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ABSTRACT BOOK

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Section 1

5th IUPHAR WCP-NP, 2019 INDIA
Title: Design of small peptides antagonist against leptin receptor for the treatment of obesity and its associated immune-mediated diseases: In silico approach

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Abstract:

Excess adiposity in obese inhibits negatively impacts immune function and host defense. Obesity is characterized by a state of low-grade, chronic inflammation in addition to disturbing levels of circulating nutrients and metabolic hormones. The treatment of obesity and its associated immune-mediated diseases is challenging due to the impaired function of the leptin system. These disorders are managed through antibiotics and by cytokines replacement. The synthetic immunotherapeutic carry a degree of risk, time-consuming and expensive. Hence, the complexity of existing therapy and adverse effects emphasizes the need for an alternative approach for the management of immune dysfunction associated with obesity. Moreover, the macromolecules have limited penetration into the tissue and blood/brain barrier even might induce severe side effects like induction of anti-idiopathic antibodies and immune complex formation. In silico small molecule antibody technology has been successful in the design of novel biologics for the diagnosis of diseases and therapeutic interventions. In this study, the crystal structure of the leptin receptor (LEPR) complex with a monoclonal antibody (9F8 Fab) was explored to predict antigen-antibody (Ag - Ab) interactions using bioinformatics tools. The LEPR of complementarity -determining region (CDR) loops were mutated with published positive control residues of Ser, Thr, Tyr, Trp, and Phe to design a set of 678 peptides which were evaluated through Ag-peptide docking, binding free-energies, and interaction energies. Among, six proposed lead peptides have been found to show better binding affinity in docking and molecular dynamics simulations as well as docking score, free-energy, and interaction estimations compared to native 9F8 Fab peptides. Our study illustrated a robust protocol for computer-aided antibody engineering as well as six potential lead antibodies to develop biologic-based therapeutics targeting obese and associated mediated autoimmune and inflammatory diseases.

Title: Beneficial effects of Celasterus paniculatus in prenatal valproic acid induced autism spectrum disorder in rats.

Author Name: Rohit Kumar
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Abstract:

Introduction:

Autism Spectrum Disorder (ASD) is a group of complex neurodevelopmental disorder of unknown etiology which manifests with problems like social interaction, language, communication and behaviour deficit like stereotype and repetitive behaviour. Various studies have demonstrated beneficial effect of Celasterus paniculatus (CP) as a neuroprotective and memory enhancer in numerous disorders related to CNS. Present study was designed to scientifically evaluate the effect of Celasterus paniculatus in ASD and elucidate the molecular mechanism.

Method:

A rat model of autism was developed by giving 600mg of Valproic acid on 12.5-day gestation to pregnant female rats. Male pups were divided into 4 groups. Group I (Normal Control), Group II (Disease control VPA 600mg/kg on PND 12.5), Group III (Standard treatment, Risperidone 2.5 mg/kg, PND 23 to 43) and Group IV (CP 1000mg/kg PND 23 to 43). Various developmental, behavioural, biochemical and histopathological parameters were assessed. Additionally, effect of CP treatment on oxidative stress, neurotransmitter and inflammatory markers were also evaluated to elucidate the mechanism.

Results: Poor development and growth and oxidative stress disorder were also observed in a rat model of autism. Treatment with CP resulted in significant improvement in the social interaction and behavioural and reduction in oxidative stress. In histopathology, CP treatment significantly ameliorate loss of pyramidal neuron in CA1, CA2 and CA3 region, neuronal loss and gross neuronal shrinkage as compared to disease control. Furthermore, treatment with CP reduced pro-inflammatory inflammatory markers and normalize the neurotransmitter levels.

Conclusion: Our findings illustrate that beneficial effect of Celasterus paniculatus in a rat model of autism through suppressing the oxidative stress markers and inflammatory markers.

Ref No: H9gPUZ4U

Title: Isomalto-Oligosaccharides potentiates gut butyrate production and promotes the metabolic health benefits of polyphenol-rich cranberry extract.

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Abstract:

Polyphenols-rich cranberries have shown beneficial metabolic health benefits in high fat diet induced alterations. Many of the food products being prepared using cranberries uses high sugar content to mask the slightly tart taste of it. Refined sugars and artificial sweeteners have per se shown negative effects on resident gut microflora which are crucial for improved metabolic responses. Here we evaluated effects of isomalto-oligosaccharide (IMOs) with polyphenols -rich cranberry extract (CRX) against high fat diet (HFD)-induced metabolic alteration in mice. Male Swiss albino mice were fed normal chow or HFD (58% fat kcal), and
were administered either CRX (200 mg/kg) alone or in combination with IMOs (1 g/kg). Cecal short-chain fatty acids, abundances of selected (1) butyrate producing, (2) metabolically beneficial, and (3) selective lipopolysaccharides producing gram negative gut bacteria were studied. Further, gut-related histological, biochemical, genomic changes along with circulating pro-/anti-inflammatory markers and systemic obesity-associated metabolic changes were studied. Co-supplementation of CRX and IMOs significantly improved cecal SCFAs, especially butyrate levels, and selected butyrate-producing bacteria. The combination also significantly improved beneficial gut bacterial abundance, gut histological alterations upon HFD feeding and related changes (colon mucin production, gut permeability) as compared to individual agents. Combination of CRX and IMOs could be advantageous for normalization of metabolic alterations seen in diet-induced obesity via beneficial modulation of gastrointestinal health.

Sub-code-1104

Ref No: QvBxMpTf

Title: Pomegranate supplementation with tacrolimus in treatment of rheumatoid arthritis: a pharmacokinetic interaction study.

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Abstract:

Currently, numerous cases reports evidenced that there is increase in blood concentration of several drugs when they are co-administered with certain edible fruits. Pomegranate is one such extensively consumable fruit and it is often co-administered with numerous drugs. The aim of current study was to investigate whether and how the pomegranate affects the pharmacokinetics of tacrolimus in rats. Secondly to clarify the implying mechanism of the increase in blood concentration of tacrolimus in presence of pomegranate, we explored the effect of pomegranate on CYP3A4 activities. Liquid chromatography-tandem mass spectrometry method was used to determine the plasma concentration of tacrolimus. On administration of Pomegranate via intragastric route, it increases the maximum plasma conc (Cmax) of tacrolimus by 15.08±1.56 ng/ml as compared to tacrolimus alone group (4.34±0.60 ng/ml). The area under plasma concentration-time curve from time zero to last sampling (AUC0-t) of tacrolimus was 22.42Â±2.30 ng/h/ml increased to 60.84Â±2.85 ng/h/ml, approximately by 3-fold in rat plasma. We found that pretreatment of pomegranate for 12 days, it significantly (p<0.05) increases the plasma concentration of tacrolimus, suggesting that it increases the concentration of tacrolimus by one or more mechanisms. It is therefore suggested that, this herb-drug interaction could be used in a beneficial way by reducing the dose of tacrolimus when co-administered with pomegranate. So, that the plasma concentration of tacrolimus at reduced dose (2 mg/kg) reaches the plasma concentration achieved by 3 mg/kg dose in rheumatoid arthritis and thus reduction of dosage limits the side effects associated with tacrolimus. Thus, herb-drug interaction could be used as a favorable measure to ameliorate drug-related side effects. Currently, numerous cases reports evidenced that there is increase in blood concentration of several drugs when they are co-administered with certain edible fruits. Pomegranate is one such extensively consumable fruit and it is often co-administered with numerous drugs. The aim of current study was to investigate whether and how the pomegranate affects the pharmacokinetics of tacrolimus in rats. Secondly to clarify the implying mechanism of the increase in blood concentration of tacrolimus in presence of pomegranate, we explored the effect of pomegranate on CYP3A4 activities. Liquid chromatography-tandem mass spectrometry method was used to determine the intragastric route, it increases the maximum plasma conc (Cmax) of tacrolimus by 15.08Â±1.56 ng/ml as compared to tacrolimus alone group (4.34Â±0.60 ng/ml). The area under plasma concentration-time curve
from time zero to last sampling (AUC0-t) of tacrolimus was 22.42Â±2.30 ngh/ml increased to 60.84Â±2.85 ngh/ml, approximately by 3-fold in rat plasma. We found that pretreatment of pomegranate for 12 days, it significantly (p<0.05) increases the plasma concentration of tacrolimus, suggesting that it increases the concentration of tacrolimus by one or more mechanisms. It is therefore suggested that, this herb-drug interaction could be used in a beneficial way by reducing the dose of tacrolimus when co-administered with pomegranate. So, that the plasma concentration of tacrolimus at reduced dose (2 mg/kg) reaches the plasma concentration achieved by 3 mg/kg dose in rheumatoid arthritis and thus reduction of dosage limits the side effects associated with tacrolimus. Thus, herb-drug interaction could be used as a favorable measure to ameliorate drug-related side effects.

Sub-Code-1105
Ref No: cvwyLKHu
Title: Therapeutic inhibition of Shigella flexneri host pathogen interaction by a herbal compound.
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Abstract:
Infectious diseases like shigellosis causing dysentery are a major threat to human health. The impact of shigellosis is more severe in the developing countries and in cases of children under 5 year old. The causative organism for shigellosis is Shigella an intracellular, multidrug resistant bacteria. Shigella infection is characterised by painful abdominal cramps, along with blood and mucus in the stool. Shigella reorients the host defence machinery during pathogenesis. As host directed therapy is an emerging approach for multidrug resistant microbes, intervention with host cell factors during Shigella infection may be an effective therapeutic. It is noteworthy that among various host cell factors autophagy mechanism is associated with bacterial clearance and also regulates various pathophysiological conditions. Pharmacological modulation of autophagy is a new approach which provides an opportunity for exploration in infectious diseases. There are a group of herbal drugs which are acting as autophagy modulators. We have identified a herbal compound known as Caps which can act as autophagy inducer to combat Shigella flexneri host pathogen interaction. This herbal compound can exert antimicrobial activity via autophagy and in doing so it may overcome pre-existing mechanisms of resistance. Caps induces autophagy in intestinal epithelial cells by augmenting different autophagic genes. We have observed that Caps also inhibits intracellular S flexneri growth in intestinal epithelial cells using similar concentration that induces autophagic genes. This study will help us to develop a new therapeutic approach in combating S flexneri pathogenesis and also address antimicrobial resistance.
**Sub-Code-1106**

Ref No: HPOe4ul1

**Title:** Lawsone, a phytochemical, targets mitochondrial redox homeostasis and metabolic reprogramming in T cells and suppresses acute Graft-versus-Host Disease without compromising graft versus leukaemia effect

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**Abstract:**

Allogeneic bone marrow transplantation (AlloBMT) is an important treatment modality for haematological malignancies. Although, T-cells in the graft offer beneficial-graft-versus leukemia (GVL) effect, about 40 -60% patients develop acute graft-versus-host disease (aGVHD) within 100 days wherein, allogenic T-cells cause immune reaction and damage host tissues. This necessitates development of novel therapeutics to prevent aGvHD without loss of GVL effect.

Our study aimed to develop novel prophylactic agent for aGVHD. Here, we screened phytochemical drug library for immunosuppressive activity and identified 20 lead candidates. Among these, compound 2F5 (Lawsone from Henna) showed dose dependent suppression of T-cell activation, proliferation and cytokine secretion in vitro without affecting their viability. We used murine model of aGvHD based on allogenic transplantation to evaluate prophylactic efficacy of lawsone. Transient treatment of donor lymphocytes with lawsone (5µM, 4 hours) prior to transplantation completely inhibited aGvHD associated morbidity and mortality in host mice. Survival and body weight improved significantly in recipients transplanted with lawsone treated graft. Peripheral blood chimerism analysis indicated almost complete chimerism in mice transplanted with lawsone treated graft. On the contrary, lawsone did not affect the homeostatic proliferation of syngeneic CD4+ T cells in immunocompromised mice.

Mechanistic studies revealed that lawsone inhibited lymphopblast formation through disruption of cellular redox homeostasis evinced from increased mitochondrial ROS in activated T cells. Thiol antioxidants abrogated immune suppressive action of lawsone indicating a causal role of cellular redox in prevention of T cell receptor dependent metabolic reprogramming. Further, lawsone increased HO1 expression and suppressed AKT/mTOR/NFĸB pathway in activated T cells. We used an in vitro model to test GVL efficacy of T cells and found that lawsone did not inhibit anti-tumour activity towards EL-4 and A20 lymphoma cells. Our study demonstrates efficacy of lawsone in sustaining the GVL effect along with being a potent prophylactic agent for aGVHD.

**Sub-Code-1107**

Ref No: BWoHZ7pg

**Title:** Withaferin A (WA) alleviates Imiquimod induced psoriasis in preclinical murine mode

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Abstract:

Background: Withaferin A (WA) is a highly oxygenated steroidal lactone bio-constituent isolated from Indian Ginseng Ashwagandha, biologically known as Withania somnifera which is well known in Indian medical history for its multiple health benefits since several decades. Psoriasis is a recurrent chronic immune-mediated inflammatory and proliferative dermatological disorder affecting about 2-3% of the world’s population. In the present study, we discerned the protective effect of WA in murine model of Imiquimod (IMQ)-induced psoriasis like inflammation.

Experimental approach: Topical application of IMQ on dorsum of Balb/c mice from day 0 to 6 induced psoriasis like symptoms. Treatment groups included WA incorporated carbopol gel formulations (low and high dose) applied topically and WA free drug administered subcutaneously. We evaluated PASI (Psoriasis Area and Severity Index) scoring and performed Hematoxylin & Eosin (H&E) staining to evaluate dermal morphological changes. Additionally, we evaluated protein levels through studies like ELISA, western blotting and immunohistochemical analysis to analyze inflammatory and proliferative markers.

Key findings: Our results reflected the dose dependent decrease in cumulative PASI score. H&E staining showed restoration of dermal morphology and reduction in epidermal thickness upon treatment with WA. Dose dependent decrease in the number of Ki-67 immunostained cells, decrease in expression of PCNA, principal inflammatory cytokine IL-22 and other key inflammatory markers like pNF-κB, GSK-3 was evident from various protein expression studies.

Conclusion and implications: To the best of our knowledge, this is the first study demonstrating the potential of WA in attenuating IMQ-induced psoriasis in murine model by inhibiting key signaling pathways involved in pathogenesis of psoriasis. The results of our study show that WA might be an effective therapeutic option against psoriasis. Our study also emphasizes the superiority of topical (localized) therapy of WA for treating psoriasis.

Sub-Code-1108

Ref No: yODOX8kO

Title: Mechanism and target for anti-inflammation effect of natural product Andrographolide

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Abstract:

Andrographolide is a natural diterpenoid that is the major constituent of Andrographis paniculata, which is a plant indigenous to Southeast Asian countries that has been used as an herbal medicine in China for thousands of years. In previous studies, we demonstrated that Andrographolide could protect mice against colitis and colitis associated colon carcinogenesis (Autophagy.2014;10(6):972-985. Int Immunopharmacol.2014;20(2):337-345.), Sepsis (Int Immunopharmacol.2012;14(4): 613-619.), neuron-inflammation (Biomed Pharmacother. 2018;97: 1032-1039. Toxicol Appl Pharmacol. 2019;379: 114688.) and lung inflammation (Acta Pharm Sin B. 2016;6(3): 205-211.). Based on these series studied, we explored its binding protein and identified its target for its strong anti-inflammation effect by using biotin-labeled target fish assay, surface plasmon resonance assay, cellular thermal shift assay, microscale thermophoresis assay et al. And also, by establishing the knout out mice of this target protein, the independence of Andrographolide and its target protein was further confirmed. Our studies on only provided
explanation for anti-inflammation effect of Andrographolide but also brought up a novel potential drug target for future drug development

Sub-Code-1109

Ref No: UgBVPTk9

Title: Role of neglected plants in restoration of ceacal gut microbiota and immunomodulatory activity.

Author Name: Anita Singh

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Abstract

Introduction: Himalayan climber *Cuscuta reflexa* (cr) as medicinal and southern region tribal vegetable *Cocculus hirsutus* (ch) has long ethnic reports. Our efforts with water extracts of cr, ch & *Tinospora cordifolia* (tc) demonstrated potential antioxidant, immunomodulatory potential in *in-vitro*, ex *in-vivo* alone or in combination. Therefore, present study was designed to assess the ceacal gut micro-biota & immunomodulatory activity with Predominant combination (PC) of cr (50%), ch (25%), and tc (25%) in immune suppressant mice model.

Method: In the present investigation we have used standardized prednisolone (5mg/kg b.wt) immune suppressant swiss albino mice model. A Predominant combination in a dose of 250,500,1250mg/kg body weight was fed orally in mice induced with prednisolone for 15 days. The tc (500 mg/kg b.wt) was selected as standard formula as it is known immunomodulator. The study investigation includes estimation of Th1(IFN-γ, TNF-α, IL-2)/Th2 (IL-4 & IL-10) cytokine profile in spleen using flow cytometer. The mRNA expression levels of NF-κB & TLR4 were determined in spleen. A phagocytosis in whole blood using FITC labeled E. coli was assessed by flow cytometer. The presence of Lactobacillus, Bifidobacterium, Bacteroides, Firmicutes in ceacal matter were assessed to evaluate gut microflora status.

Result: The PC formulation has reduced the expression of proinflammatory cytokines in dose dependent manner with no effect at 1250 mg/kg. A positive correlation was observed between Th1 & Th2 cytokines (IFN-γ vs. IL-10, R=0.787, P<.001; IFN-γ vs. IL-4, R=0.482, P<.01 & TNF-α vs. IL-10, R=0.773, P<.001; TNF-α vs. IL-4; R=0.395, P<.05). The expression of NF-κB & TLR4 were significantly reduced as compared to experimental control group. The results further demonstrated normalization of phagocytosis activity in PC. Similarly, the restoration of ceacal Bacteroides & increased level of Bifidobacterium was observed in PC specifically at 500mg/kg dose (p<.05). The activity of PC was comparable with tc fed group.

Conclusion: The PC has potential benefit in promoting immunomodulation and restoring the ceacal bacteria. The ethnic claims are suggestive of developing this as value-added product
Title: Green synthesis of silver nanoparticles of Boswellic acid and its in vitro anticancer activity.

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Abstract:

Newer anticancer agents are always in current trend of research and should be developed that either activate extrinsic pathway (death receptor mediated) or intrinsic pathway (mitochondria dependent “Apoptosis pathway). Boswellic acid is pentacyclic triterpene with high retention and low solubility drugs. Hence the major limitation is low solubility and bioavailability. Boswellic acid is recommended along with a fatty meal to increase the absorption. To address these nanoparticular formulations may be synthesized by new technology -green method which is cost effective and ecofriendly. Green nanoparticles have good physicochemical properties like high dispersion, high surface area and smaller size with wide therapeutic properties. The main objective of this work is to synthesize boswellic acid silver nanoparticles and to investigate itâ€™s in vitro anticancer potential. The boswellic acid was isolated the plant Boswellia serrata by column chromatography, later silver nanoparticles were synthesized and characterized further by UV-Vis spectral studies, FTIR, XRD, SEM and DLS studies. The synthesized nanoparticles were 21.5±0.5 nm measured by DLA studies without signs of agglomeration and were found to have hexagonal cubic structure based on SEM and XRD measurements. Furthermore the synthesized boswellic acid silver nanoparticles were screened for in vitro anticancer activity against human skin cancer cells line G361 using ADR (doxorubicin) as reference standard. The synthesized boswellic acid Nanoparticles exhibited anticancer activity nearer to the standard ADR. The future perspectives maybe oriented in finding in vivo pharmacological screening also assessing the pharmacodynamics and pharmacokinetic parameters.

