizures as well as pilocarpine induced spontaneous recurrent seizures. Therefore, nuclear factor-kappa-B may be implicated in the pathophysiology of seizures. Therefore, the present study has been designed to investigate the effect diethyl dithiocarbamic acid sodium salt trihydrate (DDA), a selective inhibitor of nuclear factor-k-B (NF-kB), on the development of pentylenetetrazole and pilocarpine status epilepticus induced spontaneous recurrent seizures in mice.

Keywords: Seizures, nuclear factor-kappa-B, diethyl dithiocarbamic acid.

D-448

Usefulness of Rotenone as a Chemical Model of Parkinson Disease: Pros, Cons and Future Perspectives

Vishu Verma, Navneet khurana, Neha Sharma and Souvik Mohanta

Department of Pharmaceutical Sciences, Lovely professional University, Phagwara, Punjab, India

vishuverma778@gmail.com

Abstract:

The second most common neurodegenerative disorder worldwide is Parkinson's disease (PD), which is characterized by motor symptoms (tremor at rest, rigidity, hypokinesia, bradykinesia and postural

instability) and non-motor symptoms (cognitive, autonomic, and psychiatric). The two main causes of this disorder are deficiency of dopaminergic (DA) neurons in substantia nigra pars compacta (Snpc) region and presence of lewy bodies which are abnormal aggregates of protein. But till now the etiology and pathogenesis of this disease is not understood completely. For understanding the pathogenesis and etiology of PD, animal models play the most important role. The two best pesticide based model which are most preferred that is 6-OHDA (6-Hydroxydopamine) in rats and MPTP (1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine) in mice and monkeys. The limiting factors for these models are that they cannot develop Lewy bodies which is the hallmark of PD. One of the most important environmental toxin which can develop all hallmarks of PD is rotenone model. The rotenone model has all the desirable characteristics of PD especially in the production of Lewy bodies. All the mechanisms involved in the pathogenesis of PD such as induction of oxidative stress, apoptosis, protein aggregation, mitochondrial dysfunction, behavior and motor deficits can be induced by rotenone. Despite being the most preferable model for Parkinsonism, the rotenone model has also some drawbacks such as systemic toxicity producing high mortality rates, liver toxicity, bone marrow depletion, achlorhydria, weight loss etc. This study focuses on the pros and cons of the rotenone model and how to overcome its limitations by pharmaceutical interventions and chemical modification.

Keywords: Parkinson disease, Rotenone model, Lewy bodies, Environmental toxins, Pharmaceutical interventions, chemical modification.

D-449

Study of the Anti Urolithiatic Activity of Calotropis Procera Flowers

Isha Chawla, Dhirender Kaushik and Vipin Saini
MM College of Pharmacy, MM University Mullana, Ambala, Haryana, India
ishachawla945@gmail.com

Abstract:

Urolithiasis is the medical term used to describe occurance of stones in the urinary tract. It is a widespread problem found with marked increase in prevalence over the past 20 years. A stone is a hard mass developed from crystals that separate from the urine within the urinary tract. In spite of substantial advancement in the pathophysiology and treatment of urolithiasis, there is no satisfactory drug to use in clinical therapy. Thus a drug for the prevention of this disease or its recurrence would be great interest. At present, there are various polyherbal formulations available in the market for the treatment of urolithiasis. In present work, *Calotropis procera* (Ait.) R.Br. belonging to family Ascelpidaeaceae is choosen to approach antiurolithiatic activity. Methanoloic extract of Calotropis *procera* flowers (Ait.) R.Br. contain Quercetin-3-ratinoside, which should inhibit the formation of calcium oxalate crystals and preventing their attachment to renal cells. Thus this formulation has appreciable significant antiurolithiatic activity.

Keywords: antiurolithiatic activity, Calotropis procera, Urolithiasis, Polyherbal.

D-450

Prevalence, Control and Risk Factors of Diabetes in Community Residents of Tricity

Ashumeet
UIPS Punjab University, Chandigarh, India

Abstract:

Purpose: The present study was aimed to investigate the prevalence, control of diabetes and to explore potential risk factors in community residents of Tricity. Methodology: It was a survey-based study. The study was conducted for a period of 6 months starting from January 2017 to June 2017. All community residents in the Tricity fulfilling the inclusion criteria were the study subjects. There were 130 subjects in the study. Result: A total of 130 subjects were enrolled into the study after they fulfilled inclusion criteria. The present study found out that prevalence of diabetes is observed in Tricity. Control of diabetes is also high either through medication or diet control. Physical activity was

E-1

Improving the Stability and Bio-Availability of Rifampicin in Fixed Dose

Venkata Deepthi Vemuri
Department of Pharmaceutical Sciences, Maharajah's College of Pharmacy, Vizianagaram - 535002, Andhra Pradesh, India,
deepthichowdary438@gmail.com

Abstract:

Previous study reveals that ascorbic acid (ASC) addition to plasma or to the reacting media can prevent decomposition of rifampicin. The present study aimed to investigate the influence of ascorbic acid with different concentrations on the dissolution stability of rifampicin (RIF) in the presence of isoniazid (INH) in pH 1.2 medium and also on the pharmacokinetics of rifampicin in rabbits. In the in-vitro study percent degradation, percent 3FRSV formation and degradation kinetics of rifampicin were significantly reduced with significant increase in half-life (t 1/2) by ascorbic acid in pH 1.2 medium and the effect was found to be dependent on the concentration of ascorbic acid. In the in-vivo study it was observed that the C max, AUC (0-24), and AUC (0-∞) of rifampicin was significantly reduced by isoniazid which was reversed by ascorbic acid co-administration. The above parameters were vice-versa in the case of 3FRSV. The results conclusively indicate that ascorbic acid co-administration can protect rifampicin from degradation in the presence of isoniazid in the acidic environment of the stomach, and thus improves bioavailability of rifampicin.

Keywords: rifampicin, ascorbic acid, isoniazid, 3FRSV, pharmacokinetics.

E-2

Mouth Dissolving Tablet of Azithromycin using Superdisintegrants

Benazeer Alli
School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar, Odisha, India
benazeeralli.naz@gmail.com

Abstract:

Since last decade, it has been observed that the demand for mouth dissolving tablets has been growing, especially for elderly and children who have swallowing difficulties. Azithromycin is a semi synthetic macrolide antibiotic chemically related to Azithromycin and clarithromycin. It is effective against a wide variety of bacteria. Azithromycin prevents the bacteria from growing by interfering with their ability to make proteins. It is commonly used for tonsillitis, laryngitis, bronchitis, Pneumonia and Sinusitis and several sexual transmitted infectious diseases. The main criteria for mouth dissolving tablets are to disintegrate or dissolve rapidly in oral cavity with saliva in 15sec to 60sec with need of water. The disintegrants used should fulfill the criteria by disintegrating the tablets in specified time limit. In the present investigation variety of super disintegrants like Ac-Di-sol, SSG, Crospovidone were selected and tablets were prepared by direct compression method in different concentration like 4%, 6% and 8% respectively. The prepared tablets were evaluated for weight variation, hardness, friability, in vitro disintegration time, wetting time, in vitro dissolution study, etc. Formulation F-7 shows the lowest disintegration time (6.8sec) and wetting time (13.1sec). In vitro dissolution studies revealed that formulation F-7 containing 4% w/v Crospovidone showed 98.88% drug release at the end of 15 minutes.

Keywords: Azithromycin, In-vitro disintegration

time, Mouth dissolving tablets, wetting time.

E-3

Development and In Vitro Characterization of Nevirapine Solid Dispersion

K. Jaikumar, K.P. Mohanraj and Apollo James
Department of Pharmaceutics, Nandha College of Pharmacy, Erode, Tamil Nadu, India
krpmohanraj@gmail.com

Abstract:

The aim of present investigation was to improve the dissolution properties of the poorly water-soluble drug nevirapine by preparing solid dispersion system with β-cyclodextrin. The *in vitro* dissolution of solid dispersion prepared by solvent evaporation technique was investigated and compared to their corresponding physical mixtures and the pure drug. The phase solubility studies of β-cyclodextrin was classified as A_L- type indicating the formation of complex. The solubility and dissolution was remarkably increased with the drug-to-carrier ratio of 1:5 as compared to pure drug. The changes in the solid phase obtained from the solid state studies was the strong evident of complex formation of drug with cyclodextrin. The prepared nevirapine–β-cyclodextrin complex proved to be the most effective in performing solid state interactions and in improving dissolution properties of the drug.

Keywords: Nevirapine, phase solubility, Solid dispersion, *In-vitro* release.

E-4

Development and Pharmacokinetic Evaluation of Nebivolol Loaded Solid lipd Nanoparticles to Improve Its Oral Bioavailability

P. Vijaya Laxmi, Y. Vamshi Vishnu and V. Kishan
Aurobindo College of Pharmaceutical Sciences, Kakatiya University, Warangal - 506009, Telangana, India
vijji.polepaka@gmail.com

Abstract:

Nebivolol is a beta-1-blocker belongs to the BCS class II drug. Oral bioavailability of nebivolol is upto 12%, due to low aqueous solubility. The main objective was to prepare nebivolol solid lipid nanoparticles and to check whether there is any improvement in the oral bioavailability and calculating the pharmacokinetic (PK) parameters, comparing the PK parameters of SLNs with marketed tablet by performing *in vivo* studies (using male wistar rats). Characterization of particle size, zeta potential and polydispersity index (PDI) using zeta sizer was done for different formulations. The optimized SLN formulation showed the particle size of 178.4±2.07, PDI of 0.365±0.09 and zeta potential of 21.6**±0.35mV with** entrapment efficiency of 93.6±0.12. . By administering the nebivolol in the form of SLNs there was 5.99 fold increase in oral bioavailability when compared with marketed tablet.

Keywords: Nebivolol, Solid lipid nanoparticles, hot homogenisation followed by ultra sonication.

E-6

To Develop and Evaluate Film coated Atorvastatin calcium Immediate release Tablet using different Superdisintegrants

Vikram Choudhary, Seema Wadhwani and R.S. Bhadauria
Department of Pharmaceutics, Shrinathji Institute of Pharmacy, Nathdwara Rajsamand – 313301, Rajasthan, India

v9460959052@gmail.com

Abstract:

The present study was mainly based upon

the "Development and Evaluation of Atorvastatin calcium immediate release tablets 20 mg" (Antihypercholesterolemic and antihyperlipidemic) by Wet Granulation Technique. Various formulations of Atorvastatin calcium tablets were prepared by using different proportion & combination of Excipients. Tablet blends were prepared and micromeritic studies were carried out for those blends. Precompressional parameters such as angle of repose, bulk density, tapped density, compressibility index for physical mixtures of immediate release layer formulations (F1 – F9) were evaluated and results were reported. From the results obtained by HPLC, the calibration curve was constructed having regression value of 0.999. Assay values of the formulations were observed in the range of 98 to 102%. Compatibility studies were performed and it was observed that all the ingredients used were compatible with the drug. Formulation (F9) was formulated by including 12mg of Croscarmellose sodium. The results showed disintegration was within limits and 100% drug release was found in 30 min. So, formulation (F9) was taken as optimized formulation. Accelerated stability studies were performed for this batch. Assay and Dissolution studies were performed for the optimized formulation (F-9) at different time intervals. All the parameters were found to be satisfactory. Dissolution studies were performed and it was found that formulation F9 have shown best results and comparable with the innovator.

Keywords: Antihypercholesterolemic, Croscarmellose, Granulation, Superdisintegrants, HPLC.

E-8

Preparation and Evaluation of Matrix Tablet Metformin Hydrochloride

Sidhartha Jyoti Bora, Samima Nasreen Ahmed and Biswajit Dash
Girijananda Chowdhry Institute of Pharmaceutical Science, Hatkhowapara, Azara, Guwahati – 781017, Assam, India
sidharthabora67@gmail.com

Abstract:

The present investigation is aimed to formulate the sustained release matrix tablet of Metformin hydrochloride with different concentration of Xanthan Gum with other excipients. Control release matrix tablet of Metformin hydrochloride, an anti diabetic drug(type 2 diabetic drug) was prepared by wet granulation using Xanthan gum as the natural hydrophilic polymer in the calculated amount. The prepared granules of three different formulations were evaluated for angle of repose, bulk density, tapped density and compressibility index and hausner's ratio. The prepared tablets were tested for physical parameters like weight variation, hardness, friability, content of active ingredient and *In-vitro* drug release studies. The results obtained were within the prescribed limits. The release of Metformin hydrochloride from the matrix tablets was sustained up to 12hrs approximately for 99%. The cumulative percentage of the drug release was decrease with increase in polymer concentration. Among the three formulations F-6 gave the release profile close to the commercially available marketed sample of Metformin hydrochloride. The results indicate that the drug release from the matrix tablets followed Zero order kinetics. It was found that the optimized formulation F6 followed Higuchi model of release i.e.; non-fickian drug diffusion occurs i.e. combination of both diffusion or swelling as well

as erosion mechanism as the values came within the range of 0.5-1.00. The tablets were prepared by wet granulation technique using different drug polymer ratios. Before compression the granules were evaluated for pre compression parameters . The drug-polymer ratio was found to influence the release of drug from the formulations.

Keywords: Metformin Hydrochloride, Zero order kinetics, Non-fickian drug diffusion, drug-polymer ratio.

E-9

Formulation and Evaluation of Fast Dissolving Tablets of Metoprolol Succinate

N.V.S. Kameswari and A. Ankarao

Department of Pharmaceutics, Hindu College of Pharmacy, Guntur - 522002, Andhra Pradesh,

India

kameswarinaidukamu7411@gmail.com

Abstract:

In the present work efforts have been made to develop fast dissolving tablets of Metoprolol succinate using direct compression technique involving Super Disintegrants like cross povidone, sodium starch glycolate. The pre compression parameters like angle ofrepose ,bulk density,true density,compressibility index are with in the IP limit. The post compression parameters are acceptable and with in the IP limit. *In-vitro* drug release at for all the formulations was found to be 95 to 99% and was satisfactory.The optimized formulation (F6,10%cross povidone) of drug release was found to be is 99% at 30 mins .Metoprolol succinate tablets were formulated by using direct compression method using micro crystalline cellulose as diluents, crospovidone and sodium starch glycolate as super disintegrating agent with magnesium stearate,talc as lubricant. Compatibility studies were carried out by means of physical mixture and the drug was found to be compatible with all the excipients used in different formulations. *In-vitro* drug release at for all the formulations was found to be 95 to 99% and was satisfactory.The optimized formulation (F6) of drug release was found to be is 99% at 30 min .

Keywords: Metaprolol succinate, disintegrants, invitro, povidone.

E-10

Development and Characterization of Colon Targeted Tablets and Spheroids for the Management of Ulcerative Colitis

Dushyant Bhatia, Manoj Sharma, Rohit Bhatia and Neeraj Mishra

Department of Pharmaceutics, ISF College of Pharmacy, Moga - 142001, Punjab, India

dushu81@gmail.com

Abstract:

Colon specific drug delivery system is a very significant system for the drugs which are especially absorbed from colon region by prevention of degradation in upper gastrointestinal tract (GIT). Drug release at this site will ensure maximum therapeutic benefits. Till date, a large number of novel drug formulations have been already developed for the treatment of ulcerative colitis but still they are lacking with solubility or site specific delivery problems with the drug.In the present study we have developed and characterized colon targeted tablets and spheroids of Morin hydrate β-cyclodextrin solid

inclusion complex for the management of ulcerative colitis. The pre-formulation studies were carried out to get preliminary information about procured Morin hydrate by usingFTIR,UV spectroscopy,logP and other rheological parameters.Complexes of β-CD and Morin hydrate were formed by employing co-precipitation method with percentage yield 63%. The solubility of complex formed was 44.44 times more than the pure drug. The enteric coated tablets and spheroids were formulated by extrusion-spheronization method and*in vitro*release studies showed that maximum amount of drug has been released in simulated intestinal fluid having pH of 6.8 and the cumulative release percentage was 73.14%. 6% w/v Eudragit S-100 coating on pellets showed release of drug from enteric coated pellets within simulated gastric fluid and maximum release within simulated intestinal fluidat colonic pH 7.4 (72.69 ± 2.68 %). These results showed that 6% w/v Eudragit S-100 coated pellets may be helpful to increase the bioavailability.

Keywords: Ulcerative colitis, Morin hydrate, co-precipitation, Eudragit.

E-11

In Vitro Studies and Evaluation of Telmisartan Marketed Tablets

Prachi Lokhande and Jayendrasih Bayas
Department of Pharmaceutical Sciences, Savitribai Phule Pune University, Pune - 412207, Maharashtra, India
prachilokhande77@gmail.com

Abstract:

In this research project, we are assigned a topic to study on the in vitro equivalency evaluation of Telmisartan tablets. The main focus of this research is to conduct dissolution test on the tablets to determine the compliance with a given official monograph. Dissolution testing is a method for evaluating physiological availability that depends upon having the drug in a dissolved state. In vitro dissolution test is conducted on four different brands of Telmisartan tablets to evaluate their equivalency. Tablets or capsules taken orally remain one of the most effective means of treatment available. The effectiveness of such dosage forms relies on the drug dissolving in the fluids of the gastrointestinal tract prior to absorption into the systemic circulation. The rate of dissolution of the tablet or capsule is therefore crucial. In this research, our aim is to develop an in vitro test method that fully models the physiological conditions in the GI tract. The dissolution media used closely resembles the GI fluid in the stomach. Simulation of GI pH gradients, peristaltic movement, transit times, biliary and pancreatic secretions and water absorption are examples of features in such dynamic in vitro test model.

Keywords: Invitro, Telmisartan, Comparative Dissolution Profile.

E-12

Formulation and Characterization of Sustained Released Tablet Using Inter electrolyte Complex

Shital Pounikar, Saurabh Gupta, Kamlesh Wadher and Milind Umekar
Department of Quality Assurance, Smt Kishoritai Bhoyar College of Pharmacy,
RTMNU, Nagpur, Maharashtra, India
123shitalpounikar@gmail.com

Abstract:

The objective of the present research was to study a polyelectrolyte polymer as release retarding material and evaluate an Interpolyelectrolyte

complex of polymer as release retarding material. In the present study the different IPEC were prepared by using 0.5% solution of chitosan in 0.5% acetic acid and 0.5% Eudragit L100 in 0.2 M sodium hydroxide solution which when mixed in different ratio resulted in formation of complex. These IPEC and there solutions were analyzed by various tests like FT-IR, DSC, % transmittances, viscosity measurement, and pH measurement. These IPEC were subjected to size reduction and further processed for sustained release formulation using Diclofenac Sodium as a modal drug. In vitro release study revealed that Chitosan release the drug for 12 hr but the more sustained effect i.e. 47.98% was found in 1:1 ratio batch. In case of Eudragit L100 the release was much sustained as compared to Chitosan, but the more sustain release i.e. 31.87% was found in 1:1 ratio batch. Similarly, their physical mixture showed better sustain effect, here also the best release i.e. 39.71% was found in 1:1 ratio batch. When IPEC was used compared to the release of individual polymer and their physical mixture, IPEC showed the best sustained effect, it showed the release i.e. 32.25% was found in 1:1 ratio batch.The result of physicochemical and release properties evaluation showed the potential of these interpolymer complexes to be used in oral controlled drug delivery.