Title: Effect of probiotics on Olanzapine induced metabolic syndrome in Wistar Albino rats.

Author Name: Syed Mushraf1, Veena Nayak2, Peralam Yegneswaran Prakash3

Affiliation 1. Ph.D scholar, Department of Pharmacology, Melaka Manipal Medical College (Manipal campus), MAHE, Manipal, India. 2. Department of Pharmacology, Kasturba
Abstract –

Background:
Olanzapine is the most efficacious second generation antipsychotic in treatment of schizophrenia, but is also the most notorious one to cause metabolic syndrome (MS).

Objective:
To evaluate the efficacy of probiotics in combating the adverse effects of olanzapine therapy like obesity, hyperlipidemia, hyperglycemia in olanzapine induced MS model in rats

Methods:
A total of 36 Wistar rats were randomly divided into six groups with 6 rats in each group were used. Groups were treated as follows - group I: distilled water: (1 ml/kg/day orally), group II: olanzapine: (2 mg/kg/day i.p.), group III: probiotic -VSL#3: (0.6 g/kg/day orally), group IV: VSL#3: (1.2 g/kg/day orally), group V: olanzapine: (2 mg/kg/day i.p. + VSL#3: 0.3 g/kg/day) orally, group VI: olanzapine: (2 mg/kg/day of i.p. + VSL#3: 1.2 g/kg/day). All groups were treated for four weeks. At the end of every week bodyweight, fasting blood glucose was checked and blood was collected and serum was analyzed for assay of triglyceride (TG), total cholesterol (T-CHO) and high-density lipoprotein cholesterol (HDL-C) estimation. Low-density lipoprotein cholesterol (LDL-C) and Very low-density lipoprotein cholesterol (VLDL-C) was calculated by using Friedewald’s equation: VLDL-C = TG/5, LDL-C = T-CHO – (HDL-C + VLDL-C). Data was analyzed by applying repeated measures ANOVA followed by post hoc Bonferroni test. P value <0.05 was considered statistically significant.

Results:
There was significant increase in T-CHO and TG level after olanzapine therapy (P<0.01 olanzapine vs control) and subsequently decrease T-CHO and TG in the probiotic treated groups (group III - VI: P < 0.05 probiotic vs olanzapine).

Conclusion:
Probiotics prevented the development of hyperlipidemia, and there was reduction in the weight gain and fasting blood glucose levels induced by olanzapine in the probiotic treated groups. Long term studies need to be conducted to further evaluate the effect of probiotics on MS.

Keywords: Olanzapine, probiotics, metabolic syndrome, VSL#3, schizophrenia

Sub-Code-1203
Ref No: dquUlMdJ

Title: Anticancer activity and trace elements analysis of Kadarpasi Chooranam : An in-vitro study.

Author Name: Sabari Anandh J.V

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Abstract:
Introduction: Seaweeds are Marine algae, consumed by humans due to its low lipids content, high concentrations in carbohydrates and proteins content with a high composition of minerals, polyunsaturated fatty acids, vitamins, secondary metabolites and various bio active compounds with biological activities is not explored.

Objective: To find out the anticancer activity and trace elemental analysis of kadarpasi chooranam.

Materials and Methods: Halimeda gracilis (Green marine alga) were collected from gulf of manner biosphere reserve coastal area and shade dried, made into chooranam. The prepared chooranam was screened for its trace elemental analysis and in-vitro anticancer activity. As per standard Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) protocol were followed to determine the presence of trace elements. The anticancer activity was evaluated on MCF-7 Human breast cancer cell lines by (3-(4, 5-dimethyl thiazole-2yl)-2,5-diphenyl Tetrazolium bromide) MTT assay.

Results: Kadarpasi Chooranam showed the presence of calcium, cobalt, copper, iron, manganese, magnesium, nitrogen, potassium, sodium, zinc and phosphorus, which can be used as health supplements. In-vitro anticancer activity revealed the anticancer activity from the dose of 20.58µg/ml.

Conclusion: In future in-vivo researches are performed in Kadarpasi chooranam to explore the potential effect in traditional medicine.

Keywords: Halimeda gracilis, Kadarpasi chooranam, Trace elements, Anticancer activity
antioxidant status was also restored by gum ghatti and effect was comparable to apocynin, as understood from the levels of Na+/K+ and Ca2+ Atpases, lipid peroxidation, super oxide dismutetase and catalase in kidney homogenates. From the immunohistochemical studies, it was revealed that gum ghatti can reduce the levels of gp-91, NOX-4 and p47 sub units of NADPH oxidase system. The current study provides scientific evidence for the use of gum ghatti against hyperoxaluria and oxidative stress involving NADPH oxidase system.

Sub-Code-1205
Ref No: EmDmdIoI
Title: Pharmacodynamic and pharmacokinetic interaction of Glycyrrhiza Glabra with methotrexate in experimental model of arthritis.
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Co-Author Name: Surender Singh
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Abstract:

Introduction:

Methotrexate (MTX) is the gold standard anti-arthritic drug, but chronic use is associated with adverse effects. Use of herbal drugs as adjuvants with conventional therapy could enhance the effectiveness and reduce the adverse effects. One such herb mentioned in Ayurveda is Glycyrrhiza glabra, used extensively for its anti-inflammatory properties.

Objectives:

To investigate (1) the effect of Glycyrrhiza glabra extract (GGE) on the pharmacokinetics (PK) of MTX and (2) to explore the effect of (GGE+MTX) on complete Freundâ€™s adjuvant (CFA) induced arthritis model.

Methods-(1) Wistar rats were allocated to group I-MTX (2mg/kg,i.p) and group II-GGE (400 mg/kg,p.o)+MTX (1mg/kg,i.p).Group II rats were pre-treated with GGE for 14 days, MTX was administered to both the groups on 14th day and blood was collected at 0.5,1,3,6,10 and 24 hours, plasma was separated and used for HPLC analysis.

(2) Wistar rats were divided into seven groups-normal control, arthritic control, MTX (2 mg/kg/week,i.p), GGE (100, 200 or 400 mg/kg/day,p.o) and GGE (400mg/kg/day,p.o)+MTX (1mg/kg/week,i.p).Arthritis was induced by injecting 0.1 mL CFA in the hind paw of rats. On 42nd day, blood was collected, serum was used for the estimation of inflammatory mediators (IL-1Î², IL-6, TNF-Î±, NFkB, MMP-1, MMP-3 and MMP-9). Oxidative stress was evaluated by measuring MDA, GSH, SOD and CAT. Rats were sacrificed and ankle joints were dissected for histopathology and immunohistochemical analysis of TNF-R1, IL-1Î²Y, IL-6 and NFkB.

Results:

Pre-treatment with GGE increased the AUC and Cmax of MTX about 2.5 and 1.8 times respectively when compared to MTX per se group. In CFA model, (GGE+MTX)
significantly decreased the inflammatory mediators, oxidative stress, prevented tissue damage and decreased the tissue expression of TNF-R1, IL-1Â­Î­, IL-6 and NFkB.

Conclusion: Use of Glycyrrhiza glabra with sub-therapeutic dose of methotrexate increased the plasma concentration of methotrexate and showed protective effects in arthritis model. Hence, this approach can be helpful in reducing the dose and adverse effects of methotrexate.

**Sub-Code-1206**

Ref No: jefqycJa

**Title:** Protective effect of Nrf2 against pulmonary fibrosis through targeting HMGB1-mediated epithelial-mesenchymal transition

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**Abstract:**

Aim: Pulmonary fibrosis (PF) is an interstitial lung disease characterized by the activation of accumulated myofibroblasts and deposition of extracellular matrix (ECM). Epithelial-mesenchymal transition (EMT) is considered to be one of the major hypotheses in the formation of PF. High mobility group box1 (HMGB1) plays an important biological role in infection, inflammation, and immune responses. Nuclear factor E2-related factor 2(Nrf2) is an important transcription factor for the regulation of oxidative stress. However, there are no direct evidences regarding the relationship between Nrf2 and HMGB1 in PF.

Methods: PF animal model was established by intratracheal injection of bleomycin. Histological morphology of the lungs were reflected by H&E staining and Masson staining. The expressions of Nrf2, HMGB1 and EMT associated markers were determined by Western blot or immunohistochemistry. In vitro, the effect of Nrf2, HMGB1 and the relationship between them in TGF-Î²1-induced EMT were determined by western blot and coupled using respective pharmacological activators or transfection with siRNA.

Results: EMT was aggravated and the expression of HMGB1 was significantly elevated in Nrf2-/- mice compared with WT mice exposed to BLM. Moreover, the uptake of exogenous Nrf2 or ablation of HMGB1 ameliorated TGF-Î²1-induced EMT in rat type II alveolar epithelial cell line (RLE-6TN) and human alveolar epithelial cell line(A549). In contrast, Nrf2 deficiency or HMGB1 activation aggravated TGF-Î²1-induced EMT. Furthermore, inhibition of HMGB1 diminished the protective effect of Nrf2 on EMT.

Conclusion: These findings suggest that the inhibitory effect of HMGB1 on EMT in PF is regulated by Nrf2 and provides a new strategy of clinical treatment for PF.

**Sub-Code-1207**

Ref No: bb5XWXKc

**Title:** Artocarpus tonkinensis, a traditional Vietnamese remedy, protects Mice Against Collagen-Induced Arthritis and Decreases Th17 Cell Function.

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Abstract:

Traditional Chinese medicine had a major influence on Vietnamese traditional medicine (VTM). VTM includes theories, beliefs, and practices of medicine derived from Vietnamese culture, which are also integrated with Western medicine concepts. VTM is based mainly on acupuncture; herbal, animal, and mineral medicines; moxibustion; psycho-physical practices (e.g., QiGong); Tai Chi; and massages. By example, chewing betel (or trau cau) derived from areca nuts, lime paste, and Artocarpus tonkinensis bark is among the VTM practices resulting from medical exchanges with China.

Artocarpus tonkinensis (A.Chev. ex Gagnep) is an ornamental tree from the Moraceae family that grows in northern Vietnam and is used in VTM by the Hmong ethnic minority to treat arthritis and backache. The medicinal use of its dried leaf decoction was discovered by Pham Chuk Lam and later studied for its immunosuppressive activity in arthritis, myasthenia gravis, and skin transplants. Different active compounds have been isolated from A. tonkinensis leaves, such as the anti-arthritic n-butanol extract containing the immunosuppressive auronol glycosides maesopsin 4-O-glucoside (TAT-2) and alphetonin-4-O-glucoside. Intraperitoneal injection of its ethyl acetate extract decreased both arthritis incidence and severity and delayed disease onset in rats with collagen-induced arthritis (CIA). The extract also inhibited mitogen-induced T cell proliferation and stimulated apoptosis of activated lymph node-derived lymphocytes.

In addition, four individual active components isolated from A. tonkinensis have anti-inflammatory effects that correlate with its inhibition of mitogen-induced T cell proliferation. These extracts inhibited production of inflammatory cytokines, such as tumor necrosis factor-Î² and interferon-Î¼, in mitogen-stimulated T cells. Suppression of T cell proliferation and cytokine production by A. tonkinensis flavonoids may reduce disease severity after experimentally induced arthritis. In anti-cancer trials, TAT-2 showed antiproliferative effects on acute myeloid leukemia cells and modulated expression of 19 cancer-related genes encoding proteins such as heme oxygenase -1, sulfiredoxin 1 homolog, and breast carcinoma amplified sequence 3, and exhibited in vivo anti-cancer effects.

Our study evaluated the decoctionâ€™s efficacy and mechanism of action in DBA/1J mice with CIA. Mice treated with the decoction (At) either from the first collagen immunization or after CIA development experienced signifi cantly less joint edema and inflammatory inâ€”itâ€”lation, whereas CIA-induced cartilage damage could only be prevented by early At treatment. Autoimmune gene expression proâ€” les showed that Th17 cell-associated chemokine CCL20 and cytokines IL-6, IL-17, and IL-22 were strongly downregulated by At. Reduced expression of IL-2, IL-17, IL-22, and FasL in lymph node cells from At-treated mice was further confirmed by real-time PCR. The decoction also inhibited polarization of Th17 cells from CD4+ splenic T cells according to levels of IL-17 and RORC, a Th17 cell-specifi c transcription factor. Chromatographic analysis identified Atâ€™s major component as maesopsin-Î³D-glucoside, which could inhibit in vitro differentiation of Th17 cells. The decoction signifi cantly alleviated the signs and symptoms of CIA and inhibited the development and function of Th17 cells, highlighting its potent anti-inflammatory activity.

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Artocarpus tonkinensis (A. Chev. ex Gagnep.) is a tree from the Moraceae family growing in northern Vietnam and is used in VTM by the Hmong ethnic minority to treat arthritis and backache. The medicinal use of its dried leaf decoction was discovered by Pham Chuk Lam and later studied for its immunosuppressive activity in arthritis, myasthenia gravis, and skin transplants.

Our study evaluated the decoction’s efficacy and mechanism of action in DBA/1J mice with collagen-induced arthritis (CIA). Mice treated with the decoction (At) either from the first collagen immunization or after CIA development experienced significantly less joint edema and inflammatory infiltration, whereas CIA-induced cartilage damage could only be prevented by early At treatment. Autoimmune gene expression profiles showed that Th17 cell-associated chemokine CCL20 and cytokines IL-6, IL-17, and IL-22 were strongly downregulated by At. Reduced expression of IL-2, IL-17, IL-22, and FasL in lymph node cells from At-treated mice was further confirmed by real-time PCR. The decoction also inhibited polarization of Th17 cells from CD4+ splenic T cells according to levels of IL-17 and RORC, a Th17 cell-specific transcription factor. Chromatographic analysis identified At’s major component as maesopsin-βD-glucoside, which could inhibit in vitro differentiation of Th17 cells. The decoction significantly alleviated the signs and symptoms of CIA and inhibited the development and function of Th17 cells, highlighting its potent anti-inflammatory activity.

Sub-Code-1208

Ref No: Z6YOCRSZ

Title: Î±-Mangostin mitigates age-associated metabolic disorders targeting adipose tissue inflammation.

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Abstract:

Obesity and its related metabolic disorders are highly prevalent in the elderly individuals. Low-grade chronic adipose tissue inflammation contributes to the onset and development of age-related insulin resistance and type 2 diabetes. There’s still lack of effective therapy for treatment of age-related metabolic disorders. The present study identified that Î±-mangostin (Î±-Man), a xanthone from Garcinia mangostana, remodels adipose tissue inflammation to mitigate age-related metabolic disorders. Î±-Man protected the mice against lipopolysaccharides (LPS)-induced acute adipose tissue inflammation, by reducing the expression of pro-inflammatory cytokines and chemokines and inhibiting the migration of macrophages into the adipose tissue and the pro-inflammatory polarization of macrophages. In a cohort of young (3-month) and old (18â€’20 month) mice, Î±-Man mitigated age-associated adiposity, hyperlipidemia, and insulin resistance. Î±-Man alleviated age-related adipose tissue inflammation by reducing macrophage infiltration and pro-inflammatory polarization in visceral adipose tissue. Moreover, Î±-Man protected the old mice against liver injury through suppressing the secretion of microRNA-155-5p from macrophages. The above results...
demonstrate that 1±-Man, targeting adipose tissue inflammation, might represent a novel candidate to treat aging-related metabolic disorders and extend health-span.

Acknowledgements

Financial support by Science and Technology Development Fund, Macao S.A.R (FDCT 102/2017/A), the Research Fund of University of Macau (MYRG2017-00109-ICMS and MYRG2018-00037-ICMS), and the State Key Laboratory of Drug Research (SIMM1803KF-16) are gratefully acknowledged.

Sub-Code-1209

Ref No: YBpeIhXH

Title: Anthocyanin-rich Blackcurrant intake improves ageing-related increased systolic blood pressure, vascular oxidative stress and endothelial dysfunction in rats: Role of Sglt 1 and 2-mediated vascular uptake of anthocyanins

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Abstract:

Ageing-related endothelial dysfunction and vascular oxidative stress affect initially arterial sites at risk. Anthocyanin-rich natural products improved endothelial function subsequent to their uptake via sodium-glucose co-transporter 1 (SGLT1). Since oxidative stress promotes endothelial SGLT1 and SGLT2 expression, the possibility that anthocyanin-rich blackcurrant (ARBC) improves ageing-related endothelial dysfunction, and the role of SGLT1 and SGLT2 were assessed.

Male Wistar rats (22-month old) received ARBC (60 and 120 mg/kg/day) in drinking water for 2 weeks. Young rats (12-week) were also studied. Systolic blood pressure (SBP) was assessed by tail-cuff sphygmomanometry, protein expression by immunofluorescence, oxidative stress with dihydroethidium, and anthocyanin uptake with Neu reagent and confocal microscopy.

Ageing-related increased SBP was reduced by the ARBC treatment. In mesenteric artery rings of old rats, the endothelium-dependent hyperpolarization (EDH)-mediated relaxation was abolished whereas the contractile response to phenylephrine was increased, both were improved by the ARBC120 treatment. SGLT1 immunofluorescence observed predominantly in the endothelium, was higher in old than young rats, and more pronounced in the aortic arch than thoracic aorta whereas SGLT2 immunofluorescence was very low. Ageing-related oxidative stress in the aorta was inhibited by the ARBC120 treatment, and ex vivo by LX4211 (dual SGLT1/2 inhibitor) and empagliflozin (selective SGLT2 inhibitor). ARBC treatment induced a dose-dependent accumulation of anthocyanins in the aorta and aortic arch. An ARBC purified extract promoted ex vivo anthocyanins uptake predominantly in the endothelium, which was more pronounced in the aortic arch than aorta, and in old than young rats, and inhibited to a greater extent in the aorta by LX4211 than empagliflozin in both young and old rats.
The ageing-related upregulation of SGLT1, and the SGLT1 and SGLT2 -mediated uptake of anthocyanins predominantly in the endothelium at sites at risk suggest that anthocyanins appear as interesting natural products to protect the endothelial and vascular function with increasing age.

**Sub-Code-1210**

**Ref No: TM0mTlJW**

**Title:** Application of Novel Tandem Mass Spectrometric Method for Quantifying Free and Bound Thymoquinone After Oral Administration of Plant Extracts and Formulations to Rats.

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**Abstract:**

The accurate quantification of free-form of Thymoquinone (TQ) in biological samples poses as a challenge that is addressed here. Using pre-column derivatization approach, an adduct of TQ with glutathione (GSH) was prepared and quantified by novel Tandem Mass Spectrometric Method in phytochemical extracts, pharmaceutical formulations and biological samples. Pre-column derivatization of TQ with GSH coupled with its detection through LC-ESI-MRM method was found to be highly sensitive, specific, reproducible and accurate for precise estimation of TQ when compared to APCI and reported HPLC methods. In plasma ultrafiltrate, the LOD and LLOQ, mean intra-day and inter-day accuracy (%) and precision (%CV) of the developed method were estimated to be within limits. The present method is sensitive and accurate advancement for quantification of nanogram concentration of TQ. For the first time, the unbound plasma levels of TQ have been estimated using ultra-filtration technique to bring forth its true pharmacokinetic parameters in plasma of rats.