Keywords: Interpolyelectolyte complex, interpolymer, Diclofenac.

E-13

Use of Super Disintegrants as Solid Dispersion Carrier for Enhancing Dissolution Profile of Misalamine

Sushanta Kumar Sahoo, Mahesh Ranjan Sahu and Sujata Mohapatra

School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar – 751003, Odisha, India

susantasahoo41@gmail.com

Abstract:

The purpose of the study was to enhance the solubility of Mesalamine forming solid dispersion with Crospovione, Croscarbamilose sodium and Sodium starch glycolate as water-soluble super disintegrant carriers. The solid dispersion of Mesalamine by kneading method and solvent evaporation method were prepared in 1:1, 1:2 and 1:3 ratios of drug to polymer using methanol as solvent. Characterization of Mesalamine dispersion was performed by fourier transform infrared spectroscopy and differential scanning colorimetry study. FTIR spectra revealed that there was a minute drug carrier interaction due to presences of OH bond. Absence of Mesalamine peaks in DSC study suggested the transformation of crystalline Mesalamine to amorphous form. Dissolution study was conducted to show the release characterestics. The prepared dispersion showed marked increase the saturation solubility and dissolution rate of Mesalamine than that of drug alone. Therefore the dissolution rate of poorly water soluble drug Mesalamine can be significantly enhanced by the preparation of solid dispersion using Crospovidone, Croscarbamilose sodium and Sodium starch glycolate using kneading technique and solvent evaporation technique.

Keywords: Mesalamine, Crospovidone, Croscarbamilose sodium and Sodium starch glycolate.

E-14

Determination of the Effect of Fatty Alcohols on

Niosomes

Sumit P. Mohod, Amol Tatode, Ravi Kalsait and Milind Umekar
Smt. Kishoritai Bhoyar College of Pharmacy, Kamptee – 441002, Maharashtra, India
sumitmohod2612@gmail.com

Abstract:

The present studied the effect of fatty alcohol with different lipophilicity in niosomes prepared using paclitaxel. Niosomes containing paclitaxel was prepared by lipid layer hydration technique using span 40, sterylamine and fatty alcohols containing different carbon chain length. The study fatty alcohols with different carbon chain length was added to enhance the lipophilicity and bring a optimum critical packing to prevent drug leakage from niosomes. The result from different process variable on niosomes formation revealed that best hydration temperature was found to be 60^{0}C for 5min with sonification. The prepared niosomes were evaluated for particle size analysis, haemolytic toxicity, drug entrapment and in vitro drug relased. Carbon chain length of all fatty alcohols with varying concentration ratios of span 40 fatty alcohol, the entrapment efficiency results showed that, increased on concentration of fatty alcohols, increased in the entrapment efficiency 1:25 to 1:1 but further increased fatty alcohol concentration showed decresed in entrapment efficiency1:2 to 1:3. The vesicle size determination and shape inspection was carried out using optical microscope. The result suggest that niosomes prepared were uniform in size and spherical in shape. Average particle size was found in the range of 1-10um.In vitro studies are carried out by dialysis through a semi permeable membrane.

Keywords: Paclitaxel, niosomes, fatty alcohol, etc.

E-15

Divalent Ion Cross-Linked Sodium Alginate Efavirenz for Oral Application

Sushree Nisita Bardhan, Namit Nayak and Prakash Chandra Senapati
School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar - 751003, Odisha, India
nisitamama978@gmail.com

Abstract:

The present work describes a study on formulation and evaluation of sodium alginate beads of Efavirenz by using different cross-linking agent. It is an anti-HIV drug used for treatment of AIDS with some other class of drug. Alginate beads containing Efavirenz was successfully prepared by ionotropic gelation technique with $CaCl_2$, as cross-linking agent using dropping method. Different cross-linking agents like ca $\rightarrow\rightarrow$ Ba $\rightarrow\rightarrow$ Sr $\rightarrow$ etc may be used for preparation of alginate gel beads. The most important advantage of using alginate as a matrix for controlled release formulation is its biodegradability after releasing the drug without any toxic effect. Characterisation of drug was done by IR spectroscopy, UV spectroscopy melting point etc.The beads were prepared by ionotropic gelation method. In the same way air dried alginate beads cross-linked with $CaCl_2$were prepared. Then it was evaluated by various parameter like particle size determination, drug entrapment efficiency, in vitro drug release study, FT-infrared spectroscopy. The best fit with the highest correlation coefficient was shown in korsmeyer – peppas model, modified korsmeyer peppas model.

Keywords: Divalent ion, Efavirenz, Cross-linking

agent, Alginate.

E-16

Solubility Enhancement of Poorly Water Soluble Drug by Solid Dispersion Method

Kiran S. Ahire and Pawan P. Kumare
Department of Pharmaceutics, Dr. D. Y. Patil, Institute of Pharmaceutical Sciences and Research, Pimpri, Pune, Maharashtra, India
kiranahire214@gmail.com

Abstract:

Poorly water soluble drugs tend to have low bioavailability; however, this can be improved by several methods. One of the most promising strategies is the employment of solid dispersions to increase water solubility and enhance oral bioavailability of these drugs. Nonetheless, the mechanisms of solid dispersion formation may influence the solid-state characteristics and thus the dissolution profile. In this study, kneading and spray-drying techniques were used to produce solid dispersions of the anti-fungal ketoconazole, a class II drug in the Biopharmaceutical Classification System, with the hydrophilic carrier Soluplus, Poloxamer 188 and β-cyclodextrin. Saturation solubility at different solvents, Phase solubility study, Fourier transform infrared spectroscopy, Differential scanning calorimetry, X-ray diffraction, and dissolution profile experiments were carried out to evaluate the solid dispersions. Results showed an increase in solubility, especially in acid medium (citrate buffer 4.8), where the drug is protonated, and an enhancement in dissolution profiles of solid dispersions manufactured by both the kneading and the spray-drying methods. The spray drying method showed better result than the kneading method. This is a consequence of particle size reduction, increased wettability due to intimate contact of the drug with the hydrophilic matrix, increased surface area, and the conversion of the crystalline to the amorphous state.

Keywords: Solid dispersions, kneading, spray-drying, ketoconazole, Soluplus, Poloxamer 188, βcyclodextrin, solubility.

E-18

Formulation and Characterization of Nanostructured Lipid Carriers of Antidiabetic drug Glibenclamide

Aarti Gaikwad, Pranali Malusare, Kisan Jadhav and Vilasrao Kadam
Bharati Vidyapeeth's College of Pharmacy, Mumbai University, CBD Belapur, Navi Mumbai -400614, Maharashtra , India
aartigaikwad333@gmail.com

Abstract:

In the current research work, the nanostructured lipid carriers of Glibenclamide was formulated using Hot high shear homogenization method. Glibenclamide is potential candidate for the NLC formulation as it is BCS 2 class drug (poor water solubility) and also has short half life. The aim behind respective study is to increase water solubility and half life of drug which increases bioavailability of drug, with the modification to sustained release dosage form. The number of batches were formed using Precirol ATO and Gelucire50/13 as solid lipid, Oleic acid as liquid lipid and Tween 20 as surfactant. The final NLC dispersion is lyophilized using Trehalose as cryoprotectant and filled in appropriate capsule shell. The optimization of formulation is done by 3^2 factorial design. The challenging parameters in NLC formulation are Entrapment efficiency, particle size and stability of formulation. The optimized batch shows the 91.83% entrapment efficiency and134.22nm particle size.

Dissolution study data shows the 1st order kinetic model suggesting sustained release of formulation. DSC analysis suggested no interaction of drug with lipid, surfactant and cryoprotectant. Optimized batch meets the required criteria for nanostructured lipid carrier as sustained release formulation. Hence it can be concluded that present study is beneficial in formulation development of the nanostructured lipid carriers of Glibenclamide.

Keywords: Glibenclamide, Hot high shear homogenization, Nanostructured lipid carriers, 3^2Factorial design.

E-19

Formulation and Evaluation of Orodispersible Tablets of Azilsartan Medoxomil

V. Vasu Naik and D. Spandana Satya

Dept of Pharmaceutics, Hindu College of Pharmacy, Amaravati Road, Guntur – 522002, Andhra Pradesh, India

amani.prathi@gmail.com

Abstract:

In the present work efforts have been made to develop orodispersible tablets of Azilsartan medoxomil using direct compression technique involving Super Disintegrants like cross povidone, KyronT314. The pre compression parameters like angle of repose ,bulk density, true density, compressibility index are with in the IP limit.The post compression parameters are acceptable and with in the IP limit. In-vitro drug release at for all the formulations was found to be 93 to 99% and was satisfactory.The optimized formulation (F6,5%cross povidone) of drug release was found to be is 99.8% at 30 min .

Keywords: Orodispersible, Azilsartan medoxomil , cross povidone, KyronT314.

E-20

Formulation Development and Characterisation of Metformin Hydrochloride Sustained Release Tablets

Sunil Pattanaik, Arundhati Sahoo and Sujata Mohapatra

School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar – 751003, Odisha, India

sunilpattanaik327@gmail.com

Abstract:

Metformin Hydrochloride is an oral hypoglycemic agent . It is a high dose drug with poor flowability and compression property .The purpose of this project work was to formulate and evaluate the sustained release tablet of Metformin hydrochloride by using wet granulation method at different binder concerntration level. Different sustained release matrix tablets of Metformin hydrochloride were prepared by using combination of hydrophobic and hydrophilic polymer consisting of HPMC K 100M and Ethylcellulose. PVP K 30 was taken as binder at(37.5,56.25 and 75mg) concentrations. The study involved preformulation study, formulation of sustained release tablets, evaluation of sustained release tablets like weight variation, hardness, thickness ,friability, *in-vitro* dissolution study were performed .Formulation F3 with binder concerntration of 10% was found to prolong the drug release profile up to 10 hours. *In-vivo* study revealed the blood glucose lowering effect of prepared Metformin sustained release tablets.

Keywords: Metformin hydrochloride, Sustained release, PVP K 30, HPMC K 100M, Ethylcellulose.

E-21

Effect of Sodium Stearyl Fumarate as Tablet Lubricant & Its Influence on Drug Release

Souvik Giri, Sujata Mohapatra and Sunil Kumar Jena
School of Pharmaceutical Sciences, Siksha 'O' Anusandhan University, Bhubaneswar - 751003, Odisha, India
souvik.giri98@gmail.com

Abstract:

The purpose of present study was to develop an optimized conventional tablet of Irbesartan as model drug. In this investigation conventional tablet of three different strength of Irbesartan tablet was prepared by using different concentration of lubricant by wet granulation method. Three different concentrations (1.5%, 2%, and 2.5%) of lubricants were selected. Then formulated tablets were evaluated by various parameters like angle of repose, compressibility index, Hausner's ratio, average weight, thickness, hardness, friability, disintegration time, in-vitro dissolution study and assay. Then accelerated stability study was done. Best lubricant was selected on the basis of physiochemical properties and in-vitro dissolution study of prepared tablets. The best result was showed 2% lubricant concentration. The scope of developing and verifying this pharmaceutical method is to ensure a suitable method and specific concentration of lubricant and its effect on release profile.

Keywords: Sodium stearyl fumarate, Lubricant, Release profile, Irbesartan.

E-22

Formulation and Pharmacokinetics of Flurbiprofen Melt Dispersion Granules

Sateesh Kumar Vemula and Mohd Rawoof
Department of Pharmaceutics, MAK College of Pharmacy, Hyderabad - 501504, Telangana, India
vemulasatish15@gmail.com

Abstract:

Formulation of solid dispersions using BCS class II drugs is one of the fruitful technologies to improve the drug solubility and dissolution rate to enhance the bioavailability but suffers from poor flowability and stability. To overcome the above problems, present research is intended to prepare the solid dispersions using combination of melt dispersion and surface adsorption methods. In the present study flurbiprofen melt dispersion granules were prepared by incorporating gelucires as the carrier material and lactose as an adsorbent to improve the dissolution rate and flowability. Melt dispersion granules were evaluated for angle of repose, solubility studies, differential scanning calorimetry, *in vitro* dissolution studies and stability studies. From the differential scanning calorimetry studies, change in the drug peak in formulation revealed the change in drug crystallinity. F4 formulation showed not only good flowability but also complete drug release in 30 min (Q15= 99.02 ± 1.07% and Initial dissolution rate=6.619%/min) when compared to other formulations and pure drug. The calculated similarity factor was found to be 84.76 that revealed the stability of drug in prepared F4 formulation. From the pharmacokinetic evaluation, F4 formulation showed 1.4-fold higher bioavailability and 1.3-fold higher C_{max} compared to plain flurbiprofen. Hence the formulated melt dispersion granules were able to improve the dissolution rate as well as the bioavailability of flurbiprofen.

Keywords: Bioavailability, Dissolution rate, Melt dispersion, Similarity factor, Solid dispersions, Surface adsorption.

E-23

Formulation Development and Evaluation of Solid Lipid Nanoparticles of Nalbuphine

M. Bhavana and M. Venu Gopal Reddy
Department of Pharmaceutical Sciences, SIMS College of Pharmacy, Guntur, Andhra Pradesh, India
bhavanamanthri119@gmail.com

Abstract:

The successful implementation of nanoparticles for drug delivery depends on their ability to penetrate through several anatomical barriers, sustained release of their contents and their stability in the nanometer size. However, the scarcity of safe polymers with regulatory approval and their high cost have limited the wide spread application of nanoparticles to clinical medicine.They are a new generation of submicron-sized lipid emulsions where the liquid lipid (oil) has been substituted by a solid lipid. SLN offer unique properties such as small size, large surface area, high drug loading and the interaction of phases at the interfaces, and are attractive for their potential to improve performance of pharmaceuticals, neutraceuticals and other materials .General ingredients include solid lipid(s), emulsifier(s) and water. The term lipid is used here in a broader sense and includes triglycerides (e.g. tristearin), partial glycerides (e.g. Imwitor), fatty acids (e.g. stearic acid), steroids (e.g. cholesterol) and waxes (e.g. cetyl palmitate). All classes of emulsifiers (with respect to charge and molecular weight) have been used to stabilize the lipid dispersion. It hasbeen found that the combination of emulsifiers mightprevent particle agglomeration more efficiently.The preparation of the solid lipid nanoparticles was initially done by solvent evaporation method but the particle size , the poly dispersity index and the zeta potential were not desired. As the organic solvents are also used in the above process so the method is changed to the hot homogenization process. The particle size is 56.94.the zeta potential value is -22.7.The Entrapment efficiency of the SLNs was found to be in the range of 80 to 95%In-vitro drug release studies were performed for all these SLNs for 24 hrs in pH 6.8 phosphate buffer. In these studies the cumulative percentage drug release from all these formulations showed prolonged release. The formulation (F2) was found to be promising prolonged release. This formulation (F2) released 77.3 % of drug in 24 hours.

Keywords: Nalbuphine , Zeta potential, emulsifiers.

E-24

Formulation, Evaluation, Optimization and In vivo Study of Floating Drug Delivery System of Antihypertensive Drug Losartan Potassium

B. Satish Kumar and M. Ravali
Department of Pharmaceutics, Gokaraju Rangaraju College of Pharmacy,
Hyderabad - 500090, Telangana, India
satish78933@gmail.com

Abstract:

Oral route is always the most popular and preferred route for drug delivery to the systemic circulation due to its low cost of therapy, ease of administration and patient compliance. Floating drug delivery system is one of the important system of gastro retentive drug delivery systems. In the present study floating tablets were prepared by using direct compression method by incorporating HPMC K100M, ethyl cellulose and gas generating agent sodium bicarbonate by using optimization techniques. Study was performed on the effect of process variables on the drug release. Evaluated, optimized the gastro gastro retentive floating tablets

and stability studies were carried out at 400 ₹ ± 2 ₹/75% ±5% RH invivo evaluation method was performed by using rabbits as animal models.

Keywords: losartan potassium, optimization, HPMC.

E-25

Effect of Lipids on Physicochemical Properties of Letrozole Loaded Solid Lipid Nanoparticles

A.V. Vivek Varma and Geethika Reddy
Department of Pharmaceutics, Gokaraju Rangaraju College of Pharmacy, Hyderabad, Andhra Pradesh, India
a.v.vivekvarma@gmail.com

Abstract:

The objective of the current investigation was to prepare solid lipid nanoparticles (SLNs) from different lipids and to study the effect of lipids on physicochemical characteristics of letrozole loaded SLN. In order to prepare small, stable, uniform and high Letrozole loaded SLNs, many factors such as lipid and stabilizer concentration and preparation parameters can be considered. Out of these, we have selected solid lipid as lipid matrix to investigate an effect on SLNs. SLNs were prepared using different lipids by modified hot sonication method. The effect of different lipids and stabilizers on physicochemical characteristics of Letrozole loaded SLNs were investigated. Letrozole loaded SLNs showed different physicochemical properties and release profiles according to used solid lipid. In case of particle size, SLN1 showed biggest particle size (532.5 ± 26.4nm) and highest encapsulation efficiency (81.37 ± 6.72%) and, SLN 4 showed highest cumulative drug percentage (89.4 ± 1.8%, 24 h) release. These results suggest that lipids type affect physicochemical properties and release profile of SLN. The choice of lipid and stabilizer played important role on the physicochemical characteristics and *in vitro* release of Letrozole loaded SLNs.

Keywords: Letrozole, Solid lipid nanoparticles, in vitro release, stability.