**Sub-Code-1211**

**Ref No: bN5x4W5Y**

**Title:** Withaferin A triggers G2/M arrest and intrinsic apoptosis in glioblastoma cells via ATF4-ATF3-CHOP axis

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**Abstract:**

Withaferin A (WA) is a bioactive compound with a remarkable anticancer effect derived from Withania somnifera, commonly known as ashwagandha. However, the anti-cancer mechanisms of WA in glioblastoma multiforme (GBM) are still unclear. Cell viability assays and xenografted nude mice were used to evaluate the effects of WA along with flow cytometry to detect apoptosis.
and cell cycle of GBM. RNA-seq analysis, Western blotting, immunofluorescence staining, qRT-PCR and siRNA gene silencing were carried out to determine the signaling pathways affected by WA. Our results showed that WA significantly inhibited the growth of GBM in vitro and in vivo and triggered the intrinsic apoptosis of GBM cells by upregulating expression of Bim and Bad. WA arrested GBM cells at the G2/M phase of the cell cycle through dephosphorylating Thr161 of CDK1 by activating p53-independent p21 up-regulation. Knockdown of p21 restored cell cycle progression and cell viability by down-regulating the expression of Bad rather than Bim. We demonstrated that endoplasmic reticulum (ER) stress induced by WA through the ATF4-ATF3-CHOP axis, initiated apoptosis and G2/M arrest in GBM cells. We revealed a novel pathway that elucidated WA activation of apoptosis and G2/M arrest in GBM cells through the ATF4-ATF3-CHOP axis. This discovery is important for optimization of WA-based regimens for prevention and/or treatment of GBM.

Sub-Code-1212

Ref No: rHOofgAe

Title: Tyrosine phosphatase SHP2 mediates mitochondrial homeostasis for the resolution of NLRP3 inflammasome activation and its promotion by natural products

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Abstract:

Aberrant activation of NLRP3 inflammasome is a key molecular event in the pathogenesis of various inflammatory diseases. Although the activation mechanism of NLRP3 inflammasome was relatively clear, there remains unknown for its resolution process. Here we demonstrate that NLRP3 inflammasome stimulators activate Src homology-2 domain containing protein tyrosine phosphatase-2 (SHP2), which translocates to mitochondria and dephosphorylates adenine nucleotide translocase 1 (ANT1), the key molecule controlling mitochondrial permeability transition. Such mechanism prevents collapse of mitochondrial membrane potential and the subsequent release of mitochondrial DNA and reactive oxygen species (ROS), thus preventing hyper-activation of NLRP3 inflammasome. Ablation or inhibition of SHP2 in macrophage caused unresolved activation of NLRP3 inflammasome, excessive production of proinflammatory cytokines IL-1β/IL-18, and increased sensitivity to peritonitis and experimental autoimmune encephalomyelitis. By establishing an SHP2-specific phosphatase activity assay, we screened out several compounds that can stimulate phosphatase activity of SHP2. These SHP2 agonists were proved to be effective for the restoration of mitochondrial homeostasis and inflammation inhibition. Collectively, our data here highlighted a SHP2-mediated endogenous mechanism for NLRP3 inflammasome resolution, which could be served as a potential target for the treatment of inflammatory diseases.

Sub-Code-1213

Ref No: MLQvTPWJ

Title: The metabolomics research of Huangqi Jianzhong Tang (HQJZ) for the treatment of chronic atrophic gastritis.
Huangqi Jianzhong Tang (HQJZ) is a classical traditional prescription for the treatment of chronic atrophic gastritis (CAG) in China. However, the material basis for its efficacy is still unclear. Here, we constructed a novel strategy to illustrate the pharmaco basis of HQJZ in the treatment of CAG coupled with metabolomics and serum pharmacochemistry. Four sets of plasma metabolic profile including control group, HQJZ intervention control group, model group and HQJZ intervention model group were used to detect by Ultra-high performance liquid chromatography coupled with hybrid quadrupole -Exactive mass spectrometry (UHPLC-Q-Exactive-MS). Eight endogenous metabolites were screened as the pharmaco markers of HQJZ in treating CAG, which were significantly ameliorated in model group but no significant change in control group. A total of 11 prototypes and 13 related metabolites were screening and identification through orthogonal partial least-squares-discriminate analysis (OPLS-DA) of model group and HQJZ intervention model group. HQJZ underwent a variety of metabolic reactions including oxidation, reduction, dehydration and methylation reaction in CAG rats. Further pearson correlative analysis was applied to discover the effective compounds for HQJZ, which were significantly correlated with those pharmaco metabolites. At last, 12 prototypical compounds excepting isoliquiritigenin and 7 metabolites related to formononetin, albiflorin, gallic acid, isoliquiritin/liquiritin, liquiritigenin, paenoniflorin and astragaloside IV were considered as potential pharmaco basis of HQJZ, which could hit more metabolite targets. The results revealed the links between serum exogenous and endogenous metabolites involved into the protection of HQJZ, which was is a powerful tool to obtain the material basis of TCM formula.

Sub-Code-1214

Ref No: TPGfN1HX

Title: Impact of Āšodhana, a detoxification process of traditional medicine system ayurveda, on toxicity of Plumbago Zeylanica Root.

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Abstract:

Plumbago zeylanica root is traditionally used for the mitigation of many diseases but it exhibits toxic effect if not processed as per classical procedure. As per Ayurvedic texts, the roots are subjected for Āšodhana process before their use. Hence, the present study evaluated the effect of Āšodhana process on toxicity of P. zeylanica roots. Āšodhana of the dried roots of P. zeylanica was done as per the procedure mentioned in Ayurvedic text to get Āśuddhā (purified) roots. Acute toxicity study of ashodhit and Āśuddhā roots was performed in zebrafish (Danio rerio) embryos and rats. Zebrafish embryos were exposed to different...
concentrations and LC50 values were determined while the rats were administered with root powder at 2 g/kg (limit test) and body weight, clinical signs, and mortality were observed for 14 days. In fish embryo acute toxicity study, the results revealed that the LC50 of ÅšuddhÄ root extract (637.20 Åµg/ml) was significantly (P<0.01) higher than ashodhit (325.36 Åµg/ml) root associated with some development toxicities. The no observed adverse effect levels (NOAEL) of ashodhit and Åuddha root solution were 50 and 400 Åµg/ml, respectively. In single dose oral toxicity study in rats, no mortality or moribund stage was observed but the cage side observation showed the appearance of black stools in some of the animals of ashodhit root treated rats without affecting other clinical signs throughout the study period. The administration of ÅuddhÄ root caused significant (P<0.01) gain in body weight while there was no significant increase in body weight of ashodhit root treated rats compared to their initial body weight. The study validates the traditional Åodhana process in reduction of toxicity of P. zeylanica roots. Further repeated dose toxicity studies of ÅuddhÄ roots needs to be evaluated before its therapeutic application.

Sub-Code-1215

Ref No: 3oZeh3P0

Title: Neuroprotective effect of Lactobacillus rich probioitc in gut dysbiosis associated cognitive decline in mice.

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Abstract:

Gut communicates with brain via Gut-Brain-Axis while imbalance in gut microbiota (dysbiosis) may lead to cognition decline. Dysbiosis is a common adverse effect for most antibiotics. Probiotics rich in Lactobacillus and Bifidobacterium when ingested in adequate amounts can enrich gut flora. Lactobacillus is a beneficial bacteria ubiquitous in various fermented food products. The study will help us determine the neuroprotective effect of Lactobacillus rich probiotic against gut dysbiosis associated cognitive decline.

Gut dysbiosis was induced in Swiss albino mice by administering ampicillin for 2 weeks. In the treatment group Lactobacillus rich probiotic was administered for 3 weeks in conjunction with antibiotic (2 weeks). Real time polymerase chain reactions (qPCR) of fecal samples were conducted to measure Lactobacillus levels. Behavioral studies including elevated plus maze, passive avoidance test, Morris water maze (MWM) and Novel object recognition were performed to analyze cognition changes. Reduced glutathione (GSH) and Acetylcholine esterase (AchE) levels were measured in cortico-hippocampal lysates and histopathology of hippocampal slices were conducted.

qPCR results indicated a significant decrease in Lactobacillus after antibiotic administration and a remarkable increase in probiotic treated animals. Probiotic treatment led to significant increase (p<0.001) in transfer latency and decrease (p<0.001) in step down latency over antibiotic group. Similarly time spent in the target quadrant in MWM and preference for novel object was significantly higher for probiotic administered antibiotic treated animals compared to sole antibiotic group. Biochemical studies showed increase in AchE and decrease in GSH after
antibiotic treatment which was partially reversed by the probiotic. Antibiotic treatment also decreased hippocampal neuronal density which was partially reversed by probiotic.

Neurobehavioural, biochemical and histopathological studies showed the neuroprotective effect of the lactobacillus rich probiotic in gut dysbiosis associated cognitive decline in mice.

Keywords: Gut Dysbiosis, Probiotic, Lactobacillus, Cognition.

Sub-Code-1216

Ref No: Anxqc1M6

Title: Amelioration of experimental models of arthritis by selected homeopathic drug in attenuation of inflammation and joint dysfunction.

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Abstract:

Background: Rheumatoid Arthritis (RA) is an autoimmune disorder inducing inflammation, which affect various populations. To cure RA, non-steroidal anti-inflammatory drugs (NSAIDs), disease-modifying anti-rheumatic drugs (DMARDs), steroidal agents and immunosuppressants are generally used. However, due to their adverse effects and toxicity an alternative, non-toxic and more effective approach is taken into account which comprises the use of drugs which are composed of natural products.

The Homeopathic drug i.e Ferrum Phos have shown promising results in various infirmities. This study shows the effects of oral administration of Ferrum Phos and their mechanism in Complete Freund™s adjuvant (CFA)-induced arthritis model in rats. So, in this present study, our rationale is to assess the effect of Homeopathic drugs viz a viz Ferrum Phos 3X, Ferrum Phos 6X in attenuation of inflammation and joint dysfunction in investigational animal models of RA.

Materials and methods: The present study investigated the effect of the homeopathic drug:- Ferrum Phos 3X, Ferrum Phos 6X, in CFA induced adjuvant model in Wistar rats for a duration of 21 days. The effect of drugs on the joint dysfunction was assessed by quantifying the ankle joint diameter, arthritic index and by radiographic analysis. Acute inflammation of Homeopathic drugs was assessed by using carrageenan induced paw edema model. Immunohistochemical analysis of TNF-R1 was also carried out to evaluate the effect of Homeopathic drugs on pro-inflammatory cytokine/receptor.

Result: Ferrum Phos 6X significantly (p<0.001) reduced the inflammation in paw edema at 5 hours post carrageenan administration. Thus demonstrating activity against cyclooxygenase derived autacoid mediators of inflammation. Ferrum Phos 6X bring about a significant depletion (p<0.001) in inflammation on each day of observation as compared to CFA-control group.

Conclusion: From the above findings, we draw the inference that Ferrum Phos 6X improves the symptoms and bone damage in rheumatoid arthritis.
Title: Protective role of ultra-diluted preparations in attenuation of inflammation and joint dysfunction in experimental model of Rheumatoid Arthritis.

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Abstract:

Background: Rheumatoid arthritis (RA) is a systemic chronic disease which causes inflammation. It manifests as progressive disability, other systemic complications and can cause death. The disease has progressive nature, which causes inflammation in joints, synovial proliferation, and can cause destruction of articular cartilage.

Objective: The present study was designed to assess the effect of homoeopathic drugs; Calcarea Phos 3X and Magnesium Phos 6X in experimental models of RA.

Method: Calcarea Phos 3X and Magnesium Phos 6X were investigated in CFA induced adjuvant model in Wistar rats for a duration of 21 days. Animals were divided into five groups (n=6). Group I received normal control (1% normal saline), group II received carrageenan (1% solution of carrageenan dissolved in normal saline), group III received standard drug indomethacin (3mg/kg) and groups IV-V received homoeopathic drugs Calcarea Phos 3X and Magnesium Phos 6X (20ul/kg) respectively. The effect of drugs on the joint dysfunction was assessed by quantifying the ankle joint diameter, arthritic index and by radiographic analysis. Acute inflammation of homoeopathic drugs was assessed by using the carrageenan-induced paw edema model. Arthritis was induced by complete Freundâ€™s adjuvant (CFA). Immunohistochemical analysis of TNF-R1 was also carried out to evaluate the effect of Homoeopathic drugs on pro-inflammatory cytokine/receptor.

Result: Calcarea Phos 3X and Magnesium Phos 6X significantly (p<0.001) reduced the inflammation in paw edema at 5 hours post carrageenan administration. Thus demonstrating activity against cyclooxygenase derived autacoid mediators of inflammation. Both the drugs bring about a significant depletion (p<0.001) in inflammation on each day of observation as compared to CFA-control group. So, it also demonstrates significant improvement in joint dysfunction in CFA-induced arthritis model.

Conclusion: The study inferred that Calcarea Phos 3X and Magnesium Phos 6X improves the symptoms and bone damage in rheumatoid arthritis.

Keywords: Calcarea Phos; Magnesium Phos; Histopathology; Inflammation; Immunohistochemistry; Radiography.
Title: Effect of cardamom oil in amyloid beta induced alzheimer's disease in wistar rats
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Abstract:
Cardamom oil is obtained from fruits of Elettaria cardamomum belonging to family Zingiberaceae. It has been used in traditional system of medicine for management of various disorders such as convulsion, anxiety and insomnia. The oil possesses anticholinesterase, anti-anxiety and antioxidant activities. Acetylcholinesterase inhibitors serve as one of the important therapeutic approach to control progression of Alzheimerâ€™s disease. Hence the effect of cardamom oil was studied in amyloid beta induced Alzheimer's disease in rats. Alzheimerâ€™s disease in Wistar rats was induced by intracerebroventricular injection of amyloid beta (4 ÂµM/rat), 20 days prior to treatment. Treatment with cardamom oil at dose of 100 and 200 mg/kg was given by oral route for 21 days. In behavioural assessment, elevated plus maze, Morris water maze, locomotor activity and passive avoidance test were performed on day 21 and 42. At the end of study, oxidative stress parameters like (malonaldehyde, reduced glutathione, catalase and superoxide dismutase), acetylcholinesterase activity were determined in different brain regions. Histopathological studies with hematoxylin & eosin, congo red dye and immunohistochemistry studies for expression of amyloid beta and brain-derived neurotrophic factor were performed in cortex and hippocampus.

Treatment with cardamom oil significantly improved behavioural parameters in amyloid beta injected rats. Cardamom oil treatment showed significant inhibition of acetylcholinesterase activity and significant decrease in malonaldehyde level. The level of catalase, superoxide dismutase and glutathione were significantly increased with cardamom oil treatment at dose 200 mg/kg. Histopathology studies in cortex and hippocampus showed reduction in neuronal damage. Immunohistochemistry study indicated decreased in amyloid beta and increased in brain-derived neurotrophic factor expression in the brain. From results, it can be concluded that, cardamom oil attenuated amyloid beta induced Alzheimerâ€™s disease via reduction in oxidative damage and inhibition of acetylcholinesterase in the brain.
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Abstract:

Introduction: Cucurbita moschata (Pumpkin) belongs to family Cucurbitaceae, it is found mainly in India. Usually, pumpkin fruits are used for the preparation of sweets and curries.

Objectives: The present research work was carried out to explore the anti-urolithiatic potential of the methanolic fraction of Cucurbita moschata roots (MFCMR).

Materials & Methods: The MFCMR was obtained by cold maceration. The MFCMR was evaluated for its phytoconstituents by conventional methods. The acute toxicity test as per OECD guideline 423 and anti-urolithiatic activity in-vitro as well as in â€‘vivo of MFCMR was performed against ethylene glycol (0.75%) induced renal calculi model. The antioxidant and renal parameters were evaluated, histology study of the kidney was carried out and finally, ultrasound sonography was performed.

Results & Discussion: The presence of quercetin a bioflavonoid in MFCMR was confirmed by HPLC analysis. The MFCMR was found to be safe as no mortality was observed on its oral administration at 2000 mg/kg dose. The MFCMR was administered orally for 21 days along with the ethylene glycol (0.75%) in drinking water. In this study, it has been observed that in MFCMR treated groups the kidney weight, blood urea nitrogen, uric acid, serum creatinine, serum calcium levels of the control group were decreased significantly as compared to the disease control group groups. These results were confirmed with histology study and ultrasound sonography. The MFCMR treatment has increased the urine output and reduced the formation of renal calculi significantly.

Conclusion: The MFCMR is having significant anti-urolithiatic potential. This effect is might be due to the presence of quercetin and saponins. The exact mechanism of action is required to be established by further study.

Sub-code-1220

Ref No: bJJg8rUr

Title: Evaluation of the effect of Ayurvedic Formulation Myostaal Forte Tablets on chondroprotective biomarkers in an experimental model of osteoarthritis in rats.

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Abstract:

Background: There is no medical cure for Osteoarthritis (OA) & search for new molecules is going on. Myostaal Forte (MF) tablet is polyherbal formulation being tried for OA.
Materials & Methods: Study was planned to reconfirm the protective effect of MF in osteoarthritic rats by histopathology and levels of Cartilage oligomeric matrix protein (COMP) and matrix metalloproteinase-13 (MMP-13) by ELISA.

After obtaining permission from IAEC, four groups (n=8 each group): sham control(SC), disease control(DC), positive control(PC) and a MF group. Behavioral tests were compared from baseline-7th day, 14th day, 21st day and on 28th day. Histopathology and bone markers were done on the 28th day. p<0.05 was considered as statistically significant. Analysis of Variance (ANOVA) with post hoc Tukey’s test was used for parametric data & Non-parametric by Kruskal Wallis test with post hoc Dunn’s test.

Results: Locomotor Activity (Number of squares crossed was significantly higher in MF group when compared DC & decrease in the immobility time in MF group when compared DC). Rota rod Test shows number of falls was significantly lower in MF group when compared to DC. Hot Plate Analgesiometer shows no significant difference in the MF group compared to DC. In Histopathology grading, the scores in MF group were significantly reduced compared to DC. MMP-13 levels and COMP levels in MF group were significantly decreased as compared to the DC and were statistically significant (p<0.05)

Conclusion: Myostaal Forte has shown antiarthritic effect by virtue of its chondroprotective action.

Sub-Code-1221

Ref No: QHu7HU5Z

Title: Novel anti-epileptic mechanism of 7 hydroxyfruallonolide enriched fraction from Spaherenthus indicus

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Abstract:

Increasing evidence points to inflammation as a potentially important mechanism in epileptogenesis. Currently available anti-epileptic drugs only corrects the symptoms by affecting the neurotransmitter levels but doesn’t affect inflammation which is one of the underlying cause.

Ayurveda has reported Sphaerenthus indicus to be useful in the treatment of epilepsy. Its active constituent, 7 hydroxyfrullanolide (7-HF), possesses NF-κB inhibitory potential. Thus, 7HF could be a likely molecule exerting anti-epileptic effect by treating the underlying inflammation.

7HF fraction enriched (84.37%w/v, by HPLC) was prepared from the flowering tops of S. indicus by flash chromatography. It was evaluated for anti-epileptic effect in PTZ induced kindling in mice. The seizures were rated according to Racine’s scale. On the last day of the treatment schedule, animals were evaluated for behavioural parameter like locomotion and
anxiety. Animals were then sacrificed, their brains isolated and evaluated for IL-6 levels and histopathological changes.

Administration of PTZ on alternate days for 13 days resulted in development of generalized tonic clonic seizure with a seizure score of 5. 7-HF enriched fraction dose dependently reduced epileptic score and also further doses of PTZ couldn’t induce score of 5 in any of the treated animals. Administration of PTZ was associated with induction of anxiety, however 7-HF enriched fraction did not alter this behaviour. There was no significant change in the locomotion in treated animals, indicating absence of any stimulant or depressant effect on the CNS. Treatment with 7-HF enriched fraction dose dependently lowered the raised IL-6 levels, indicating anti-inflammatory effect. PTZ treatment resulted into degenerative lesions and gliosis in the hippocampus. Treatment with 7HF (75 mg/kg, p.o.) mitigated these lesions incurred, however the lower doses partially reduce the adverse lesions in brain.

7HF could be a promising candidate to cure epilepsy as it targets inflammation, one of the underlying causes of epileptogenesis.

Sub-Code-1222

Ref No: FLPc45k0

Title: Dipeptidyl peptidase IV Inhibitory activity of Commiphora mukul monotherapy and combination therapy (with Metformin) attributes to its cardioprotective effects in experimental diabetes: In silico, in vitro and in vivo analyses

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Abstract:

Background: The marketed synthetic Dipeptidyl peptidase-IV inhibitors are expensive drugs and have been reported to cause unacceptable adverse effects. In this scenario research to develop novel DPP-IV inhibitors from alternative sources is the need of the hour. Commiphora mukul, a medicinal plant with antidiabetic and cardioprotective activities may represent a natural DPP-IV inhibitor, the DPP-IV inhibitory activity of which may translate into demonstrable therapeutic benefits in setting of diabetes with cardiovascular co-morbiditie

Methods: The DPP-IV inhibitory, antidiabetic and cardioprotective effects of Commiphora mukul monotherapy and combination therapy (with Metformin) was evaluated in the experimental model of myocardial infarction co-existing with diabetes. To determine the active principle of Commiphora mukul responsible for DPP-IV inhibitory activity, the crystal structure of DPP-IV was considered as receptor which was docked against Gluggusterone E, Gluggusterone Z, Sitagliptin and Vildagliptin.
Results: Commiphora mukul monotherapy as well as in combination therapy (with Metformin) demonstrated significant DPP-IV inhibitory, antidiabetic and cardioprotective effects in the experimental model of myocardial infarction co-existing with diabetes. Cardioprotective effects of Commiphora mukul treatment may be attributed to several mechanisms (DPP-IV inhibition, hypolipidemic, reduced atherogenic potential, anti-thrombotic state, anti-inflammatory, antioxidant and anti-apoptotic activities. The Commiphora mukul possesses significant DPP-IV inhibitory activity as delineated, using in silico docking.

Conclusion: The present study will provide preliminary experimental evidence on the potential therapeutic benefits of using natural DPP-IV inhibitors in the setting of diabetes co-existing with cardiovascular diseases.

Sub-Code-1223

Ref No: fSkjhsw6

Title: Efficacy of a Botanical Blend Supplement (LI12542F6) on Muscle Strength and Endurance during Resistance Training: A Randomized, Double Blind, Placebo Controlled Study.

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Abstract:

Background: A blended mixture of Sphaeranthus indicus and mango stem bark extracts (LI12542F6) which had shown to improve muscle strength and endurance was subjected to efficacy and safety studies in pre-clinical animals and 40 resistance-trained healthy male subjects. The present study was designed as a randomized, placebo controlled clinical study in untrained healthy subjects.

Methodology: It was a randomized, double blinded, placebo-controlled parallel study to assess the efficacy of the same botanical blend (LI12542F6) on muscle strength and endurance over a 8-week resistance training program in 120 untrained healthy male subjects. The selection of the subjects was based on inclusion and exclusion criteria and test product was dispensed. There were 4 groups with 30 subjects in each group and they received doses of the standard botanical blend (BB) with varying resistance training (RT) as follows:

Group A (425mg/d BB with 1 set RT), Group B (850mg/d BB with 1 set RT)
Group C (placebo with 1 set RT), Group D (placebo with 2 sets RT)

Changes in 1-RM bench press and 1-RM leg extension were recorded for muscle strength. For muscle endurance, changes in bench press repetitions at 80% of 1-RM baseline and changes in leg extension repetitions at 80% of 1-RM baseline were determined. The outcome assessment of muscle strength (1-RM bench press and 1-RM leg extension) was determined by the maximum amount of weight that an individual can lift one time for each lift. For muscle
endurance, the number of repetitions that a subject can complete with a resistance of 80% of their baseline 1-RM bench press and leg extension is determined.

Results: Will be presented in the conference.

Conclusion: Will be presented at the conference.

Keywords: botanical blend, muscle strength, endurance.

**Sub-Code-1224**

Ref No: 1k5oEBVh

**Title: Proinflammatory cytokines inhibition effect of Halodule pinifolia**

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**Abstract:**

Halodule pinifolia (Family: Cymodoceaceae) has gained attention for its antioxidant and antibacterial properties. It is a common seagrass found from Bay of Bengal to Coromandel Coast of India. H. pinifolia was tested for its inhibition potential against the major pro-inflammatory cytokines TNF-Î±, IL-1 and IL-6 in RAW 264.7 cells using ELISA kits. The extract (EHP) obtained by cold extraction using ethyl acetate was tested at different concentrations. The significant effect of EHP against the lipo-polysaccharide (LPS)-induced secretion of TNF-Î±, IL-6 and IL -Î¼1 at various concentrations revealed its potential proinflammatory cytokines inhibition property. EHP exhibited 69% and 75.87 % inhibition of LPS-induced TNF-Î± at 250 and 500 Î¼g/mL, respectively. The inhibition of IL-6 and IL-Î¼1 by 70.19% and 104.93%, respectively at 500 Î¼g/mL revealed the marked anti-inflammatory property of EHP. Hence, EHP can be explored as an alternate medicine for inflammatory disorders.

**Sub-code-1225**

Ref No: kC6CagqG

**Title: Gandou Decoction decreased copper levels and alleviated hepatic injury in a rat model of copper-laden hepatotonic degeneration**

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Abstract:

Hepatolenticular degeneration (HLD) is an autosomal recessive genetic disorder characterized by impaired copper transport and excretion due to the mutation of the ATP7B gene. Current treatment regimens rely on the use of a wide range of specific metal chelators as "decoppering" agents; unfortunately, there are multiple adverse effects that limit their effectiveness. Gandou Decoction (GDD), a classical Traditional Chinese medicine (TCM), has been clinically applied to treat hepatocellular degeneration in China for decades, with remarkable curative effects. However, the mechanism of the therapeutic effect of GDD still remain elusive. The purpose of this study was to investigate the therapeutic effects of GDD on a rat model of copper-laden hepatolenticular degeneration and explore its potential mechanism. In this study, fingerprint analysis using 30 characteristic fingerprint peaks to evaluate the similarity between 10 samples and showed the similarity was > 0.98, indicating good correlation among the common peaks. Meanwhile, simultaneous quantification of 7 markers in GDD was then performed to determine consistency of quality. Additionally, we found that treatment of the copper-laden rats with GDD lowered the levels of copper in the liver and blood through removing excess copper by excretion in the urine and feces. Meanwhile, serum hepatic enzyme markers AST, ALT and AKP activities and liver histological evaluation both showed the protection of GDD against liver injury induced by excessive copper. Furthermore, the hepatoprotective effect of GDD was also evidenced by the results of hepatic SOD and T-AOC activities and liver amounts of GSH. Our study provides experimental evidence of the therapeutic mechanism of GDD in HLD. These results suggested that the mechanism of GDD may be associated with the reduction of the copper levels in liver and blood, depletion of excess copper by excretion in the urine and feces and inhibition of oxidative stress.

Sub-Code-1226

Ref No: H2deTCrV

Title: Ethanolic extract of Moringa oleifera leaves alleviate cyclophosphamide-induced testicular toxicity by improving endocrine functions

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Abstract:

Prevention of testicular toxicity during chemotherapy using natural compounds is gaining importance in the field of reproductive medicine and cancer biology due to their low toxicity. Our previous studies have shown that ethanolic extract of Moringa oleifera leaves (MOE) mitigates cyclophosphamidte (CP)-induced testicular toxicity and improves sperm function. The present study is aimed at understanding whether the chemoprotective action of MOE is mediated through improving the endocrine functions of the testis. Adult mice were injected with MOE (100 mg/kg body weight, 5 days a week for 4 weeks) and CP (100 mg/kg body weight, once a week for 3 weeks) alone or in combination. At 35 days post CP injection, testosterone, follicle stimulating hormone (FSH) and inhibin B levels were assessed in blood and testis. Further, expressions of genes pertaining to specific cell types in testis were analyzed.
by quantitative reverse transcriptase PCR (qRT-PCR). A non-significant decrease in testosterone (testis and serum) and unaltered expression of 17β-hydroxysteroid dehydrogenase (17β-Hsd) was observed in CP treated mice. FSH was found to be significantly elevated in serum and testis (p<0.001) while, inhibin B level was decreased significantly in serum (p<0.05) and non-significantly in testis. In addition, CP treatment down-regulated the expression of spermatogonial cell specific genes Oct4 and Vasa (p<0.001). Sertoli cell specific genes like androgen binding protein (Abp) (p<0.001) was down-regulated while Transferrin and FSH receptor (Fshr, p<0.001) was up-regulated. In MOE+CP group decreased FSH and increased inhibin B levels were observed in serum and testis. In addition, significant up-regulation of Oct4, Vasa and Abp and down-regulation of Transferrin and Fshr was observed. These results demonstrate that MOE ameliorated CP-induced testicular damage by improving endocrine functions and modulating the expression of Oct4, Vasa, Abp, Transferrin and Fshr genes.

Sub-Code-1227
Ref No: 08TJ18hY
Title: Gut microbiota amends Valproic acid induced Dysbiosis in prenatal model of Autism
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Abstract:
Autism is a neurodevelopmental disorder characterized by persistent deficits in social interaction and communication, repetitive patterns of behavior seen in 1-3 years of children. Still, no FDA approved a drug to treat the core symptoms of autism. Probiotics (Gut Microbiota) has influence on brain development and functioning through GUT-BRAIN AXIS. Autistic children on average 44% lower levels of Gut microbiota (Dysbiosis) of strains Lactobacillus and Bifidobacterium were seen. Autism was induced by administration of valproic acid 400mg/kg, i.p. on gestation 12.5 to the pregnant rats. The offspring were weaned on postnatal (PND) day 23; separate them into 13 groups, each group with six rats. Treat the autistic rats with different Probiotic strains (L. Acidophilus, L. Bulgaricus, L. Casei, L. Plantarum, B. Bifidum, B. Infantis, B. Longum, B. subtilis, Multi-Lactobacillus, Multi-Bifidobacterium, and Multi-Probiotic Strains) with the dose of NLT 1 billion CFU/day p.o. up to PND 50. Behavioral studies (Negative geotaxis, Rotarod, Eddy's Hot plate, T-maze, Morris water maze, Social interaction, etc) are performed on various postnatal days until PND 50. On PND 50 sacrifice animals for Biomarkers (Dopamine, 5HT, BDNF, IL-6, TNF alpha, and Antioxidants) and Histopathology (Hippocampus and cerebellum). Thus the results of our study revealed that supplementation with probiotics PND 23 - 50 showed that there is a significant recovery in behavioral, biochemical and Histopathology alterations in comparison to the Autistic group.

Sub-Code-1228
Ref No: BJjdXtvo
Title: Pharmacological studies of mangrove flora of the Indian Sunderbans
OBJECTIVES: The Sundarbans is the largest mangrove forest in the world. UNESCO (1986) confirmed 65 species belonging to 16 families of true mangroves all over the world; 44 are native to Asia, out of which, 32 are found in the Indian Sundarbans. There is lack of research on the pharmacology of mangrove plants. We explored bioactive constituents and pharmacological activity of five abundant mangrove species.

METHODS: The leaves of the selected mangroves (Rhizophora mucronata L., Avicennia officinalis L., Sonneratia apetala B., Bruguiera gymnorrhiza L. and Acanthus illicifollis L.) were collected from the mangrove forest areas of Sundarbans, West Bengal, and identified by Botanical Survey of India. The specimens were shade dried, crushed, Soxhlet-extracted with hydro-methanol (20-80%) and vacuum dried. The extracts were standardized by HPTLC fingerprints. Antioxidant properties were assessed by estimating phenolics, flavonoids and radical scavenging (DPPH, superoxide anions, nitric oxides radicals, hydroxyl radicals) actions. Pharmacological screenings were done in laboratory rodents using standard methods like carrageenan-induced paw inflammation, cyclophosphamide induced immune suppression, streptozotocin induced hyperglycemia, D-galactosamine induced hepatotoxicity, ethanol induced gastric ulcers and castor oil induced diarrhea.

RESULTS: Mangrove extracts exhibited multiple potential bioactive constituents and strong antioxidant activities. Anti-inflammatory, immune stimulatory, anti-hyperglycemic, hepatoprotective, anti-ulcer and anti-diarrheal actions of mangrove were observed and compared.

CONCLUSIONS: These mangrove plants contain bioactive therapeutic constituents and have therapeutic potential that needs further exploration. Preserving mangrove biodiversity is essential.

Keywords: mangrove, Sundarbans, antioxidant, medicinal plant
TB related symptoms. The information of traditional knowledge of plants is empirical lacking systematic scientific investigation.

To provide a scientific rationale for the traditional uses of some medicinal plants in treating prolonged cough, chest complaints and TB by ethnic groups. Semi structured interviews and guided field-walk methods were used to gather information on medicinal plants used by the tribal traditional healers. The ethanol extracts of some plants were evaluated for in vitro anti-tuberculosis activity against Mtb H37Rv and six MDR clinical isolates of Mtb. The plant extracts found to be active against Mtb were further evaluated for general cytotoxicity against human THP-1 macrophages.

Some plants also displayed intra cellular killing of bacilli inside infected macrophages. The IC50 (50% inhibitory concentration) values of most of the plant extracts on THP-1 was found to be higher than MIC values against M. tuberculosis, indicating that the THP-1 cells are not adversely affected at concentrations that are effective against Mtb. The column fractions of one plant were identified for significant anti-TB potentials using chromatographic techniques.

Our study clearly lends support to the traditional uses of some plants in TB related symptoms as we have found them to exhibit significant in vitro anti-TB activity. The research could yield more information to improve the existing therapeutic practices after isolation of pure compound/s, study of safety parameters and in vivo anti-TB activity.

Key words: Traditional medicine, medicinal plants, Mycobacterium tuberculosis, in vitro activity, tuberculosis, adjunct therapy.

Sub-Code-1230

Ref No: McZGZdY7

Title: Escin Mitigates Cardiac Autonomic Neuropathy in diabetic rats

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Abstract:

Nuclear factor kappa beta (NF-κB) plays crucial role in the pathophysiology of cardiomyopathy and neuropathy. Escin is a natural mixture of triterpenoid saponins which has potent NF-κB inhibitory and antioxidant activity. Hence, the present study was designed to evaluate the effect of escin in the management of cardiac autonomic neuropathy. Diabetes was induced in Sprague Dawley rats with streptozotocin (55 mg/kg, i.p.) . Animals with glucose level above 250 mg/dl were randomized in different groups after six weeks of induction (n=6). Disease control received no treatment; standard control received pregabalin (30 mg/kg) while, other groups received escin at dose 5, 10 and 20 mg/kg for next four weeks. One group was kept as normal control. Body weight, relative organ weight and plasma glucose level were measured at the end of study. Basic hemodynamic parameters and heart rate variability were measured using data acquisition system. Oxidative stress parameters like superoxide dismutase, reduced glutathione, catalase and malonaldehyde were determined in the vagus nerves. Circulatory MMP-9 level was determined by ELISA assay.

Treatment with escin at dose of 10 and 20 mg/kg showed significant improvement in body weight and relative heart weight when compared to disease control. Escin significantly
reduced fasting plasma glucose level. Escin treatment showed significant improvement in hemodynamic parameters and heart rate variability as compared to diabetic animals. Escin significantly reduced the malonaldehyde level. Escin treatment significantly increased reduced glutathione, catalase and superoxide dismutase levels at 10 and 20 mg/kg when compared to diabetic animals. Escin treatment significantly reduced plasma MMP-9 level in diabetic rats. The escin treatment at dose 10 and 20 mg/kg mitigates cardiac autonomic neuropathy in diabetic rats. The results of study indicated that escin can be useful option for management of cardiac autonomic neuropathy.

Sub-Code- 1231

Ref No: rEIOixIX

Title: Validating Traditional Medicine: A Science or a Art?

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Abstract:

Traditional medicine has been defined as the “knowledge, skills & practices of holistic healthcare, recognized and accepted for its role in the maintenance of health and treatment of diseases. It is based on indigenous themes, beliefs and experiences.” The role of the healer and belief of the patient plays a major role in the way the systems are practised.

The measure for establishing the validity of allopathy medicines is the Randomized Clinical Trial. Testing in humans involves testing of the drugs in a controlled population, who are all similar in a set of characters which are defined before as inclusion, exclusion criteria. Here the one shoe fits all approach is used.

The approach in traditional medicine for diagnosis and management of the patient is very individualized. Here the one shoe fits all approach cannot be applied. The approach of modern medicine is said to be mechanistic and reductionist, while traditional medicine is dialectic and holistic. The randomized controlled test may not be the best way to establish the validity of traditional systems of medicines.

Use of techniques of molecular medicine, application of genomics may help. What is needed is an alternative model for establishing the clinical validity of traditional medicine. The model would have to have both the scientific precision of a randomized controlled study as well as the richness of the process of traditional medicine. It is imperative that scientists involved in research of herbal medicines remember the principles on which traditional medicines rests, such as individual characteristics, holistic approach, synchrony with nature, behaviour and diet. The art of traditional medicine at no cost should become subservient to the science of modern medicine. Only then will the true validity of traditional medicine be established. The paper proposes to discuss how this can be done.
Title: Anti-diabetic and Cardioprotective effects of Poly-Herbal Formulation of Medicinal Plants with Dipeptidyl Peptidase-IV Inhibitory Activity: In silico, in vitro and in vivo analyses

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Abstract:

Background: Dipeptidyl peptidase-IV (DPP-IV) inhibitors have multiple beneficial effects as antidiabetic agents. However, they are not very cost effective and are known to cause several unacceptable adverse effects such as pancreatitis and anaphylaxis. In this scenario, DPP-IV inhibitors from an alternative source are warranted.

Objectives: This study was designed to develop a natural DPP-IV inhibitor (polyherbal formulation) of medicinal plants: Terminalia arjuna, Commiphora mukul and Phyllanthus emblica and evaluate its cardioprotective, antihypertensive and anti-diabetic efficacy, safety as well as mechanisms in experimental model of diabetes as well as hypertension. Results were compared with Vildagliptin, the synthetic DPP-IV Inhibitor used clinically.

Methodology: Approval from Institutional Animal Ethics Committee was obtained for the study. Deoxycorticosterone acetate: DOCA (10mg/kg) was administered subcutaneously to induce hypertension while streptozotocin (45 mg/kg) s.c developed type 2 diabetes among experimental rats.