E-26

Development and Evaluation of Perforated Floating Drug Delivery Capsule of Amoxycillin Trihydrate

Manishma Kakati, Bipul Nath, Koushik Nath and Deepa Nag
Girijananda Chowdhury Institute of Pharmaceutical Science, Azara, Guwahati (Affiliated to Assam Science and Technology University), Jalukbari, Guwahati, Assam, India
koushiknath2335@gmail.com

Abstract:

The aim of present study is to formulate a perforated floating capsules of AMOX with HPMC K4M and polyethylene oxide (PEO) in different proportion by dry powder blending technique. The basic design consists of an insoluble perforated hard gelatin capsule body, filled with dry powder blends of drug with polymer blends HPMC/PEO, gas generating agent and sealed with soluble gelatin cap which is then over coated with water soluble polymer (PEG 6000), so that after quick solubilization of the coat water enter through the perforated holes of the insoluble capsule wall and allow controlled swelling along with effervescence. The effects of varying polymers proportions either alone or in combination on drug release profile were evaluated. Release study showed that drug release profile could be sustained by increasing the concentration of HPMC K4M and PEO. The formulation containing HPMC K4M and PEO at the concentration of 15.6% showed more than 85% of drug release at the end

of 12 hours. The formulations containing sodium bicarbonate 35-40 mg per capsule showed desired buoyancy (floating lag time of about 1 minutes and total floating time of >12 hours). Results shows that HPMC K4M and PEO in combination with sodium bicarbonate as a gas generating agent can be used to develop sustained release floating capsules of AMOX. Thus, the designed capsule can be considered as one of the new promising formulation technique in floating drug delivery system and in site specific sustained delivery thereby introducing a new way with improved therapeutic regimen of AMOX.

Keywords: Effervesence, Perforated floating drug delivery system, HPMC, PEO, Amoxycillin Trihydrate, sustained release.

E-27

Design and Development of Drug Loaded Chitosan Microspheres for Colonic Drug Delivery

Gitanjali Jena
School of Pharmaceutical Sciences, Siksha O Anusandhan University, Bhubaneswar, Odisha, India
jgitanjali39@gmail.com

Abstract:

5-Fluorouracil is widely used anticancer drug,which are effective during the S-phase of cell cycle. Since, it has poor bioavailability so targeting of 5-Fluorouracil at site of action is of great beneficial. Attempt has been made to develop a stable microparticulate formulation of 5-Fluorouracil to be administered orally to target colon. Here, chitosan was chosen as polymer. Chitosan microspheres were coated with Eudragit S-100. The Cross linked chitosan microspheres containing 5-Fluorouracil were prepared by emulsification method using glutaraldehyde as cross linking agent and characterized for %Yield, ParticleSize, Surface properties and Morphology, Entrapment Efficiency and DSC. *InVitro* release studies of coated and uncoated chitosan microspheres was performed in pH progression medium at 37 ± 0.5 ^{0}C ,in simulated gastric fluid, simulated intestinal fluid. As compared to chitosan microspheres, coated microspheres(1: 5) showed about 7.88% drug release after 6 hours and rest of drug releases upto 24 hours. When the core:coat ratio is 1: 10, release does not occur. Hence, we can conclude that eudragit coated chitosan microspheres prevents drug release in stomach, small intestine, targets colon only; thus avoiding systemic side-effects associated with 5-Fluorouracil.

Keywords: Colon specific drug delivery system,5-Fluorouracil, Differential scanning calorimetry.

E-28

Glutaraldehyde Cross-Linking Based Valacyclovir Loaded Gelatin Nanoparticles, A Controlled Release Delivery For Anti-Viral Therapy

Nityananda Sahoo and Sridhar Reddy
Jeypore College of Pharmacy, Rondapalli, Koraput - 764002, Odisha, India
nsahoo_scps05@yahoo.co.in

Abstract:

Novelbiodegradable and biocompatible gelatin cross-linking based valacyclovirnanoparticles have been successfully prepared by two-stepdesolvationmethod using acetone as desolvating and glutaraldehyde as cross-linking agent along with a number of variables. FESEM images elucidate the homogenous, smooth and spherical nanoparticles of size 110 nm diameter with 0.046 PI. The highest entrapment efficacy of valacyclovir in gelatin nanoparticles was 89% and the *in vitro* release of valacyclovir about 91% at 48 hwere found. The FTIR study confirmed the absence

of drug-excipients interactions. DSC spectra and XRD thermogram confirmed the stability and amorphous configuration of valacyclovir in gelatin matrix respectively. *In vivo* study was carried out with rabbit using a rapid, simple and sensitive HPLC method having reverse phase C18 analytical column with PDA detector. The T_{max} values of optimized formulation and marketed drug (Valcivir) were found 5 h and 2 h respectively in rabbit plasma. The mean AUC_{0-24} of optimized formulation was found 50% higher than that of Valcivir. This study revealed that valacyclovir loaded gelatin nanoparticles is not only simple and cost efficient delivery but also offers a promising controlled release with anti-viral therapy through oral administration.

Keywords: Valacyclovir; Nanoparticles; Gelatin; Controlled release; *in vivo* study.

E-29

Design and Evaluation of Mucoadhesive Tablets of a Statin Drug Using Different Natural Polymers

B. Hemamalini, S. Kavibharathi, D. Krishnarajan and A. Manimegalai

Department of Pharmaceutics, JKKMMRF'S-Annai JKK Sampoorani Ammal College of Pharmacy, Komarapalayam - 638183, Tamil Nadu, India

hemabala154@gmail.com

Abstract:

The aim of the present study was to design the controlled drug delivery system of mucoadhesive tablets of Simvastatin to minimize the side effect, improve the bioavailability, to reduce the frequency of administration and to improve the patient compliance by using different natural polymers such as guargum,xanthan gum,karaya gum,carbopol 934 and chitosan along with other excipientsby wet granulation method.Formulations were evaluated for preformulationparameters, micrometric properties of powder blends, invitro drug release profile, release kinetics and stability studies.The formulations were found to have good preformulation characteristics. All the physiochemical parameters of prepared mucoadhesive tablets comply with IP specifications. Invitrodrug release studies were carried out using modified USP dissolution apparatusII (basket type) and modified USP disintegration apparatus. It was concluded that guar gum in the concentration ratio of 1:3 was optimized concentration for oral sustained release tablet of simvastatin.Simvastatin release kinetics data was showed that the straight line of linear regression analysis indicates zero order kinetics is a best fit to explain the release data. The optimized formulation tablets was stable at 40 ± 2, 75% ± 5% RH upto three months.The present work demonstrated that the possibility of making a mucoadhesive drug delivery system for simvastatin which will be more efficacious and acceptable than the conventional drug delivery of simvastatin and it could be a drug delivery of choice in the treatment of hypercholesterolemia.

Keywords: Simvastatin**,** natural polymers, wet granulation method, hypercholesterolemia.

E-30

Development and Characterisation of Self Micro-Emulsified Tablets of Simvastatin

Prasanta Kumar Biswal, Bipin Bihari Panda and Santosh Kumar Mahapatra

Gayatri College of Pharmacy, Department of Pharmaceutics, Jamadarpali, Sambalpur - 768200, Odisha, India

drprasantabiswal74@gmail.com

Abstract:

In the present study, concentration of cross carmelose sodium (CCS), microcrystalline cellulose (MCC) and maltose have optimized in self-micro emulsified tablet (SMET) of simvastatin, an antihyperlipidemic drug. The self-micro emulsified liquids (SELS) of simvastatin were prepared with Linoleic acid, PEG 400 and Tween 80. The SMET of SELS were prepared by adsorption followed by compression phenomenon using CCS (A), maltose (B) and MCC (C) which were optimized through 2^3 factorial design considering responses like disintegration time (DT), time for 50 % (t50) and time for 80% (t80) of drug release. Droplet size and turbidity of disintegrated SMET emulsion sample was within 2.57 ± 7.46 to 4.83 ± 5.82µm and 16.45 ± 6.34 to 27.09 ± 6.11 nephlometric turbidity units (NTU) respectively. The factors A and B were directly and C was inversely related with responses. Response surface methodology was used to predict the levels of the factors A, B and C required for obtaining an optimum formulation with minimum dissolution time. Observed responses were in close agreement with the predicted values of the optimized formulation, thereby demonstrating the feasibility of the optimization procedure in developing self-micro-emulsified tablet dosage forms.

Keywords: Self-micro emulsified liquids, self-micro emulsified tablet, Simvastatin, optimisation.

E-31

Optimization Dissolution Rate by Inclusion Complexation of Repaglinide Using β Cylclodextrin

Sidhartha Padhy, Simanchal Panda and Monalisa Nayak

Jeypore College of Pharmacy, Rondapalli, Jeypore, Koraput - 764001, Odisha, India
sidharthapadhy068@gmail.com

Abstract:

In the current research, Repaglinide is a carbonoyl methyl benzoic acid derivativesinsulinotropic agent used for treatment of NIDDM (non insulin dependent diabetes mellitus) and belongs to class II BCS drugs. The present research work is an attempt to enhance the solubility of the poorly soluble drug, Repaglinide(RPG). The drug also having poor flow properties, which is significantly enhanced by complexation with beta cyclodextrin (BCD).Micromeritics study of pure drug (Repaglinide) measured by tapped density, bulk density, angle of repose, carr's index , hausner's ratio which found to be 0.1742,0.2632,33.82%,1.52,33.52 respectively. After complexationit optimized to 0.294,0.384,23.43%,30.064 →1.306 of above parameters respectively. The calibration curve of RPG with 0.1N HCL and distilled waters with enhanced ratio calibrated a straight line with regression value of 0.999 at 242 nm. solubility study with solvents distilled water and 0.1N HCl found as 15.78, 84.29mg/100mL respectively. Dissolution of pure drug was found to 20.18%DR after 30min. Complexation made by physical mixture (PM) and kneading method(KM). Phase solubility study shown 5.76,6.24,6.88,7.74, 7.06, 5.54 mg/100ml with molar concentration of BCD 0.5,1,1.5,2.0,2.5,3 respectively. Which was optimized at 1:2. In PM and KM % drug content found 83.82 and 85.62 respectively. The kneading method was optimized by altering solvents at various temperature which shown 15ml ethanol at 45 →C was the maximum. The complexation was confirmed by XRD and dissolution carried out at IMMT, BBSR . The fuse peak confirmed

the complexation. The optimized dissolution rate found to be 86.43% compared to pure RPG of 20.18 at 30min.