Results: The Polyherbal Combination demonstrated superior DPP-IV Inhibitory activity as compared to Individual medicinal plants as delineated by in vitro, in silico and in vivo studies. The antidiabetic effect of polyherbal combination was found to be comparable to marketed synthetic DPP-IV Inhibitor: Vildagliptin. The cardioprotective efficacy of polyherbal combination was superior to Vildagliptin. The poly herbal Combination when administered to hypertensive rats, resulted in a modest fall in systolic and diastolic blood pressure (although not statistically significant) which was comparable to Vildagliptin. Additional beneficial effects (diuretic, natriuretic, hypolipidemic, reduction in insulin resistance, preservation of beta cell function) activities demonstrated by Polyherbal Combination may contribute to therapeutic effects of the Polyherbal combination. The Polyherbal combination was found to be safe as assessed by biochemical and histopathological studies.

Conclusion: DPP-IV Inhibitory activity of Unique polyherbal formulation of medicinal plants :Terminalia arjuna, Commiphora mukul and Phyllanthus emblica demonstrated significant antidiabetic and myocardial salvaging effects and may represent a natural alternative to synthetic DPP-IV Inhibitors.
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Abstract:
Aim of the study- to study the toxicity profile of Ayurvedic formulation Sanjivani vati in experimental animals.

Methodology
Acute toxicity study in mice and 90 days repeated dose oral toxicity study in rats were carried out as per CCRAS protocol. Therapeutic dose was derived from human dose converted into respective animal dose. In acute toxicity study, single oral dose of ten times higher therapeutic dose was used and the animals observed for 14 days for toxic manifestation. In 90 days repeated dose oral toxicity study, therapeutic dose, five times the therapeutic dose and ten times the therapeutic dose were given to three groups (group II, group III and group IV) of animals daily up to 90 days. Group I served as vehicle control. On day 30, 60 and 90th day, the animals were tested for changes in urine, haematology and biochemical parameters. After 90th day of dosing all the animals were sacrificed and examined for postmortem lesions, organ weight and histopathological abnormality.

Results
The results of the acute toxicity study revealed that the Ayurvedic formulation Sanjivani vati was found to be apparently non toxic when given as a single dose of ten times higher therapeutic dose in mice. Repeated dose administration for 90 days in higher dose level did not produce any observable abnormality in experimental rats.

Conclusion Based on the results of this study it has been concluded that the drug Sanjivani vati did not produce any toxic effect in the experimental animals and proved to be safe at these dose levels and duration.

Sub-Code-1234

Ref No: 98fWAdfs

Title: Effect of Nishamlaki and Metformin on clinical, biochemical and inflammatory markers in patients of Polycystic Ovarian Syndrome

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Abstract:
Background- The polycystic ovarian syndrome (PCOS) is one of the commonest cause of menstrual irregularity which may lead to infertility due to anovulation in women. For diagnostic purpose, derangement in any two of three criteria - menstrual irregularity, hirsutism and ovarian volume- should be present. Insulin resistance is considered to be the
main cause of PCOS and so, Metformin is its standard treatment. For the same purpose, Nishamlaki (NA) is prescribed in Ayurveda. So, present study was planned to evaluate and compare the efficacy of NA with Metformin in patients of PCOS.

Objectives- To assess and compare the effect of Nishamlaki, Metformin & the combination on - regularity of menstrual cycles, ovarian volume, insulin resistance, metabolic markers - adiponectin, Leptin and on inflammatory markers â€“ TNF-Î±, IL-6, in PCOS.

Methodology â€“ It was a prospective, randomized, active controlled, parallel study on 24 PCOS patients from outpatient department of Obstetrics and Gynecology of a tertiary care hospital. Patients were randomly allocated to different groups and received Metformin 500mg or Nishamlaki 4gm or both, twice daily for 3 months.

Ultrasound and biochemical tests were done before and after the study.

Results- Along with regularization of menstrual cycles, Nishamlaki showed significant reduction in ovarian volume. Significant reduction in Insulin resistance was seen in NA, Metformin and combination groups. Significant rise in adiponectin and fall in IL-6 was observed in combination group. Out of 7 patients complaining of infertility due to PCOS, 3 conceived during the treatment, in NA group.

Conclusion- Metformin and NA were found to improve major criteria of PCOS â€“ insulin resistance. NA also improved the hormonal profile, menstruation pattern and fertility outcome. Additionally, it improved the adiponectin levels and reduced inflammatory markers and hence can be considered as an add on drug useful for the treatment of PCOS.

Keywords- PCOS, insulin resistance, Metformin, Nishamlaki.

**Sub-code-1235**

**Ref no:** 6Vw7WFSY

**Title:** Tanshinones: promising lead compounds from Salvia Miltiorrhiza Bunge

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**Abstract:**

Historically, medicinal herbs have been used all civilizations for the treatment of various diseases. Natural products have been acting as an important source of new drug research and development. Salvia miltiorrhiza Bunge (Danshen) is a widely prescribed herb in Traditional Chinese Medicine for more than 2,000 years. Tanshinones are a series of lipophilic diterpene quinones isolated from Danshen, including tanshinone IIA, cryptotanshinone, dihydrotanshinone I, etc. Accumulated documents showed that tanshinones have cardiovascular protection, anti-cancer, anti-bacterial, anti-inflammatory, anti-Alzheimer's disease, and among others. Actually, Sodium tanshinone IIA sulfonate, the derivative of tanshinone IIA, has been approved by the State Food and Drug Administration (SFDA) of China for the treatment of cardiovascular diseases for years. Our studies showed that total tanshinones induced protective autophagy in cancer cells and inhibited inflammatory response. Cryptotanshinone induced pro-death autophagy in cancer cells and inhibited ox-LDL-induced LOX-1 expression. Especially, dihydrotanshinone I showed significant
anti-atherosclerotic effects in ApE KO mice regardless of prophylactic or therapeutic administration. Dihydrotanshinone I also showed an inhibitory effect on DSS-induced colitis and protect brain damage in a MACO stroke model. Here, I will summarize the recent results obtained from my lab in this area with a focus on the pharmacological effect of dihydrotanshinone I.

Keywords: Tanshinones; Dihydrotanshinone I; Atherosclerosis; Colitis; Stroke

Acknowledgements: This study was Funded by The Science and Technology Development Fund, Macau SAR (File no. 078/2016/A2) and the National Natural Science Foundation of China (no. 81774200).

Sub-code-1236

Ref No: IIINPNA9

Title: Development and validation of a modified valproic acid (VPA) model of autism spectrum disorder (ASD) and evaluation of the efficacy of Withania Somnifera Linn. (neuroprotective herbal agent) in experimental rat model of ASD (both VPA and modified VPA model).

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Abstract:

VPA model is an established model of ASD. However, the VPA model fails to model totality of features of ASD. Our objectives were development of a modified VPA model with enhanced validity and evaluation of effect of Withania somnifera in rat model of ASD (VPA model and modified VPA model). Pregnant dams were divided into four groups: NDC (normal diet + saline), NDV (normal diet + VPA), IDC (iron deficiency diet + saline) and IDV (iron deficiency diet + VPA). VPA/saline was administered to pregnant dams on 12.5 day of gestation. Male pups were further divided into 10 groups: NDC, NDV, NDVR, NDVW and NDVWR (VPA model) and IDC, IDV, IDVR, IDVW and IDVRW (modified VPA model). Standard drug risperidone (R), WS and combination (WR) were administered from PND 30 to 60. Developmental parameters, sociability (TST), memory (MWM), motor development (rota rod), seizure susceptibility (PTZ test), biochemical (TBARS, GSH), cytokine levels (IL-1β, BDNF, TNF-α) in brain homogenate and brain histopathology were evaluated. In silico docking study was done to evaluate interaction between important WS phytochemicals and different dysfunctional neuropathways. Animals in both VPA and modified VPA model showed delayed developmental parameters, socialization and cognitive impairment, higher oxidative stress, pro-inflammatory cytokines and neuronal pycnosis in brain compared to control. Developmental delay, anxiety, impaired sociability, TNF-α, IL-1β and BDNF levels were higher in the modified model. WS treatment resulted in improvement in socialization, oxidative stress and cognitive parameters and decreased neuroinflammatory cytokines, seizure susceptibility and neuronal degeneration (histopathology). In docking studies, interaction was seen between WS phytochemicals and GABA-A receptor (agonist binding site) and NMDA receptor (antagonist binding site). This study validates the modified VPA
model as a model of ASD with enhanced validity. Treatment with WS resulted in improvement in ASD symptomatology and decreased seizure susceptibility.

Sub-Code-1237

Ref No: e3GhKk1Y

Title: Effect of Ocimum Sanctum, Zingiber Officinale and Piper Nigrum extracts on Ovalbumin (Ova) induced allergic inflammatory disease and selective gut bacteria in Balb/C mice.

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Abstract:

Aim: To explore the impact of herbal, traditional medicine such as O.sanctum(OS), Z.officinale(ZO) and P.nigrum(PN) extracts on ovalbumin (OVA)-induced allergic inflammation and caecal bacteria in Balb/C mice.

Methods: Mice were intraperitoneally sensitized and subsequently challenged intranasally with ovalbumin to induce allergic inflammatory response and were divided into six groups. The first group was maintained without any treatment. The second, third, fourth and fifth groups were treated with FOS(5gm/Kg.bw), OS(850mg/Kg.bw), ZO(500mg/Kg.bw) and PN(100mg/Kg.bw) extracts, the sixth group was treated with all the three extracts together(combined) for a period of 8 weeks, alongside inhalation challenge. One group of mice were maintained without OVA challenge or any treatment. At the end of the study, histopathological examination of the lung was performed. LPS, intestinal permeability, OVA specific-IgE were quantified in the serum. The mRNA expression levels of IL-4, IL-5, TNF-Î±, iNOS, NF-kB, TLR4, AQP1 and AQP5 were measured in lungs and occludin expression in the intestine and caecal Lactobacillus, Bifidobacterium, Bacteroides, Firmicutes were quantified by RT-PCR.

Results: Treatment of OVA challenged animals with extracts alone or combined showed significant(P<0.05) attenuation of lung alveolar thickening, reduced serum LPS(P<0.05), OVA specific-IgE(21.61%-48.51%) levels and improved intestinal integrity(P<0.05) after treatment with these extracts alone or combined. These extracts also showed reduced(P<0.05) expression levels of IL-4, IL-5, TNF-Î±, iNOS, NF-kB, TLR4 and up-regulation of Occludin, AQP1 and AQP5 levels. Treatment with these extracts improved the growth of Lactobacilli and Bifidobacteria and inhibited Bacteroides and Firmicutes growth in the OVA challenged animals.

Conclusion: O.sanctum, Z.officinale, and P.nigrum alone and combined extracts effectively suppressed local and systemic allergic immunological reactions, regulated inflammatory markers and inhibited ovalbumin specific IgE formation. The extracts also demonstrated prebiotic potential and improved intestinal integrity. The anti-asthmatic effects of these herbs could be due to their rich phytochemicals content or it could be attributed to their prebiotic potential.
Title: Effect of Withania Somniferra on seizure susceptibility in twin rodent model of autism spectrum disorder (ASD).

Author Name: Dr Subodh kumar

Co-Author Name: Rakesh Ruhela1, Shringika Soni1, Phulen Sarma1, Abhishek Mishra1, Ajay Prakash1, Bikash Medhi.

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Abstract:

Purpose: Autistic people are more prone to seizure and prevalence of epilepsy is more in autistic population. Withania Somniferra is a medicinal herb used in treatment of wide range of neurological conditions. In this study, we evaluate the effect of Withania somniferra on seizure susceptibility in Valproic acid (VPA) and modified VPA model of autism.

Method: The study was conducted after approval of animal ethics committee. Two animal models were used (VPA and modified VPA model). In the VPA model, animals were divided into 5 groupsNDC, NDV, NDVR, NDVW, NDVRW and in the modified VPA group, animals were divided into 5 groups IDC, IDV, IDVR, IDVW and IDVRW. Withania somniferra was administered at a dose of 40 mg/Kg orally. The rats were injected with 60 mg/kg PTZ i.p. Each PTZ tested rat was placed within perplex chamber and observed for one hour. Seizure score was calculated for each animal.

Results: In the VPA model, Seizure score increased in the disease control group (NDV) compared to normal control (NDC) group (p<0.05). Treatment with Withania Somniferra (NDVW) and the combination group (NDVWR) resulted in significant decrease in seizure score compared to the disease control group (p<0.05). No significant difference was observed between the different treatment groups (p>0.05).

In the Modified VPA model, seizure score increased in the disease control group (IDV) compared to the normal diet control (NDC) and the iron deficiency diet control (IDC) groups (p<0.05). Treatment with Withania Somniferra (IDVWS) and the combination therapy (IDVRWS) resulted in statistically significant decrease in seizure score (p<0.05). No significant difference was observed between different treatment groups.

Conclusion: Treatment with Withania Somniferra decreased the seizure susceptibility in both the model of autism spectrum disorder.


Keyword: Withania somniferra, Autism spectrum disorder, Seizure
Research in traditional medicine is of global interest and emerging as a leading area for discovery and development of newer therapeutic strategies with fewer adverse effects especially in a wide variety of chronic diseases. Interactions between traditional and modern medicinal systems are being advocated and encouraged for validating traditional medicine and modern scientific techniques are being increasingly used. Traditional medicinal research and herbal drug development has emerged as one of the leading priority areas in medicine. As per WHO, more than 75% of the population of developing world depends on traditional system of medicine viz. Ayurveda, Unani, Yoga, and Homeopathy. Obstructive airway diseases (Bronchial Asthma and COPD) affect 5-7% population in industrialized countries and epidemiological evidence suggest increase in incidences of COPD especially in elderly population and bronchial asthma in children. Bronchial asthma is one of the most common chronic inflammatory diseases of the respiratory tract. Current pharmacotherapies for bronchial asthma are mainly aimed at relieving symptoms by bronchodilators and controlling asthmatic attacks with anti-inflammatory agents which are mainly steroid dependent. These therapeutic strategies are associated with several untoward drug effects which negatively affect the compliance to therapy. It is therefore important to explore adjuncts from alternative forms of therapy to compliment/supplement the conventional treatment of the disease. A clinical study was conducted to evaluate the effects of yogic intervention on pulmonary functions and quality of life parameter in patients of bronchial asthma. The oxidative and nitrosative stress markers were assessed to delineate the possible cellular mechanisms involved during such response. The study was conducted as per the GCP guidelines and was approved by the Institutional Ethical committee. The patients with clinical diagnosis of mild to moderate bronchial asthma, attending the OPD of Vallabhbhai Patel Chest Institute, University of Delhi, were recruited for the study and randomized into two groups. In Group I patients were given conventional anti-asthma treatment and in Group II patients received additionally Yogic intervention for 50 minutes daily. Pulmonary functions, Oxidative stress markers, Fractional exhaled nitric oxide (FeNO), and Quality of Life were assessed in all patients at baseline and after three months of treatment. The study showed a significant improvement in pulmonary function parameters (FEV1 and FVC) and in Quality of Life as assessed by a Questionnaire developed by McMaster University, Canada, in Group II. The level of oxidative stress markers (MDA and SOD) were reduced significantly along with reduction in FeNO in yogic intervention group as compared to control group. Oxidative stress plays an important role in the etiology of bronchial asthma and the present results showed that yogic intervention improved the antioxidant-prooxidant balance. This anti-oxidant effect
of yoga may be responsible for reducing the inflammation in airways and thus improving pulmonary functions. The results suggest that introducing yoga as adjunct therapy in bronchial asthma can improve the quality of life, minimize the need for medication and reduce burden of the cost of drugs on patients.

There are several herbal drugs which have been implicated as anti-asthma drugs in Ayurveda. Medicinal plant products have the unique distinction of generally being effective and safe, but a clear scientific basis for their use has always been a shortcoming. The proposed study investigated in detail the efficacy and pharmacodynamics of extracts of a medicinal plant-Solanum xanthocarpum, with reference to its potential therapeutic benefit in experimental model of airway inflammation, bronchial hyper reactivity and possible cellular and molecular mechanisms involved therein. Wistar rats were immunized with ovalbumin (OVA) on day 1 and were challenged with 1% OVA in saline aerosol from day 15 to 22. Standardized aqueous extracts of Solanum xanthocarpum(whole plant extract) were administered orally for 22 days in different treatment groups. After 24h of last challenge, rats were anesthetized and blood and bronchoalveolar lavage (BAL) were collected and analysed for IgE levels, pro-inflammatory cytokines (TNF-α & IL-6), Th2 type cytokines (IL-4 & IFN-γ) and oxidative stress parameters (malondialdehyde (MDA) and reduced glutathione (GSH). The results showed that ovalbumin specific IgE levels were elevated in the immunized rats which were reduced by Solanum xanthocarpumin both blood and BALF. These results were comparable with that of standard drug prednisolone. Similarly, other proinflammatory cytokines, TNF-α, IL-6 & IL-4 were elevated in OVA immunized rats and prior administration of Solanum xanthocarpum extract attenuated rise in these cytokines and IFN-γ was elevated maximum in both blood and BALF as compared to control. The oxidative stress markers, i.e. MDA levels were also attenuated while GSH levels were elevated in rats treated with Solanum xanthocarpum as compared to that in OVA controls. The results showed that aqueous extract of Solanum xanthocarpum had anti-inflammatory and immunomodulatory effects in the experimental model of bronchial asthma which was accompanied with reduction in oxidative stress markers. It can be concluded that such integrated experimental and clinical studies will create an ideal platform to bridge the gap between traditional and modern systems of medicine which in turn will be highly conducive for herbal drug development and rationalization of therapy in many disease states.

Sub-Code-1240

Ref no:-CbvH2601

Title: The in vitro effect of Scottish plant extracts: Targeting the efflux transporter ABCG2 to overcome chemoresistance.

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Abstract:

Persistent use of cytotoxic chemotherapy drugs can lead to multidrug resistance (MDR). MDR is one of the most common reasons for the failure of a chemotherapy drug and thus, remains a major obstacle in successful and effective treatment of cancers, including breast cancer. The ABCG2
transporter is a member of the ATP-binding cassette (ABC) family and is frequently overexpressed in cancer cells by limiting the intracellular accumulation of cytotoxic drugs by active exclusion. Plant-derived agents have great potential to both prevent the onset or delay the progression of the carcinogenic process, and enhance the efficacy of mainstream cytotoxic drugs. Traditional Chinese Medicines (TCMs) have been reported to reverse MDR mediated by ABCG2 thus, enhancing the efficacy of western chemotherapeutic drugs. This study aimed to (i) screen the Strathclyde Natural Product Library for Scottish plant extract(s) which could reverse MDR against a model of breast cancer drug resistance in vitro and (ii) investigate interaction(s) at the level of the ABCG2 transporter. Results have shown one Scottish plant extract may have the potential to be used in combination with doxorubicin to reverse multi-drug resistance. Identification of a novel Scottish natural product which could also reverse MDR could therefore, open avenues to expand research in this area of drug discovery.

Sub-Code-1241
Ref No: CR8fO6cA
Title: Anti-inflammatory activity of ethanolic extract of Toona ciliata M. Roem in experimental albino rats.
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Abstract:

Background: The control of pain and inflammation is one of the most important uses of drugs. Plants have been the source of many local medication. Likewise, leaves of Toona ciliata M. Roem, locally known as Tairelë in Manipuri is used as herbal medication to cure ailments like headache, fever, worm infestation, diarrhoea, ringworm infection and as expectorant.

Aim: To evaluate the anti-inflammatory activity of ethanolic extract of Toona ciliata M. Roem (EETC) in experimental albino rats.

Methods: Anti-inflammatory studies were carried out for acute inflammation by carrageenan induced rat paw edema method, subacute inflammation by turpentine oil induced granuloma pouch method and chronic inflammation by formalin induced arthritis method. 4 groups of 6 rats each were used in all the three methods. ANOVA and Bonferroni test was used for analysis of the continuous variables. p<0.05 was considered significant.

Result: In carrageenan induced rat paw edema, there was significant (p<0.05) inhibition of paw edema after 30 minutes of carrageenan injection. In the granuloma pouch method, there was significant (p<0.05) reduction in formation of granulomatous exudates on 7th day after the injection of turpentine oil in the air pouch made on the back of the rats. In the formalin induced arthritis, there was significant (p<0.05) inhibition of paw edema from 3rd day of induction of arthritis.

Conclusion: The ethanolic extract of Toona ciliata M. Roem is significantly effective in controlling various type of inflammation in rats. Further study with different methods to isolate the active constituents of the plant extracts is suggested.

Key words: Rat, Toona ciliata M. Roem, Pain, Inflammation
**Sub-Code-1242**

**Ref No:** bVS3jeFo

**Title:** Exploration of Nimbolide in Acute Respiratory Distress Syndrome (ARDS)

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**Abstract:**

Acute respiratory distress syndrome (ARDS) is a complex lung inflammatory disease associated with refractory hypoxemia and pulmonary oedema. Due to the problems associated with existing drugs, there is a need for developing new therapeutic agents. In lipopolysaccharide (LPS) induced in vitro and in vivo models of ARDS, we have evaluated the protective effects of Nimbolide (which is an active constituent of Neem tree). It was demonstrated that Nimbolide significantly decreased the nitrosative-oxidative stress and pro-inflammatory cytokines. In mice model, Nimbolide inhibited the migration of inflammatory cells (neutrophils and mast cells) into lungs, while normalizing the LPS induced hypothermia. Nimbolide was found to be modulating the expression of epigenetic regulators and suppressing the nuclear translocation of NF-ÎºB and HDAC-3. Molecular docking studies demonstrated the strong interaction between Nimbolide and TNF-Î± Nimbolide abrogated the TNF-Î± regulated NF-ÎºB and HDAC-3 crosstalk.

In order to overcome the pharmacokinetic issues associated with Nimbolide and to increase the targeted local delivery into lungs Nimbolide loaded liposomes were prepared and conjugated with iRGD peptide prepared formulations were found to be increasing the delivery of Nimbolide to lung inflammatory sites and also increased the therapeutic effects.

Our studies clearly demonstrate the promising therapeutics effects of Nimbolide in severe lung inflammatory models through novel mechanisms and formulation strategy is found to be suitable approach to inhalationally deliver into lung inflammatory sites.

**Sub-Code-1243**

**Ref No:** 5Oy0Nd3f

**Title:** EFFECT OF QUERCETIN ON NEUROPATHIC PAIN INDUCED BY PARTIAL SCIATIC NERVE LIGATION MODEL IN RATS

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Abstract:
The present study was aimed to evaluate the influence of quercetin on neuropathic pain. Six groups (n=6) of male Wistar rats were selected and randomly allocated as control, sham, Partial Sciatic Nerve Ligation (PSNL), duloxetine treated, quercetin treated and duloxetine & quercetin combination treated groups. PSNL was done by tight ligation of the sciatic nerve with a copper wire to induce neuropathic pain in rats. After surgery, duloxetine in a dose of 30mg/kg was administered and quercetin with 50mg/kg dose was administrated for 15 days. By administrating duloxetine the paw withdrawal latency (with heat hyperalgesia, cold allodynia, mechanical hyperalgesia) was decreased and this is mild when compared to the surgical control. When quercetin is given along with duloxetine in combination (duloxetine + quercetin) paw withdrawal threshold also significantly (p<0.001) decreased compared to that of duloxetine and surgical control. In histopathological studies (on day 1, 15, 22), the prolonged administration of duloxetine resulted in mild increase of axonal degeneration. In quercetin treated group it is observed that a decrease in axonal degeneration was occurred. In the combination (duloxetine + quercetin) treated group, decrease in axonal degeneration was observed and they produced synergistic effect. In conclusion quercetin improved the neuropathic pain and further studies are required to prove the effects in patients to quercetin use as adjuent in the treatment of neuropathic pain.

Key Words: Neuropathic pain, Partial Sciatic Nerve Ligation, Duloxetine, Quercetin, Axonal degeneration,
Title: Hypoglycemic syndrome in a Glinus oppositifolius intoxicated cattle herd and its successful therapeutic management – a case report.

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Abstract:

The present study investigates the Glinus oppositifolius induced hypoglycemic syndrome in a cattle herd and its treatment. Glinus oppositifolius is an annual herb and it contains saponins, flavonoids, carbohydrates, polysaccharides, steroids and alkaloids. It is commonly seen in delta regions of Thanjavur, Tamil Nadu. In this area, cattle farmers are having the practice of allowing the animals for grazing during morning hours. In this study a total of six cross bred cows aged around 3-4 years brought to Large animal Clinic, Veterinary Clinical Complex, Veterinary College and Research Institute, Orathanadu, Tamil Nadu with the history of circling signs (nervous symptoms) after grazing. The farmer brought the samples of plant materials which the cow grazed and reported that each animal grazed around approximately 4 Kilogram (kg) plant materials. On clinical examination, animals showed pale mucous membrane, irregular heart beat and circling sign. The animals were medically stabilized. Blood, serum, urine, faecal and ruminal samples were collected for further detailed examination. Haematology revealed normal haemoglobin, packed cell volume, Red blood cell (RBC) and White blood cell (WBC) count. Serum biochemistry showed low blood glucose, normal total protein, albumin, Blood Urea Nitrogen and creatinine level. Electrolyte abnormalities were noticed. Electrocardiogram (ECG) showed diminished T wave indicating hypokalemia. Rumen liquor collected from rumen has mild protozoal activity. The animals were treated with oral administration of activated charcoal plus kaolin, intravenous injection of dextrose 25%, dexamethasone and sufficient fluid therapy comprising of multiple electrolyte solution was administrated. The animals recovered uneventfully.
Background: Scabies is a common dermatological presentation. Permethrin and Crotamiton both are being used for treating scabies. As there is no local study available regarding comparison of efficacy of Permethrin and Crotamiton in patients of scabies, current study has been undertaken. The objective of the study is to compare the efficacy of 5% Permethrin with 10% Crotamiton in patients of scabies.

Methods: A hospital-based study has been conducted at Department of Dermatology, Gandhi hospital, Secunderabad. One hundred and sixty patients with scabies (diagnosis made by scraping the burrows to extract mite, larva or eggs and visualized under light microscope) are assigned to Permethrin or Crotamiton group. Patients were followed for 4 weeks to determine the effectiveness of the treatment.

Results: A total of 160 patients were included in the study with a mean age of 45.49±17.047 years and ranging from 13–65 years. One hundred and one patients (63.1%) were male and remaining 59 patients (26.9%) were female. Treatment was effective in 81.3% patients being treated with 5% Permethrin and 53.8% in 10% Crotamiton group. Comparison of treatment showed superiority of 5% Permethrin over 10% Crotamiton (p=0.001). There was no effect of age and gender on the outcome of treatment.

Conclusion: The study concludes that 5% Permethrin cream is significantly superior to 10% Crotamiton cream in treating patients of scabies (81.3% vs. 53.8%, p=0.001).

Sub-code-1303

Ref No: VlwjuFtm

Title: Effects of Dawa-Ul-Kurkum, a unani polyherbal preparation, in experimental model of D-Galactosamine induced hepatotoxicity in rats and its possible mechanisms.

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Co-Author Name: Kavita Gulati*, Arunabha Ray1, Rais-Ur-Rehman2, Jamal Akhtar2

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Abstract:

Introduction: The liver is a crucial organ and its strategic location and multidimensional functions support almost every other organ in the body. In Unani system of medicine, a polyherbal formulation Dawa-Ul-Kurkum is effectively used in cases of liver dysfunction, anorexia, ascites and abdominal pain.

Results: In the vehicle treated experimental group, administration of D-Galactosamine induced significant derangements in liver function as evidenced by increased levels of Serum glutamic oxaloacetic transaminase (SGOT), Serum glutamic -pyruvic transaminase (SGPT), alkaline phosphatase and bilirubin, and reductions in body weight and increased liver weights, as compared to controls. Histopathological examination showed multifocal areas of inflammatory cell infiltrate in hepatic parenchyma and mild haemorrhages, focal necrosis, and mild vasodilation. Pretreatment with Dawa-Ul-Kurkum (DK, 250 and 500 mg/kg)
showed protective effects against the D-Galactosamine induced biochemical and histopathological derangements of liver function following D-Galactosamine. Similar effects were also seen after the hydroalcoholic extract of DK (HA, 500 and 1000 mg/kg) which showed marked protective effects on biochemical and histopathological parameters. The hepatoprotective effects of DK and HA were comparable to that seen after silymarin therapy. Liver damage induced by D-Galactosamine was associated with elevated levels of Malondialdehyde (MDA) and Nitrates and Nitrites (NOx) whereas; Glutathione (GSH) levels were reduced, as compared to controls. Pretreatments with DK and HA induced differential degrees of attenuations in these oxidative stress parameters.

Conclusion: Both DK and its 50% hydro-alcoholic extract were found to be effective against Galactosamine induced hepatotoxicity as they significantly prevented the hepatotoxic damage induced in rats, with differential effects on biochemical and oxidative stress parameters.

Sub-Code-1304

Ref No: jf53yovV

Title: Comparison of antifungal activity of Azadirachta Indica linn, Cassia Tora linn ethanolic leaf extract against fluconazole and voriconazole in malassezia infections.

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Abstract:

Malassezia are common lipid dependent fungi that grow on the sebaceous areas of human skin. Although Malassezia are a part of the normal human skin flora, they may also cause or exacerbate several skin diseases, including Tinea versicolor, Pityrosporum folliculitis, and Seborrheic dermatitis.

Objective: We compared the antifungal activities of Azadirachta indica and Cassia tora ethanolic leaf extracts with Fluconazole and Voriconazole for treating Malassezia infections.

Materials and Methods: 90% ethanolic extract of Azadirachta indica and Cassia tora were extracted by Soxhlet apparatus. Antifungal activity of these extracts against Malassezia dermatis species were tested using blotting paper disc diffusion technique and standard pour plate technique according to standard laboratory procedures. Antifungal activities were compared with Fluconazole (25 mcg) and Voriconazole (1 mcg) discs and colony count was interpreted as the product of number of colonies and standard dilution as CFU/ml.

Results: The ethanolic leaf extracts of Azadirachta indica and Cassia tora showed minimal antifungal activity against Malassezia dermatis compared to Fluconazole (25 mcg) and Voriconazole (1 mcg). The inhibition zone for leaf extract of Cassia tora was 20 mm and that of Azadirachta indica was 12 mm. But Fluconazole and Voriconazole showed larger zone of inhibition (> 40 mm). According to Pour plate technique, no growth of Malassezia dermatis was observed till 1:1000 dilution of Azadirachta indica and no growth of Malassezia dermatis was observed till 1:10000 dilution of Cassia tora. Colony counts were 2.92 × 10^5 CFU/ml for Azadirachta indica and confluent growth was observed with Cassia tora extract.

Conclusion: The tested extracts had too little antifungal activity to be used as a promising source of novel antimicrobial substances against Malassezia dermatis.
Keywords: Malassesia dermatitis, Azadirachta indica, Cassia tora, Fluconazole, Voriconazole, Blotting paper disc diffusion technique, Pour plate technique.

Sub-Code-1305
Ref No: H8nbkXsf

Title: Antimicrobial and antifungal activities of Ixora Coccinea L : An invitro study
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Abstract:

Introduction: Plants are the oldest source of medically useful compounds. There is continuous search for plant substances with antimicrobial property in context of emerging antibacterial resistance. Ixora coccinea has been used as a traditional medicine.

Aim: To determine the antimicrobial and antifungal activity of ethanol extract of flowers of Ixora Coccinea.

Materials and methods: Flowers were collected locally, dried plant material was finely powdered and extracted with 90% ethanol. Antimicrobial activity of Ixora flowers was tested by disc diffusion method against Staphylococcus aureus, Escherichia coli and Pseudomonas. Effect of Ixora flower extract on bacterial growth was done by broth dilution method. Antifungal activity was also tested by disc diffusion method against Candida albicans.

Results: When tested for antimicrobial activity using disc diffusion method, Staphylococcus aureus had maximum zone of inhibition. Escherichia coli and Pseudomonas showed no zone of inhibition which means no antibacterial activity. When tested for antifungal action Candida albicans showed no zone of inhibition.

Minimum bacterial concentration for Staphylococcus aureus was obtained at 1:32 dilution and for Pseudomonas and Escherichia.coli at 1:8 dilution.

Conclusion: Ixora flowers showed antibacterial activity against Staph aureus. No antifungal action was noted.

Keywords: Ixora Coccinea, antimicrobial, antifungal

Sub-Code-1306
Ref No: YQuIItDO

Title: Experimental pharmacological studies to evaluate the immunomodulatory and anti-inflammatory potential of optimized polyherbal preparation of asthma in rats.
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Abstract:

Objective: To evaluate the anti-inflammatory and immunomodulatory effects of optimized preparations of UNIM-352, a polyherbal preparation, in experimental model of asthma in rat

Material and methods: Wistar Rats (200-250g) were sensitized with ovalbumin adsorbed to aluminium hydroxide. After sensitization, rats were treated orally for 14 days with either of UNIM-352, optimized preparations of UNIM -352 (OPT1 -4) and prednisolone in separate groups. The rats were challenged with OVA on 14th day and after 24 h of challenge, they were anesthetized and blood and bronchoalveolar lavage (BAL) were collected for the assays of TNF-É‘ and IL-5 levels, eosinophils and neutrophils cell counts. The results were statistically analyzed and interpreted.

Results: The results showed that both doses of UNIM-352 significantly reduced the levels of TNF-É‘ in both blood and BAL fluid as compared to OVA sensitized and challenged experimental control group. Similarly both doses OPT- 1 and OPT- 3 treated rat significantly reduced levels of TNF-É‘ and IL-5 as compared to UNIM-352 in dose dependent manner. Further, both 200 and 400 mg preparations of OPT 1, OPT 3 and OPT 4 treated groups have significantly decreased number of eosinophils and neutrophils in both blood and BAL fluid vs experimental control group. The results were comparable with the standard drug, prednisolone

Conclusion: UNIM-352 and OPT1-4 differentially reduced the eosinophils and neutrophils counts, the effector inflammatory cells in asthma, which was accompanied with the reduction in levels of TNF-É‘ and IL-5 in both blood and BAL fluid suggesting their anti-inflammatory and immunomodulatory effects. This was comparable to the positive control, prednisolone in experimental model of asthma. This relative potential of various optimized preparations of this polyherbal drug in reducing/controlling the airway inflammation associated with bronchial asthma will be discussed.

Key words: BAL, TNF-É‘, immunomodulatory, UNIM-352, IL-5, Optimzed Preparations

Sub-Code-1307

Ref No: S2H6hBZX

Title: Frequency and belief in use of home remedies.

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Abstract:

Home remedy use is an often overlooked component of health self-management. Home remedies can potentially interfere with biomedical treatments. Home remedies are substances used to treat common symptoms and ailments. They can be divided into food products and readily available non-food household products. Home remedy use is a widespread self-care practice. It has been observed that medical and paramedical students are commonly involved in the practice of self-medication, without complete knowledge about the therapy they are
taking[2]. Present study was done to determine the knowledge, frequency and belief in use of home remedies among undergraduate medical students of a private medical college in Kochi, Kerala.

**Sub-Code-1308**

Ref No: UxXtMqKd

**Title:** Phytochemical investigation and biological evaluation of Gymnosporia Montana (Roth) Benth. for anti-inflammatory activity

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**Co-Author Name:** Kamalender Yadavb, Kirti Devib, Mahendra Bishnoib, Sanjay M Jachak a *.

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**Abstract:**

Over the decades natural products and their derivatives showed potential in the management and treatment of inflammatory disorders. Gymnosporia montana was reported to possess anti-inflammatory property in traditional medicine. The aim of present study is to evaluate anti-inflammatory activity and identify active constituents. Preliminary screening of hexanes, ethyl acetate, and methanol extracts of G.montana leaves for cytotoxicity on murine macrophage RAW 264.7 cell line by using MTT assay showed cell viability in the range of 97.43-84.88% at 50 Âµg/mL concentration. All the above three extracts were tested for inhibition of nitric oxide (NO) production in RAW 264.7 cells at 50 Âµg/mL concentration. Among the tested extracts, hexane extract exhibited the highest inhibition (78%) of NO production. Phytochemical investigation of active hexane extract resulted in the isolation of Î²-amyrin that showed significant inhibition of NO production of 84.79% at 20 ÂµM concentration.

**Sub-Code-1309**

Ref No: NxG1EKai

**Title:** Effect of carica papaya leaf extract on platelet count in dengue fever patients at BRIMS, Bidar.

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**Abstract:**

Background: Dengue is an acute viral infection with potential fatal Complications transmitted mainly by Aedes aegypti mosquito. Management of dengue fever primarily includes symptomatic and intensive supportive care. Carica papaya possess medicinal properties and widely used as traditional medicine in treatment dengue fever.
Objective: To analyse the effect of carica papaya leaf extract on platelet count in dengue fever.

Materials and Methods: A prospective observational study was conducted between 1st April 2019 to 30th June 2019 among 30 patients at BRIMS, Bidar. All subjects were followed up daily for 5 days with monitoring of blood counts.

Results: Out of 30 patients diagnosed with dengue fever with thrombocytopenia 22 were males 12 females, all of them were given carica papaya leaf extract which increased the platelet count significantly. Platelet count increased from day 2 (67.823 ± 9.2) treatment onwards to (133.007 ± 17674) on 5th day. Red blood cell count increased from day 2 (4.33 ± 0.14) to (4.65 ± 0.12) 5th day. Carica papaya leaf extract was tolerated by many Patients but few complained of gastritis.

Conclusion: Papaya extract offers a cheap and possibly effective treatment for dengue fever, As an adjuvant to ongoing therapy, Carica papaya leaf extract (CPE) was also found to increase the platelet count in dengue fever.

Key Words: Carica papaya leaf extract, Dengue fever, Thrombocytopenia.

Sub-Code-1310
Ref No: dp9cFoNV

Title: Evaluation of effect of Shobhanjana and Patoladi yoga In uni-nephrectomy and Doca induced hypertension in Wistar rats.

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Co-authors: Pallawi Khatavkar, Vijaya Pandit, Vijay Mate

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Abstract:

Background: Hypertension is commonest chronic non communicable disorder. Most of the patients are asymptomatic and accidently diagnosed for hypertension. Long term raised BP (Blood pressure) resulting into various cardiovascular complications, also called as silent killer.