Keywords: Repaglinide, β-cyclodextrin, XRD, Complexation.

E-32

Studies on Design and Evaluation of Transdermal Patches of Ofloxacin

A. Nedunchalian, S. Harish Kumar, R. Veerajothi and S. Chandra

Department of Pharmaceutics, JKKMMRF'S College of Pharmacy, Komarapalayam, Tamil Nadu, India

nedunchalian21@gmail.com

Abstract:

In a transdermal drug delivery system the drug is applied in a relative high doses to the inside of a patch which is worn the dermo for an extended period of time. Through a diffusion process, the drugs enters the blood stream delivery through the dermo, the drug will keep diffusing into the blood for a long period of time maintain the constant concentration of the drug in the blood flow. The purpose of the study is design and evaluation of transdermal patches of Ofloxacin by using the different polymers. The solvent casting method was used for the formulation of transdermal patches. Five types of patches were prepared by using HPMC and MC in different ratio using methanol and distilled water (1:1) as a solvent and span80 (1%) as a permeation enhancer while glycerine as a plasticizer. The physiochemical evaluation has been done on In-vitro permeation study. Thickness of the patches,weight uniformity, folding endurance, percentage moisture content etc.In-vitro diffusing study has also performed by using Franz diffusion cell method. The formulated transdermal drug delivery system Ofloxacin using different polymers such as HPMC and MC had shown good promising results for all the evaluated parameters. Based on the In-vitro release and drug content results, formulation F4 was conclude as an optimized formulation, which shows good release pattern of drug.

Keywords: Patches, Ofloxacin, Permeation – enhancer, solvent –casting method.

E-33

Preparation and Solid State Characterization of Carvedilol Cocrystals

Shivarani Eesam, Ravi Kumar Bobbala and Raghuram Rao Akkinepally

University College of Pharmaceutical Sciences, Kakatiya University, Warangal – 506009, Telangana, India

rrakkinepally@niper.ac.in

Abstract:

Cocrystallization is an effective technique for enhancement of the physicochemical properties of poorly water soluble drugs. Cocrystalsare prepared with combination of an active pharmaceutical ingredient and FDA approved GRAS coformers. Nutraceuticals are also GRAS molecules with acceptable safety profiles, which can be used as coformers in pharmaceutical cocrystallization technique. The synergistic effect of nutraceuticalsas coformers can be utilized to improve the physicochemical properties of APIs.Carvedilol (CAR) is a nonselective beta/alpha1 blocker used in the treatment of mild to moderate congestive heart failure and hypertension. It belongs to the BCS class II drugs, which show poor aqueous solubility. L-Carnitine (LCN) is an amino acid which is reported to possess mild antihypertensive activity.The present study is an attempt to prepare cocrystals of CAR using

LCN as a conformer to improve the physicochemical properties of CAR as well as synergistic effects when given in combination. Various stoichiometric ratiosof CAR-LCNcocrystals were prepared using Liquid Assisted Grinding method. The preparedcocrystals were characterized and studied using DSC and XRPD. The DSC and XRPD studies revealed that cocrystalswere not formed with CAR and LCN combination at various stoichiometric ratios. Hence, the study's future scope is to prepare cocrystals using other possible coformers (Nutraceuticals) which may enhance the physicochemical properties of CAR.

Keywords: Carvedilol, L-Carnitine, Cocrystallization.

E-34

Development and Characterisation of Topical Nanogels Containing Antifungal Agent Clotrimazole

Ramanjeet Kaur and Amit K. Goyal
Department of Pharmaceutics, ISF College of Pharmacy, Moga – 142001, Punjab, India
rmng13@gmail.com

Abstract:

The aim of this study is to formulate topical antifungal clotrimazole nanogel by double emulsification method. The characterization of formulation is done for the particle size which should be below 400 nm. The particular formulation of nanogel contains an emulsifier phase, co-emulsifier, with mean size of 184.7 nm. The drug entrapment in the formulations was satisfactory. The factorial design was made for the optimization of the formulation and the formulations are characterized for in-vitro drug diffusion, skin permeability, rheological properties and in-vivo animal study. The comparison between the conventional marketed and optimized formulation showed better results for optimized formulation. The optimized formulation showed optimal permeability properties and possessed sustains release during the study period. **Result**: Studies have suggested that there were no significant changes in the formulation characteristics. Based on change in particle size and percentage residual drug content, nanogel shows stability in both refrigerated and accelerated temperature than at room temperature. In-vivo skin retention and permeation studies have demonstrated better permeation with controlled release of drugs for longer period of time. Developed formulation has huge potential to efficiently eradicate fungal infection.

Keywords: Nanogel, Sustain drug delivery, Antifungal.

E-35

Formulation Evaluation of Capsules Containing Budesonide Micro Particulates For Delayed Release Followed By Enteric Coating

G. Venkatasiva S S Kondala Rao, I. Harish, P. Raghuveer and A. Prameela Rani
University College of Pharmaceutical Sciences, Acharya Nagarjuna University, Guntur, Andhra Pradesh, India
gunjasiva18@gmail.com

Abstract:

This paper dealt with Budesonide enteric-coated modified release capsules in which the drug dose is situated as a multiparticulate coat. Sugar pellets were loaded in Fluidized Bed Dryer by applying the coat contains budesonide and polymer (ethyl cellulose). Budesonide was mainly utilized for inflammatory bowel disease including Crohn›s disease, ulcerative colitis and microscopic colitis. To achieve that drug needed to be delivered at the site of action.The main objective was to formulate

and investigate drug release profile of capsules containing Budesonide micro particulates for delayed release through extended release polymer coating followed by enteric coating. The effect of the amount of the polymer in the coat was also studied and found to be optimum(91% drug release with in 8 Hrs) when ethyl cellulose used at a concentration of 6.6%.Eudragit 30D-55 was used as a enteric coating polymer. Formulation containing eudragit in the concentration 17.5% has shown good enteric coated properties. Concentration of plasticizer palyed an important role in enteric coating process and was optimized at a concentration 20%.stability studies were conducted at 40^{0}C/75%RH for 3 months and results were compiled with standards.

Keywords: Budesonide, ethyl cellulose, entry coating.

E-36

Formulation and Evaluation of Poly Herbal Shampoo Compared To Marketed Shampoo

Manogna Reddy D
JSS College of Pharmacy, Mysuru – 570015, Karnataka, India
manureddydevarapalli@gmail.com

Abstract:

Shampooing is the most common form of hair treatment. Shampoos primarily aim at cleansing the hair and scalp. Herbal shampoos are more popular among consumers. We have evaluated and compared the herbal shampoo with marketed shampoo. The findings of this investigation reveal that synthetic preservatives have sometimes been the cause of adverse effects among consumers. We have used the physico-chemical approach to preservation and by formulating a self preserving shampoo, have avoided this risk posed by chemical preservatives. However, the aesthetic attributes, such as lather and clarity, of the laboratory shampoo are not comparable with the marketed shampoo. The foam volume was on par with marketed shampoo. Although the retail products do not fare so well in the tests conducted by us, they enjoy market popularity, especially if they foam well. This is mainly due to the false notion among consumers that 'a shampoo that foams well, works well', and no real effort on the part of manufacturers to counter this fallacy.

Keywords: Herbal shampoo, Radical approach, Physico-chemical approach, Aesthetic attributes.

E-39

Formulation and Evaluation of pH Dependent Zolmitriptan *In-Situ* Nasal Gel

A.J. Jadhav, S.B. Gondkar and R.B. Saudagar
Department of Pharmaceutics, KCT'S R.G. Sapkal College of Pharmacy, Anjaneri, Nashik -422213, Maharashtra, India
aish.jgd@gmail.com

Abstract:

Development of pH sensitive Zolmitriptan in-situ gel was formulated to improve absorption and patient compliance. In the present research work, mixture of carbopol 940 and hydroxypropylmethylcellulose K 100 were used to confer pH sensitive gelation property. Different formulations were prepared by varying the concentrations of carbopol940 and HPMC K100. These formulation were evaluated for parameters like pH, drug content, viscosity, mucoadhesive strength, gel strength, in-vitro drug release, in-vitro permeation and drug excipients compatibility. In theseformulations the release profile was depend on the concentration of carbopol 940 and HPMC K100.

A 3^2 factorial design was applied to see the effect of variables carbopol 940 (X1) and HPMC K100 (X2) on the various models to ascertain kinetics of drug release. Regression analysis and analysis of variance were performed for dependent variables. The results of the F-statistics were used to select the most appropriate model. Formulation containing carbopol 940 (0.1%) and HPMC K 100 (0.2%) was found to be optimum. The study indicate that the formulation was effective in providing in-vitro release of drug and the mucoadhesive formulation.