Objectives: To evaluate the antihypertensive effect of Shobhanjana and Patoladi yoga in uni-nephrectomy and DOCA induced hypertension in wistar rats and also to find out its effect on biochemical parameters.

Materials and Methods: Wistar rats of either sex weighing 200-250 gms were used for the study. Uni-nephrectomy was carried out under all aseptic precautions followed by daily ceftriaxone 200mg/kg for 5 days. From 6th day drinking water was replaced by 1% NaCl along with DOCA (Deoxy corticosterone acetate) s. c. in the dose of 20mg/kg twice a week for 4 weeks. Blood pressure measured with non-invasive blood pressure system to confirm hypertension. Hypertensive animals were randomly divided into five experimental groups. The animals of test groups were administered test drug as a single oral daily dose for 15 days, while positive control group were treated with the Enalapril 10mg/kg. Control and disease control group treated with saline. Measurement of systolic, diastolic and mean blood pressure was carried out on day 0,7 and day 15. Blood collected for biochemical analysis on day 15. Statistical analysis done with Graph Pad prism 6.
Results: Significant decrease in systolic, diastolic & mean blood pressure was seen on day 7 & 15 with Shobhanjana (P < 0.01) and Patoladi yoga (P < 0.01) and Enalapril group (P < 0.01) but combination (S+P) did not show synergistic effect. Patoladi yoga (P < 0.001) was more effective than Shobhanjan (P < 0.05) and Enalapril (P < 0.01) in reducing in reducing cholesterol and Triglycerides.

Conclusion: Shobhanjana and Patoladi yoga both showed anti-hypertensive activity. Antihypertensive activity was comparable to Enalapril.

Sub-Code-1311

Ref No: IOqrr6N9

Title: Evaluation of efficacy and safety of a polyherbal unani formulation in Diabetes Mellitus Type 2 (ZayāºBāªá¹¬Us Sukkari Qism SāºNi) - A randomised controlled clinical study

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Abstract:

Introduction: Diabetes mellitus type 2 (ZayĀºBāªá¹¬us sukkari qism sĀºni) is a major health concern in 21th century. Despite tremendous advances in modern sciences, there is a lack of relatively safe and effective drug for its management. In Unani Medicine, herbal drugs having hypoglycaemic properties are being used for its management. This study was planned to validate and document the efficacy of a polyherbal Unani formulation containing Gymnema sylvestre, Tinospora cordifolia, and Syzygium cumini.

Objective: Its primary objective was to evaluate the efficacy and safety of a polyherbal Unani formulation in the management of Diabetes Mellitus Type 2.

Materials and Methods: It was a randomised controlled clinical study conducted on sixty participants of diagnosed Diabetes Mellitus Type 2 inadequately controlled by diet and exercise. The test drug was given to group-A participants (n=30) 6 gm twice daily before 30 minutes of meal for 12 weeks and the standard drug metformin (500 mg) was given twice daily to group-B participants (n=30). The enrolment of the participant was started after registration in Clinical Trial Registry of India under registration number CTRI/2017/12/010929.

Results: When Mean (Â± SEM) value of fasting blood glucose, post prandial blood glucose and glycosylated haemoglobin (HbA1c) in both groups, Test and Control, were compared statistically using ANOVA Test, it was found that the difference between the Mean (Â± SEM) value of Test and Control groups in each parameters at the end of the study compared with baseline was significant (p<0.05).

Conclusion: In this study it was concluded that the test drug was effective in reducing fasting blood glucose, post prandial blood glucose and HbA1c significantly in diabetic participants after 12 weeks of treatment. It was also observed that the Unani formulation was safe and showed no side effect.
Ref No: rgMnbbGo

Title: System pharmacology-based strategy to decode the synergistic mechanism of Honghefujie lotion for treating vaginitis.

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Abstract:

Honghefujie lotion is made from hawthorn nucleus, and refined by modern preparation technology such as distillation. It has a remarkable therapeutic effect on vaginitis, but due to its complex targets, the research on its mechanism has not been fully elucidated. The study focus on the relationships between anti-microbial and anti-inflammatory effects of acid compounds in Honghefujie lotion. The network pharmacology method was used to study the mechanism of treating vaginitis of the acid compounds in Honghefujie lotion. Targets of acid compounds in Honghefujie lotion were screened by DDI-CPI-PreSA and TTD platforms. The targets were analyzed by Gene Ontology and Kyoto Encyclopedia of Genes and Genomes pathways. Cytoscape software was used to construct the network of Component-Target-Pathway. The protein-protein interaction network was constructed by STRING. Molecular docking was employed to verify the combination of the key proteins and the candidate components. Six acid compounds in Honghefujie lotion were required, mainly consisting of oleanolic acid, gallic acid and protocatechuic acid. Two hundred and sixty target genes were found and the important target genes were EGFR, CDC42, ZO-1 and MAPK1. These targets were mainly enriched in MAPK, NF-ÎºB, TLR and other signaling pathways. These results reveal the possible mechanism of the treatment of vaginitis of acid compounds in Honghefujie lotion. This study provides a theoretical basis for further experimental research on medicinal materials and its mechanism.

Ref No: xNqosu1a

Title: Evaluation of antiasthamatic and anti-cholinergic activity of ethanolic extract of pectonagrandis bark

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Abstract:

Asthma is a chronic disease that affects approximately 300 million people worldwide. Tectonagrandis Linn bark, also known as Teak (English), is traditionally used to treat asthma. However, the scientific data on anti-asthmatic and anti-Cholinergic of this plant has got little attention. An attempt has been based on ethanolic extract of bark of Tectonagrandislinn
shown a tremendous effect on asthma when comparative study was done with normal and treated group. The anti-asthmatic activity of a 50% aqueous ethanol extract of dried and fresh bark, and the volatile and fixed oils of Tectonagrandis was evaluated against histamine and acetylcholine-induced preconvulsive dyspnea (PCD) in guinea pigs fasted for 24 h were exposed to an atomized fine mist of 2% histamine dihydrochloride aerosol (dissolved in normal saline) using nebulizer at a pressure of 300 mm Hg in the histamine chamber (24 x 14 x 24 cm, made of per perplex glass). Guinea pigs exposed to histamine aerosol showed progressive signs of difficulty in breathing leading to convulsions, asphyxia and death. The time until signs of convolution appeared is called preconvulsion time (PCD). By observation experience was gained so that the preconvulsion time can be judged accurately. As soon as PCD commenced, animals were removed from the chamber and placed in fresh air to recover. In the present experiments the criterion used was time for onset of dyspnea and percent protection was calculated. Those animals which developed typical histamine asthma within 3 min were selected out three days prior to the experiment and were given habituation practice to restrain them in the histamine chamber. They were divided in groups Mepyramin(8 mg/kg) and polyherbal formulation (300 mg/kg) were administered intraperitonially 30 min prior to exposure. Animals, which did not develop typical asthma within 6 minutes, were taken as protected.

Keywords: Anti-Asthmatic, Anti-Cholinergic, TectonagrandisLinn bark extract.

Sub-code-1314

Ref No: APLvFLj1

Title: Traditional herbs: An evolution from treasury of ancient remedies to future therapeutic hope for brain disorders.

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Abstract:

Background: Brain disorders are serious public health challenge globally, entrapping more than 60 million of Indian population. Itâ€™s spectrum includes Alzheimerâ€™s disease, Parkinsonâ€™s disease, depression, epilepsy, anxiety, etc. Current conventional synthetic drugs are expensive and associated with many side effects that leads to poor patient compliance. Hence, it prompted to look back into our year long ancient traditional herbs as a future perspective in therapeutics of brain disorders. Extracts and constituents of following plants are found to be neuroprotective:

1. Shankhpushpi [Convolvulus pluricaulis] and curcumin: promising in Alzheimerâ€™s disease.
2. Tulsi [Ocimum sanctum]: neuroprotective in epilepsy.
3. Ashwagandha [Withania somnifera]: enhances memory in people with mild cognitive impairment as well as improves attention and information processing speed.
5. Coriandrum sativum[DHania]: beneficial against motor changes and oxidative damage in rat progeny after maternal exposure to methylmercury.
6. Onion [Allium cepa]: used in neurodegenerative diseases.

These medicinal herbs modulate the neuroendocrine-immune systems and are rich sources of antioxidants and anti-inflammatory compounds.

Aim of the review: To provide perspectives to use traditional herbs as template for drug development by developing more attractive pharmaceuticals of plant origin for brain disorders.

Materials and methods: The relevant information in the present review was gathered from various research and review articles on animal and human studies in worldwide accepted scientific databases via electronic search [PubMed, Elsevier, SpringerLink, Wiley Online, and Google Scholar]

Results: Comprehensive analysis of the above mentioned databases and other sources confirmed that crude extracts and isolated constituents of traditional herbs are neuroprotective in brain disorders with no or minimal side effects.

Conclusions: Natural plant extracts or their bio-active compounds could be developed as promising leads in drug development and management of brain disorders

Keywords: brain disorders, traditional herbs, future therapeutics

Sub-Code-1315
Ref No: 2R6kuKsF

Title: High Pressure Supercritical CO2 extraction of triterpenes from Ganoderma lucidum fruiting bodies and the antitumor effects.

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Abstract:

Triterpenoids are one kind of anti-tumor active ingredients from Ganoderma lucidum. How to improve the extraction efficacy of triterpenoids from Ganoderma lucidum and the antitumor activity remain a critical concern. In this study we investigated the effects of different extraction pressures of supercritical CO2 on the content of triterpenoids and the antitumor activity of the extracts from Ganoderma lucidum fruiting body and its action mechanism. High-pressure supercritical CO2 was used to extract triterpenoids from Ganoderma lucidum fruiting body. MTT assay, colony formation, flow cytometry in vitro and xenografts in vivo were used to investigate antitumor effects of the extracts on hepatoma QGY7703 and SK-Hep1 cells. Immunoblot was used to observe effects of the extract on cell proliferation signal. With the increase of extraction pressure, the content of Ganoderma lucidum triterpenes and their antitumor activity in the extracts were raised. All extracts could inhibit cell proliferation, arrest cell cycle in G2/M phase, and induce apoptosis in liver cancer cell lines QGY7703, SK-Hep1i½hEor which the extract in 85 MPa pressures (G85) was the strongest, which was
associated with its significant inhibition of Ras/Raf/Mek/Erk signaling pathway. The antitumor active ingredients of G85 were mainly present in the neutral triterpenoids component. In conclusion, we found that high-pressure supercritical CO2 extraction could enrich antineoplastic triterpenoids from Ganoderma lucidum fruiting bodies. With 85 MPa extracting pressure, the extraction of antineoplastic triterpenoids was substantially saturated. The antitumor activity of extract G85 was associated with its inhibition of Ras/Raf/Mek/Erk signaling pathway in liver cancer cells.

**Sub-Code-1316**

**Ref No: 0gkoFN7G**

**Title:** Studies on the Neuroprotective Compounds of Hypericum ascyron

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**Abstract:**

The genus Hypericum, a genus in the family Guttiferae, has historically been used as a traditional medicine in some areas of the world. It contains abundant PPAPs which were reported to possess various structures due to substitutions with prenyl, geranyl, and acyl groups, as well as even more highly substituted moieties. This class of compounds also exhibits extensive bioactivities, such as antidepressant, antibacterial, neuroprotective, anticancer, antiviral. With complex structures, promising bioactivities and challenging syntheses, PPAPs have received considerable enthusiastic interest from the scientific community.

Silica gel, preparation of TLC, Sephadex LH-20, RP-18 silica gel HPLC and some other methods were used to conduct isolation of petroleum ether layer from 95% EtOH extracts of the aerial parts of Hypericum ascyron. And the isolates were identified by MS, HR-MS, UV, IR, 1D NMR, 2D NMR, ECD and other spectral spectra. Finally, a total of 55 aimed compounds that named PPAPs were obtained, we identified the structures of 51 compounds with skeleton types. It is gratifying to find that 20 of them are new compounds.

The result showed that compounds 4*, 8*, 9*, 11*, 15*, 16*, 21 from Hypericum ascyron had obvious neuroprotection at 10 µM. Additionally, the mentioned compounds from Hypericum ascyron were also evaluated for neuroprotective effects on the glutamate-induced toxicity in SK-N-SH cells but it is unfortunately that only two compounds showed some activity under this model, but they showed no activity when conducted the secondary screening.

**Keywords:** Hypericum™PPAPs™neuroprotective effects

**Sub-Code-1317**

**Ref No: yOupjnID**

**Title:** Exploring the Mechanism of Chinese Medicine Based on "Holistic View"

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Abstract:

Traditional Chinese medicine (TCM) originates from nature, so its mechanism for treating diseases must be different from chemical drugs. The bioavailability of active ingredients of TCM is low, and their affinity is weak. For Chinese medicine researchers, its mechanism of action has always been an important part of their continuous research and exploration. In order to adapt to the environment, TCM has evolved to produce a variety of components to meet the many targets of the organism, with better biocompatibility. The formulation of a series of hypotheses such as "multi-components and multi-targets" has enabled the research of TCM to be continuously enriched and developed. However, many phenomena related to the use of TCM still cannot be better explained by existing theories. For example, how do the trace active components work? What is the mechanism of action in low blood concentration? Based on existing research results, we explored the molecular mechanism of the diversity of TCM from the perspective of "holistic view". Such a thinking mode may provide new insights and considerations for the study of TCM, thus innovating methods for the study of pharmacodynamics of TCM.

Sub-Code-1318

Ref No: w7R0pFE2

Title: The effect of hydro ethanolic extract of Syzygium cumini seed on blood glucose, insulin resistance and serum lipid profile in high fat diet /streptozotocin induced Type II diabetes albino wistar rats.

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Abstract:

Syzygium cumini or Eugenia Jambolana Lam is a traditional medicinal plant very native to the Indian and Asian sub-continent. It is commonly known as black plum or Jamun. Various plants parts of the tree are known for ethnomedicinal uses, and in particular, the fruits of Jamun tree are well known for anti-hyperglycemic activity. In this study, anti-hyperglycaemic, insulin resistance, and serum lipid-lowering potential of standardized hydroethanolic extract of Syzygium cumini seeds (SC-HE) were evaluated in high-fat diet and low dose streptozotocin-induced diabetic rats. The adult male Wistar albino rats were made diabetic by feeding a high-fat diet for 12 weeks, followed by a single intraperitoneal injection of streptozotocin (35 mg/kg, body weight). They were treated orally with 100, 200, 400mg/kg SC-HE extracts and pioglitazone 10mg/kg rat body weight once daily for twenty-one days. After 21 days of treatment, the blood samples were assessed for blood glucose, serum insulin, and lipid profiles. The insulin resistance and pancreatic beta-cell function were calculated using HOMA-IR and HOMA$^{\beta}$ indices, respectively. The SC-HE extract at doses of 100 mg/kg and 200 mg/ kg showed a statistically significant reduction in fasting blood glucose, improved serum insulin and reduction in HOMA-IR and increase in HOMA- $^{\beta}$ profile compared to a diabetic control group. The overall effect was comparable to standard drug pioglitazone (10mg/kg). The 400mg/kg dose group of SC -HE extract showed similar serum lipid-lowering profile as that of standard drug pioglitazone used in this study. The results indicate that the SC-HE extract possesses beneficial effect in controlling fasting glucose and insulin resistance.
Title: Evaluation of hepatoprotective activity of ethanolic extract of leaves of Toona ciliata M. Roem in albino rats

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Abstract:
Liver, being the major drug metabolizing and detoxifying organ in the body, is subjected to injury from enormous array of therapeutic and environmental agents. Paracetamol is a classic predictable hepatotoxin, most commonly used as analgesic and antipyretic. Herbal drugs have gained importance and popularity in recent years as a consequence of their efficacy, safety and cost effectiveness. One of the comprehensive examples is silymarin isolated from Silybum marianum used in the treatment of liver diseases. The present study was undertaken to evaluate the hepatoprotective effect of ethanolic extract of leaves of Toona ciliata M. Roem (EETC) in paracetamol induced hepatotoxicity in albino rats. Thirty six albino rats were divided into six groups of six animals in each. All the drugs were suspended in 1% gum acacia in distilled water and administered orally in equal volumes of 0.5 ml/100gm. Different groups were treated as-Normal control group and hepatotoxic control group with 1% gum acacia, standard group with silymarin (200 mg/kg) and test groups with EETC at 100,200 and 400 mg/kg respectively for 7 days. All the groups except normal control group were given paracetamol (2g/kg) orally on 7th day. Blood was collected after 24 hours and liver enzymes (SGPT, SGOT, ALP, total bilirubin and total protein) were estimated by enzymatic method using semi-autoanalyser. Liver specimens were sent for histopathological examination. The data was analysed using one-way ANOVA followed by Bonferroni test. P value less than 0.05 was considered statistically significant. Results showed that treatment with EETC significantly (p<0.001) lowered the elevated liver enzymes in a dose dependent manner and the hepatoprotective activity of EETC (400mg/kg) was comparable to standard drug silymarin. Histopathological findings also confirmed the protective effect of EETC on hepatocellular damage. So, it could be concluded that ethanolic extract of leaves of Toona ciliata M. Roem exhibits hepatoprotective activity.

Key words: Toona ciliata M. Roem, paracetamol, hepatoprotective activity, silymarin

Title: Effect of Cinnamomum zeylanicum bark on blood sugar in albino rats

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Abstract:
Diabetes mellitus is a spectrum of metabolic disorders arising from myriads of pathogenic mechanisms, all resulting in hyperglycaemia. Drugs which aim at improving insulin availability eg. sulfonylureas and meglitinide analogues are associated with the dangers of hypoglycaemia, weight gain and a concern about premature atherosclerosis due to hyperinsulinemia. In the recent years there has been an exponential growth in the field of herbal medicine for the treatment of variety of ailments. The present study was conducted to investigate the effect of ethanolic extract of Cinnamomum zeylanicum bark (EECZ) on blood sugar in albino rats. Animals of either sex were divided into five groups (n=6) and kept on overnight fasting and hyperglycaemia was induced in all the animals by glucose, adrenaline and dexamethasone except in group I (normal control). Different groups were treated as follows- group I (normal control) and group II (diabetic control group) with 2% gum acacia(1ml/100g p.o.), group III (standard group) with glimepiride( 0.2 mg/kg p.o.) and group IV and V (test groups) with EECZ (500 and 750 mg/kg respectively p.o.). Blood glucose level was estimated at fasting and after stipulated time of treatment. Data were analysed using one way ANOVA followed by Bonferroni test. P value less than 0.05 was considered significant. Result showed that oral glucose, dexamethasone and adrenaline elevated blood sugar level significantly (p<0.001). EECZ at 500 and 750 mg/kg significantly (p<0.001) lowered blood sugar in oral glucose induced hyperglycaemic rats. EECZ at 750 mg/kg significantly lowered blood sugar in dexamethasone (p<0.01) and adrenaline (p<0.05) induced hyperglycaemic rats. However EECZ was not as effective as standard drug in lowering blood sugar. So, it could be concluded that ethanolic extract of Cinnamomum zeylanicum bark exhibits hypoglycemic activity.

Key words: Diabetes mellitus, Cinnamomum zeylanicum, glimepiride.

Sub-Code-1321

Ref No: 9UJiGS9f

Title: Nutritional, Preliminary Phytochemical and in-vitro antifungal profile of Elephant Garlic Corms from Himalayas.