E-40

Formulation and Evaluation of Fast Disintegration Metoclopramide

Praveena P, Kanimozhi R, Kaviya N and Chandra S
Department of Pharmaceutics, JKKMMRF's Annai JKKM Sampoorani Ammal College of Pharmacy, B. Komarapalayam – 638 183, Tamil Nadu, India
praveenaprabhakaran1997@gmail.com

Abstract:

Metoclopramide hydrochloride (MH) is chemically 4-amimo-5-chloroN[2-(dimethylamino)-ethyl]-2-methoxybenzamide monohydrochloride monohydrate. It is a potent dopamine receptor antagonist. It is a potent antiemetic and is effective in the treatment of nausea and vomiting associated with cancer chemotherapy, pregnancy, migraine etc. It is also used for the treatment of diabetic gastric stasis and gastrooesophageal reflux disease. The fast dissolving tablet was prepred by using different superdisintegrant with different ratio. FT-IR study revealed no interaction between the drug and excipients. Tablets were characterized for hardness, friability, weight variation, wetting time, disintergration time, drug content, dissolution and dispersion time. Among the nine formulations, F6 was selected as the best formulation as its wetting time was 39 seconds, disintegration time was 12 second, dispersion time was 49 seconds and %CDR after 6 minutes was 99.46%. F6 was found to be stable at $40^0C \pm 2^0$ C and 75±5% RH which was confirmed by FT-IR study.

Keywords: Metoclopramidehydrochloride, fast dissolving tablet, superdisintegrants.

E-41

Formulation and Evaluation of Diclofenac Sustained Release Tablets Using Different Grades of Hpmc Polymer

Elangovan S, Manimegalai A, Sakthivel M and Chandra S
Department of Pharmacutics, JKKMMRF'S Annal JKK Sampoorani Ammal College of Pharmacy, Komarapalayam, Namakkal - 638183, Tamil Nadu, India
elangoajith0@gmail.com

Abstract:

The present work focuses on preparation of Diclofenac sustained release tablets in order to reduce the dosing frequency, there by improve patient compliance and to produce uniform drug release for a prolonged period of time compared to the conventional Diclofenac tablets, release retardant polymers in the concentration of 5%, 6% and 7%. The prepared granules were evaluated for various pre-compression parameters like angle of repose, bulk density, tapped density, compressibility index and Hausner's ratio. The FT-IR studies concluded that there was no drug-polymer interaction. The post compression parameters like appearance, thickness, hardness, weight variation, friability, drug content, in-vitro drug release and order of kinetics were studied. The drug release of best formulation F_6 was

found to be 62.1±0.378% at the end of 10 hours. The overall results revealed that as the concentration of polymer was increased, the drug release decreased. Plots of log cumulative Percentage drug remaining Vs Time were found to be linear with all the formulations indicating that the drug release from these formulations was according to the first order kinetics. Stability studies of Formulation F6 revealed that the drug was stable even after stored at 25±2°c/60±5%RH and 40±2°C/75±5%RH for 45 days. From all the above observations, the formulation F_6 was found to be a better one which satisfied all the criteria for sustained release tablets.

Keywords: Diclofenac, Hydroxypropyl methylcellulose, Kinetics, sustained release.

E-42

Development of Coriander Extract/Powder-Loaded Oil-Less Macroemulsion

Sameer Balraj Singh Gill, Pankaj Pal, Puja Chanda, Indu Melkani and S. Tamilvanan
Department of Pharmaceutical Sciences, Lovely Professional University Phagwara - 144411, Punjab, India
gillsameer827@gmail.com

Abstract:

Introduction: To break the traditional way of dispersion system production either by mixing oil with water or water with oil in presence of surfactant molecule, the production of emulsion (like particles) will be made by utilizing the mixture of eutectic components and solution of slightly hydrophilic cellulosic polymer in acetone as an alternative or replacement to vegetable or semi-synthetic oils. The combination of two components that forming the liquid are known as Eutectic mixture, one of the leading development in forming the macroemulsion. **Objective:** The objective of this research workare (1) to find out suitable hydrophilic semi-synthetic cellulose polymer and eutectic forming components for making emulsion like particles, (2) to identify the appropriate experimental conditions for producing oil-less macroemulsion-loaded with coriander extract and or powder for the management of oral *candidiasis*, (3) to characterize the produced the emulsion like particles via particle size analysis, stability study, drug entrapment efficiency, drug release and (4) to perform in vitro antifungal activity against oral *candidiasis*. **Materials and Methods:** A combined emulsifying technique was used to produce macroemulsion whereas camphor and menthol were selected to form the eutectic mixture. **Result and conclusion:** The oil-less emulsion formed were found to be stable for more than one month. The mean particle size of the dispersed eutectic mixture was analyzed by mastersizer.

Keywords: Oral *candidiasis,* Oil-less macroemulsion, Coriander, Oral candidiasis, Eutectic mixture, Powder, Extract.

E-43

Formulation and Evaluation of Fast Dissolving Tablets of Aceclofenac Using Different Superdisintegrant

V. Parkavi, S. Chandra, S. Santhosh Kumar and K. Karthik
Department of Pharmaceutics, JKKMMRF's College of Pharmacy, Komarapalayam, Tamil Nadu, India
velparkavi@gmail.com

Abstract:

Convenience of administration and patient compliance are gaining significant importance in design of dosage form .Fast dispersible tablets

disintegrate either rapidly in water, to form a stabilized suspension, or disperse instantaneously in the mouth to be swallowed without the aid of water. Aceclofenac, a nonsteroidal anti-inflammatory drug, is used for post traumatic pain and rheumatoid arthritis. Fast dissolving tablet of aceclofenac were prepared by direct compression method after incorporating superdisintegrants croscarmellose sodium, crospovidone and sodium starch glycolate. Nine formulation having superdisintegrant at different concentration (10, 15, 20 mg) level were prepared. Effect of superdisintegrant on wetting time, dispersion time, drug content and in vitro release has been studied.Tablet containing cross carmellose sodium showed excellent in vitro dispersion time and drug release as compared to other formulation. After study of nine formulations F3 shows short dispersion time with maximum drug release in 30 minutes. It is concluded that fast – dispersible aceclofenac tablets could be prepared by direct compression using superdisintegrants.

Keywords: Aceclofenac, Superdisintegrant, Fast dispersible tablets, Dissolution test.

E-44

Optimization and Evaluation of Self Emulsifying Drug Delivery System of Nimodipine

Pattnaik Sidharth, Mishra V.V.B.K and Rath Amrit Kumar

Jeypore College of Pharmacy, Jeypore, Odisha, India

sidharthpatnaik2468@gmail.com

Abstract:

Oral route has been the major route of drug delivery for the treatment of various chronic diseases. Nimodipine, an antihypertensive, calcium channel blocker, has poor water solubility and the oral delivery is frequently associated with low bioavailability, high intra- and inter-subject variability, and a lack of dose proportionality and therapeutic failure. The bioavailability of nimodipine, having dissolution dependent bioavailability pattern, can be increased by increasing the solubility. Hence an attempt was made to design the Self Micro-Emulsifying Drug Delivery Systems (SMEDDS) in order to achieve an enhancement in solubility. As the absorption window of nimodipine is low in the stomach, an attempt was further made to release the drug specifically into the intestine, which was achieved by incorporating SMEDDS formulation into hard gelatin capsule and coating it with pH sensitive polymeric solution (SMEDDS CAP). Equilibrium solubility studies indicated the choice of Oleic acid as lipid, and of Cremophor RH40 and PEG 400 as emulgents for formulating the SMEDDS CAP. Ternary phase diagram were constructed to select the area of microemulsion and the amounts of lipid and emulgents as the critical factor variables. The SMEDDS were systematically optimized by 3^2 full factorial design. The nanometer size range and high negative value of zeta potential depicted non-coalescent nature of the optimized SMEDDS. TEM studies on reconstituted SMEDDS demonstrated uniform shape and size of globules. Thermodynamic studies, cloud point measurement and accelerated stability studies ascertained the stability of optimized formulation.

In-vivo pharmacokinetics of the best formulation OS6 CAP showed higher AUC and longer plasma half life in comparison with marketed formulation. Relative bioavailability increased 4.01 folds as compared to marketed formulation. The studies, therefore, indicated the successful formulation development of enteric coated SMEDDS CAP system with distinctly improved bioavailability potential of poorly water-soluble drug nimodipine.

Keywords: Nimodipine, SMEDDS, SMEDDS CAP, 3^2 full factorial design.

E-45

Study on Formulation and Development of Hydroxymethylglutaryl-CoA Reductase Inhibitor Solid Lipid Nanoparticles

Harjeet Singh, Ramdayal Gupta and Girendra Gautam
Research Scholar, Department of Pharmacy, Bhagwant University, Ajmer - 305004, Rajasthan, India
h_singh1gill@yahoo.co.in

Abstract:

Rosuvastatin Calcium is a fully synthetic 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase inhibitor and has dose-linear pharmacokinetics. Rosuvastatin is anti-hyperlipidemic drug with low oral bioavailability (20%) due to first-pass metabolism. The intent of this investigation was to prepare, characterize and evaluate to improve pharmacokinetic effects of Rosuvastatin calcium by solid lipid nanoparticles (SLNs). The drug loaded SLNs were prepared by the modified solvent emulsification – diffusion technique using stearic acid as lipid, poloxamer 407 as surfactant and tween 80 as co-surfactant. The prepared SLNs were characterized for particle size, polydispersity index (PDI), zeta potential, entrapment efficiency, drug loading, *in- vitro* drug release. The formulation OR2 was optimised based on the particle size, polydispersity index (PDI), zeta potential, entrapment efficiency, drug loading which showed 115.49 ± 2.97, 0.456, – 18.40, 97.16 ± 3.73 and 60.34 ± 2.51. Transmission electron microscopy (TEM) studies on formulation OR2 revealed that all the particles were within nano size range. Differential scanning calorimetry (DSC) and X-ray diffraction analysis (XRD) analyses indicated that the drug incorporated into SLNs was in amorphous form. Formulation OR2 showed *in- vitro* drug release of 88.70 % at the end of 12 hrs with a sustained release.

Keywords: Rosuvastatin, Stearic acid, Poloxamer, Nanoparticles.

E-46

Formulation and Evaluation of Muco-Adhesive Microspheres of anti-Diabetic Drug

G. Pranathi Sowmya, Hussain Peera and Prem Kumar
Department of Pharmaceutical Sciences, SIMS College of Pharmacy, Guntur, Andhra Pradesh, India
pranathigsowmya@gmail.com

Abstract:

In the present research study, Pioglitazone HCl was chosen as model drug and muco-adhesive microspheres were formulated by solvent evaporationtechnique. Microspheres are prepared to control the release rate of the drug and target to the specific site of the body to make an enormous impact in the formulation and development of novel drug delivery system. The muco-adhesive microsphereare prepared by solvent evaporation technique were evaluated for percentage yield, Drug entrapment efficiency, SEM, Particle size analysis, Percentage moisture loss, Swelling index and percentage yield

was found to be 60.60 to 81.2,Drug content range from 45 to 87.58 and drug entrapment efficiency from 58 to 68 respectively,The microspheres were uniform in size in each formulation and the mean size ranged from 242.5±0.01to 1007.5±0.02 This study was carried out for a period of 6 h, The percentage moisture loss was found to be in the range of 0.36to 0.51for the formulation F1 to F6. From the calculated data it is seen that, the swelling index for formulations as F5>F3>F4>F2>F6>F1. After 6hrs HPMC-E50 higher swelling was observed for formulation F5 (86%) containing muco-adhesive polymer as compared to other muco-adhesive polymer based formulations.Infrared analysis of muco-adhesive microsphere formulation F5 showed no interaction between drug and polymer during the formulation process the SEM of muco-adhesive microsphere. The SEM of microspheres F5 found that the particles are of irregularspherical shape and completely covered with the coat polymer. Therefore,microspheres of anti-diabetic drug have been successfully formulated as it was observed by solvent evaporation techniques on the percentage yield,drug entrapment efficiency,particle size analysis,percentage moisture loss,swelling index. Thus, it can be concluded this study can be beneficial for the formulation of muco-adhesive microspheres by solvent evaporation.

Keywords: pioglitazone,solvent evaporation,carbopol, muco-adhesive microsphere.

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Formulation and Evaluation of Sustained Release Matrix Tablets of Aceclofenac Using HPMC

S. Santhosh Kumar, S. Chandra, V. Parkavi and S. Somasuntharam
Department of Pharmaceutics, JKKMMRF'S College of Pharmacy, Komarapalayam, Tamil Nadu, India
santhoshbpharm4@gmail.com

Abstract:

The objective of the present study was to develop 'once daily' sustained release tablets of Aceclofenac (200mg) by wet granulation using hydrophilic polymer like Hydroxy propyl methyl cellulose K-100. The drug excipient mixture were sustained to pre formulation srudies. The tablets were subjected to physicochemical studies, in-vitro drug release, kinetic studies and stability studies. FITR studies shown there was no interaction between drug and polymer. The physicochemical properties of tablets were found within the limits. Aceclofenac is a non steroidal anti –inflammatory agent used in symptomatic treatment of rheumatoid arthritis, osteoarthritis and spondylitis. The drug release from optimized formulation was extended for a period of 24 hrs. The kinetic treatment of selected formulation (F8) showed that the release of drug follows zero order models. The optimized formulation were subjected to stability studies for one month at 45º temperature with RH 75±5% and showed there were no significant changes in drug content, physicochemical parameters and release pattern. Results of the present study indicated the suitability of hydrophilic polymers in the preparation of matrix based sustained release formulation of Aceclofenac.

Keywords: Aceclofenac, Matrix tablets, Sustained release, Wet granulation, Hydroxy propyl methyl cellulose K-100.

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A Review on Safety and Pharmacokinetics of Curcumin Based Solid Lipid Nanoparticles in Animal Models

Jai Bharti Sharma, Shailendra Bhatt and Vipin Saini
Maharishi Markandeshwar University, Mullana, Ambala, Haryana, India
bhartikaushish@gmail.com

Abstract:

Curcumin is a yellow pigment obtained from the dried rhizomes of *Curcuma longa* L. Curcumin play a very important role in the prevention and treatment of various chronic diseases. In cancer, curcumin reduces cell proliferation and metastasis, and accelerates apoptosis. Curcumin work in the most of aspects of diabetes, including hyperglycemia, insulin resistance and enhanced insulin synthesis and secretion. But the low bioavailability of curcumin is a barrier to reach its adequate circulating levels and fail to show desirable pharmacodynamic effect. Application of lipids for bioavailability enhancement of curcumin is promising without toxicological risk. Solid lipid nanoparticles(SLN) have been reported as drug carriers to treat neoplasms and tumour targeting. SLN could be a novel approach to deliver curcumin at targeted site and improve its biopharmaceutical performance. The SLN prepared by Ramalingam *et al.*,using N-trimethyl chitosan exhibited controlled drug release in simulated intestinal fluid and brain distribution of curcumin with higher accumulation in the brain parenchymal compartment than vascular pellet, thereby improving its bioavailability. A study reported that, SLN enhance the oral bioavailability of curcumin in rats by facilitating intestinal absorption and enhance its lymphatic uptake. In a study, SLNs formulated with TPGS and Brij 78 codelivering Cur and Pip overcome MDR in A2780/Taxol cells. Thus, the present review concluded that curcumin based SLN are safe and effective way to enhance the bioavailability in animal and human.

E-49

Impact of CYP2C19 Genetic Polymorphism on Pharmacokinetics of Clopidogrel – A Pharmacometric Approach

Aswathy V S, K P Arun, Ananya Joy and Anakha Roy
Department of Pharmacy Practice, JSS College of Pharmacy, Ooty, Tamil Nadu, India
aswathyvs222@gmail.com

Abstract:

In the current research we examined the relation between the genetic polymorphism and pharmacokinetic properties of clopidogrel by using a pharmacometric technique. The objectives of this study is to calculate the pharmacokinetic parameters in the individual patient depending on their genetic characteristics of *CYP2C19* and further to determine the dose and dosage regimen required to every individual patient based on the pharmacokinetic parameters derived by Non Linear Mixed Effect Modelling (NONMEM) procedure. The pharmacogenetic studies done to find out the genetic polymorphism of *CYP2C19* among 29 patients revealed that 10% of the patients (n = 3) were intermediate metabolizers and 3 % of the patients (n = 1) were found to be poor metabolizers with *CYP2C19*1/*2* and *CYP2C19*2/*2* genotype. The mean plasma concentration of 4 extensive metabolizer patients given sample at 22.5 hours post dosing was found to be 0.0918 ± 0.0029 while the plasma concentration at the same time points of 2 poor metabolizers were found to be 0.1542 ± 0.0495 accounting for nearly 40.5% higher concentration between extensive metabolizers and poor metabolizers. This difference was found to be statistically significant with p value of 0.0422 by a two tailed student t-test. The data set showed a best

fit for a two compartment open model with first order absorption.This study concluded that genetic polymorphism of *CYP2C19* has a significant role to play with Clopidogrel plasma concentration**.**

Keywords: Clopidogrel, CYP2C19, Polymorphism, Pharmacokinetics, Pharmacogenetics.

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Development and Evaluation of Lipocomplex Loaded Self Nanoemulsifying Lipidic Systems of Lumefantrine: Improved Biopharmaceutical Attributes

Ripandeep Kaur, Ranjot Kaur, Sarwar Beg, OP Katare and Bhupinder Singh

UGC-Centre of Excellence in Applications of Nanomaterials, Nanoparticles and Nanocomposites (Biomedical Sciences), Panjab University, Chandigarh - 160014, India

bsbhoop@gmail.com

Abstract:

Lumefantrine, an antimalarial drug possesses activity against all the human malaria parasites, but the *in vivo* activity of this molecule get thwarted due to its low and inconsistent oral bioavailability (i.e. 12%) as a function of its poor water solubility and highly lipophilic characteristics and high P-gp efflux problem. The current studies entail the systematic development of phospholipid complex loaded self-nanoemulsifying lipidic formulation in order to improve drug loading efficiency, control drug precipitation along with surmounting poor aqueous solubility and P-glycoprotein (P-gp). Saturated solubility and ternary phase diagram studies facilitated selection of Oleic acid and Tween 80 as surfactants, while Capmul MCM L as cosolvent for formulating the nano-lipidic system. The formulation was systematically optimized using D-Optimal mixture design. The amount of lipid, surfactant and cosolvent were taken as critical material attributes (CMAs), while critical quality attributes (CQAs) were globule size, emulsification time, dissolution efficiency and permeation. Further, three different types of phospholipids were used for the preparation of phospholipid complex by rota evaporation technique and the apt complex was loaded into the self-nanoemulsifying lipidic formulation. The developed complex of lumefantrine was evaluated for solid state characteristics through FTIR, X-RD, hot stage microscopy. *In vitro* supersaturation test was carried out to check the precipitation inhibition tendency of the developed system. The loading efficiency was enhanced significantly by 1.78 fold, while *in vitro* suppression of precipitation was also confirmed. The developed formulation was found to be influential in improving the loading efficiency of lumefantrine and in inhibiting the *in vitro* precipitation of lumefantrine. Thus, indicating their potential to improve the oral bioavailability of lumefantrine.