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Abstract:

Elephant garlic (Allium ampeloprasum var. ampeloprasum) also known as â€˜great-headed garlicâ€™™ is one of the variant of garden leek. Elephant garlic bulbs have been found to develop round hard shell encapsulated corms, also called as garlic corms after 2 years for maturation. These corms have been observed attached to the basal plate of garlic bulb. Corms are an underground modification of stem developed to store food to pass unfavorable climatic conditions by the plant. It is easily palatable as compare to normal garlic as it is mild in taste and flavor. Traditionally elephant garlic corms are being used in salads, culinary and for various medicinal purposes. Since this species belongs to Allium genus it is expected to be rich in organo-sulfur phytochemicals. However, there is a dearth of scientific knowledge on nutritional, phytochemical and medicinal importance of elephant garlic corms. Therefore, this study was sought to examine the nutritional profile, preliminary phytochemical profile and
TLC based fingerprinting with different detection reagents of these corms. Raw aqueous extract of garlic corms has been further investigated for its antifungal activity against three Candida strains viz Candida albicans, C. tropicalis and C. glabrata. Qualitative preliminary phytochemical evaluation has revealed the presence of glycosides, alkaloids, carbohydrates, and saponins in aqueous extract of elephant garlic corms. Further TLC based phytocomponent profiling showed the availability of high concentration of polar phytocompounds like alliin and S-allyl-L-cysteine. Aqueous extract of corms was found effective against C. albicans, C. tropicalis and C. glabrata at a concentration of 40mg/ml producing a zone of inhibition of 13.3 mm, 12.7 mm and 12.7 mm respectively, up to 24 hours. Corms extract activity was maintained at the same concentration up to 48 hours showing a zone of inhibition of 10.7 mm, 11.0 mm and 11.7 mm against C. albicans, C.tropicalis and C. glabrata respectively. Maximum zone of inhibition was observed at a concentration of 200mg/ml. Therefore, in the present study of elephant garlic corms, a beneficial effect attributed, in particular, enrichment of polar organosulfur compounds and saponins which could be responsible for the sustainable antifungal property. Hence, elephant garlic corms and its preparation can be exploited further for its potential bioactive phytocompounds and their therapeutic applications.

Sub-Code-1322

Ref No: CkMqxNeq

Title: Evaluation of hypolipidemic activity of hydroalcoholic extracts of Terminalia Chebula in atherogenic animal models.

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Abstract:

Background: Hyperlipidemia is characterized by an abnormal elevation in the major circulatory lipid and lipoprotein levels. Hyperlipidemia is the greatest risk factor for coronary heart decease. Terminalia chebula (Family: Combretaceae) is an important plant used traditionally for medicinal purposes. Hyperlipidemia was induced by treating orally with butter.


Materials and Methods: Hydroalcoholic extract of each fraction of plant fruit powder was prepared by maceration method. Powdered plant material was soaked in mixture of ethanol and water (60:40) at room temperature for 24 hours in a separate beaker and then filtered using Whatman no.1 filter paper. The filtrate was evaporated at 55°C in hot air oven. The acute toxicity study (OECD 423) confirmed that the extract was safe at 5000 mg/kg b.w. in female albino Wistar rats. Butter was used as the hyperlipidemic inducer in animal. 400mg of butter/Kg body weight dissolved in 10ml of buffered saline was used for the induction of hyperlipidemic rats. Group I: Control group - 0.5% sodium carboxy methyl cellulose, Group II: High fat diet group - butter 400mg/kg b.w., Group III: Standard group - Lovastatin (dose of
75 mg/kg body weight per oral) + butter 400mg/kg b.w And Group IV: Test - Terminalia chebula extract + butter 400mg/kg b.w each group containing 5 rats. The animals of all the groups except control group received butter diet on all days with the test drug. The animals were given the drugs orally once a day for 45 days. The blood samples were collected on day 15, 30 and 45 after overnight fasting.

Results: Hydroalcoholic extract of Terminalia chebula showed significant reduction in total cholesterol, triglycerides, total protein and elevation of high density lipoprotein cholesterol. Hydro alcholic extract of Terminalia chebula was found to possess significant hypolipidemic activity.

Conclusion: The hydroalcoholic extract Terminalia chebula exhibits antihyperlipidemic potential, thus confirming the veracity of the folklore claims of Terminalia chebula scientifically for its use in the treatment of hyperlipidemia.

Sub-code-1323
Ref No: bhmG4PhV
Title: Pharmacovigilance Approach to Tropical Products of Natural Drugs and Supplements.
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Abstract:
No medicinal product is safe whether it is of streamline medicine or belongs to traditional system of medicine. Tropical products of natural drugs and supplements, no matter how common itâ€™s clinical uses, have the potential to cause harm. These tropical products of natural drugs and supplements are in fact widely used in health-care in both developed and developing countries. Traditional practitioners argue that medicines used and prescribed by them, do not need any clinical testing as they are being used since ages. They claim that if medicines are prepared as per traditional formularies, then they wonâ€™t pose any harm. But in reality, all medicines are not prepared as per standard format. In this era of competition and also unavailability of unfinished quality raw material, all medicines are not manufactured as per standardization levied by drug regulatory agencies. Any deviation from official pharmacopoeias, may lead to cause adverse reactions. In addition, in recent years, there have been several other high-profile herbal safety concerns that have had an impact on public health, and there is increasing recognition of the need to develop Pharmacovigilance systems for medicinal herbs and tropical products. Pharmacovigilance should be a priority for every country with a public health disease. The focused Pharmacovigilance initiatives for the safe treatment of tropical diseases such as malaria, leishmaniasis and schistosomiasis, involving the administration of medicines to large communities are being implemented within the same population with little knowledge of, or regard to, how these various medicines could interact with each other. Moreover, Pharmacovigilance approach to tropical herbal products including natural substances and supplements and monitoring the safety of herbal medicines presents unique challenges. This paper aims to provide a critical overview of the current state of
Pharmacovigilance activities for some tropical diseases and herbal tropical medicines at national and global levels.

Sub-Code-1324
Ref No: YUC0aeOd
Title: To evaluate the anti-inflammatory activity of ethanolic leaf extract of Moringa Oleifera plant in albino wistar rats
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Abstract:
Introduction: Moringa Oleifera is widely found in Asian subcontinent and it has been used as an analgesic and anti-inflammatory in Indian folk medicine. In this study we compared the anti-inflammatory effects of Moringa Oleifera Ethanolic extracts in experimentally Carrageenan induced model of inflammation in rats. Material and methods: A total of 30 Male Albino Wistar sex weighing 150-200g (n= 30) were used. Ethanolic extracts of Moringa Oleifera Leaf [eemo] were prepared with the help of soxhletâ€™s apparatus. The anti-inflammatory activity was studied using carrageenan induced paw edema method. statistical analysis was performed using one-way analysis of variance (Anova) followed by post hoc dunnettâ€™s test. P < 0.05 was considered statistically significant. Results: In carrageenan induced paw edema method, moringa oleifera treated groups demonstrated dose dependent decrease in paw edema compared to control group. Conclusion: We can be conclude that the Ethanolic Extracts of Moringa Oleifera Leaf possesses anti-inflammatory activity.
Keywords: Moringa Oleifera, Carrageenan, Anti-Inflammatory

Sub-Code-1325
Ref No: AIPYWWcJ
Title: In vitro antibacterial effect of Moringa Concanensis Nimmo leaves extract on mastitis pathogens.
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Co-author: Tapan Kumar Mandal (Professor), Kunal Batabyal (Assistant Professor, Department of veterinary Microbiology)
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Abstract:
Plants have served for millennia as a useful source for traditional medicines. Historical records and contemporary field research of ethnobotany show their significance in traditional infectious disease therapy. Plants, however, make up only a small proportion of the present repertoire of
antibacterial drugs approved by the FDA. Moringa concanensis Nimmo is a tree that belongs to the Moringaceae family and has potent antibacterial activities.

In this study, the acetone extract of the leaves of Moringa concanensis Nimmo was tested for antimicrobial activities against Gram \(-ve\) Staphylococcus aureus and Gram \(+ve\) Escherichia coli using Kirby-bauer disc diffusion method. For antibacterial analysis, concentrations of 25, 50, 100, 200, 300 and 600 mg/ml were prepared from the leaves. Sterile nutrient agar plates were prepared and streaked with the test culture. Then the disc was applied aseptically and incubated at 35\(\pm\)20C for 18 hrs. The diameters of the zone of inhibition were measured using a meter rule. Moringa extracts have had an effect on bacterial growth on the agar with variable inhibition zone (0 to 11 mm) depending on the type of bacteria and extract concentration. From the dose-dependent study, the acetone leaf extract was found to have a greater inhibitory impact at a greater concentration.

Sub-Code-1326

Ref No: 8U1ij6bU

Title: Lucas Indica variety Nagalapuramiana \(\hat{a}\)\(^\text{e}\) shows protective effect for treatment of Diabetes and its complications.

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Abstract:

Introduction: Diabetes mellitus is an endocrinological disorder characterized by increased blood glucose levels associated various complications such as neuropathy, retinopathy, cardio vascular complications etc. Conventional agents are being used to control diabetes however associated with side effects and relatively expensive. In this context there is a vast necessity for alternative and cost-effective treatments like medicinal plants. As there is need to completely validate the anti-hyperglycemia activity of medicinal plants. One among such plant is Lucas Indica variety Nagalapuramiana is a medicinal plant described in ancient texts with desired anti hyperglycemic activities, reducing diabetic associated complications owing with fewer side-effects and economical. Present study focused on In vitro and In vivo evaluation of Lucas Indica whole plant for anti-diabetic activity and protective role Lucas Indica for diabetic complications in STZ (streptozotocin) induced diabetes in Sprague Dawley (SD) rats.

Proposed Objectives:

I. Extraction and phytochemical evaulation of Lucas indica var.Nagalapuramiana

II. In vitro antidiabetic studies of Lucasindica var.Nagalapuramiana by biochemical parameters

III. In vivo antidiabetic studies of Lucasindica var nagalapuramiana in streptozotocin (STZ) induced diabetic animal models
Methodology: Extraction of Lucas indica var. Nagalapuramian was standardized successfully by cold maceration method. Bioactive compounds of the above plant were evaluated by GCMS, NMR and LCMS, as a part of Phytochemical analysis.

Invitro biochemical parameters including antioxidant profile has performed by DPPH radical scavenging method.

Invivo anti diabetic activity of above plants extracts has studied in streptozotocin induced diabetic animal model.

Induction of diabetes in Sprague dawley (SD) rats diabetes was induced by single administration of STZ at the dose of 55 mg/kg, intraperitoneal route and 48h after the STZ injection blood glucose levels were measured by glucometer. After 5 doses of STZ administration, the blood glucose levels were recorded every 3rd day till 21st day after collecting the blood drop from tail vein.

Evaluation of protective effects of Lucas indica var. Nagalapuramian against of STZ induced type 1 diabetes animal model

Sprague dawley rats were used for STZ induced type 1 diabetes and for evaluation of protective effect of Lucas indica var. Nagalapuramian. Treatment of Lucas indica var. Nagalapuramian were administered daily at the dose 0.5 mg/kg by intraperitoneal route and continued till 21 days. The therapeutic antioxidant potential of Lucas indica var. Nagalapuramian in streptozotocin induced diabetic animal model in Sprague dawley were assessed on body weight, pancreas weight, MDA (Malondialdehyde), nitric oxide and GSH (Glutathione) levels, antidiabetic parameters like blood glucose levels, % diabetic incidences and histopathological changes were observed.

Conclusions: This study has utilizes novel biochemical, pharmacological techniques in the treatment of Diabetes mellitus. The results from this investigation will provide significant insight protective effect of the Lucas indica var. Nagalapuramiana for Diabetes and its complications.

Sub-Code-1327

Ref No: bJFPQDva

Title: Phytochemistry and pharmacology of Terminalia Chebula: An update

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Abstract:

India is rich source of medicinal plants, which are being used in treatment of various diseases. Many traditional systems of medicine are using these medicinal plants as important treatment option in various forms. Terminalia chebula is one of the important medicinal plant mentioned in the Ayurveda. Terminalia chebula fruit is a part of triphala churna, one of the important formulations in Ayurvedic system of medicine. The present review focuses on phytochemistry
and pharmacological effects of Terminalia chebula. Literature search was performed using various dataset like PubMed, EBSCO, proQuest, Scopus and selected websites including the National Institutes of Health (NIH) and the WorldHealth Organization (WHO).

Terminalia chebula shows presence of tannins, other important phytoconstituents present in plantaregallic acid, ellagic acid, chebulinic acid, ethyl gallate, chebulin, tannic acid, arjunglucoside I, arjungenin, punicalagin, terflavin A and luteolin.

The plant has reported for antiseptic, laxative, hepatoprotective, antidiabetic activity. It is also used I treatment of bronchitis and upper respiratory tract infections. Half ripe fruits are used as purgative, and ripe fruit as astringent, tonic, expectorant, antipyretic, diarrhea, dyspepsia, biliousness cough, allergic eruptions and leprosy. The dry powder form of fruit is used for hoarseness of voice, emesis and worm infestation, anthelmintic, useful in hepatitis, asthma, piles and eye diseases. Kernels of Terminalia chebula have been reported as anodyne. Kernel oil has reported for its purgative action. Gum of the bark is painkiller and laxative.

In conclusion, Terminalia chebula contains important phytochemicals like tannins, ellagic acid and gallic acid. The plant has a wide range of pharmacological effects

**Sub-Code-1328**

Ref No: bwIQsUT8

**Title:** A comparative study of Trikatu choorna and Shunti choorna for their digestive stimulant activity in experimental animals

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**Abstract:**

Background: Trikatu choorna (TC) and Shunthi choorna (SC) is the simplest of Ayurvedic formulation used in India, known for its digestive stimulant activity. TC is a mixture of three powdered herbs, namely: Pippali, Maricha and Shunthi. The present study provides the scientific justification for its digestive stimulant activity.

Aim: Study aims at preparation, standardization and evaluation of digestive stimulant action of SC and TC in experimental rats.

Procedure: The study involved estimation of moisture content, determination of total ash, acid-insoluble ash, alcohol soluble extractive and thin Layer Chromatography. Preclinical evaluation was performed using male Wistar rats (150-230 g) that were randomly divided into 4 groups and treated, Normal (no treatment), Control (1% CMC), SC (540 mg, p.o), TC (540 mg/kg, p.o), for a period of 7 days. On 8th day, all the rats were sacrificed and blood was collected and analysed for alkaline phosphatase, alpha amylase, total Protein, lipase. Intestinal tissue was isolated and analysed for above mentioned enzymes.
Result: The comparative study between SC and TC showed that SC was significantly active in serum alkaline phosphatase (p<0.05) and serum alpha amylase (p<0.001) while TC showed significant elevation in serum total protein(p<0.01) and mucosal lipase (p<0.05).

Conclusion: TC showed most digestive stimulant action on liver to release ALP. Digestive stimulant action was significantly observed in small intestinal mucosa in comparison to serum. It was established that TC is effective in liver pathology and SC is effective in pancreatic pathology.

Sub-Code-1329

Ref No: wE1KxLnw

Title: In-vitro aldose reductase inhibitor activity of selected plants

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Abstract:

Diabetes is the most common disorder which is leading to increased mortality because of its complications. Aldose reductase (AR), is a key enzyme in the development of major diabetic complications like diabetic retinopathy, neuropathy and nephropathy etc. So AR inhibitors may be useful agents to prevent and reduce the effects of diabetic complications. There are many synthetic AR inhibitors available but their usage is limited because of their adverse effects. In this regard, it will be interesting to obtain AR inhibitors from natural sources which generally have low or no side effects. In this study, Azadirachta indica, Piper nigrum and Murraya koenigii plants were selected for screening there in vitro AR inhibitory activity. The methanolic extract of these plants were assayed for AR inhibitory activity as per the method described by Hayman and Kinoshita. In vitro aldose reductase inhibitory activity was carried out using rat eye lens AR, rat kidney aldose reductase (RKAR) and human recombinant aldose reductase (HRAR) methods. Azadirachta indica, Piper nigrum and Murraya koenigii extract and reference quercetin shows IC50 of 75.79 Â± 0.48, 80.82 Â± 0.57, 84.31 Â± 0.99 and 4.65 Â± 0.05 Âµg/ml respectively on rat lens aldose reductase. Azadirachta indica extract (IC50 = 66.47 Â± 0.22 Âµg/ml) showed better inhibitory activity on rat kidney aldose reductase (RKAR), while Murraya koenigii (IC50 = 73.22 Â± 0.99 Âµg/ml) exhibited less activity and Piper nigrum showed IC50 of 70.81Â±0.67 Âµg/ml while standard quercetin showed IC50 of 5.61Â±0.02 Âµg/ml. The IC50 values of human recombinant aldose reductase (HRAR) inhibition potencies of Piper nigrum, Azadirachta indica, and Murraya koenigii and standard quercetin were found to be 50.86 Â± 0.27, 65.60 Â± 0.77, 45.86 Â± 0.52 and 2.79 Â± 0.21 Â¼M, respectively. In conclusion, in vitro bioassays utilizing RLAR and RKAR and HRAR were carried out and found that Azadirachta indica having more potential AR inhibitory activity in both rat lens and rat kidney homogenate when compared to another two plants. Murraya koenigii shows good inhibitory activity on human recombinant aldose reductase when compared to other plants.

Key words: Aldose reductase, Human recombinant aldose reductase, Kidney homogenate, Lens homogenate.
**Title:** Characterisation of Saraka asoca flower (Roxb.) Wilde with its Antidepressant Activity in Animal model.

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**Abstract:**

Ethanopharmaco logical relevance: Saraka asoca (Roxb.) Wilde (Ashoka) has been widely used in India as uterine tonic, Grahi, Varnya, Apache hara, Hrudya, Gulmahara, Shulahara in Ayurvedic Medicine.

Aim of study: The prevailing study was aimed to demonstrate the active chemical constituents of the Saraka asoca flower (Roxb.) Wilde and to assess the impact of the ethanolic extract of Saraka asoca flower (ESAF) on acute restraint stress (ARS)- induced depression

Materials and methods: ESAF were analytically characterized by Liquid Chromatography-Mass Spectrometry (LC- MS) and High-performance liquid chromatography (HPLC). Behavioral animal models, namely forced swim test (FST) and tail suspension test (TST) were employed to evaluate the effect of depression among albino mice.

Statistical Analysis: The results were expressed as mean ± SEM. Statistical analysis was done by One-way ANOVA test followed by post-hoc Dunnett's multiple comparison tests p<0.05 was considered statistically significant.

Results: Characterisation of methanol fractions of ESAF showed the presence of bioflavonoids namely, myricetin, quercetin, and rhamnazin. In animal models, ESAF showed significant reversed the acute restraint stress (ARS) induced depressive-like behavior in mice studied by the behavioral despair models, viz. FST and TST (p<0.05) as depicted by decreased the time of immobility.

Conclusions: EASF showed the presence of various bioflavonoids like Myricetin, quercetin, and Rhamnazin. ESAF exhibited significant antidepressant activity in the mice screening models which may be attributed to the presence of bioactive constituents.

**Keywords:** Saraka asoca flower, Acute Restraint stress, immobility.

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**Title:** Bioprospecting the potential lead molecule from traditional medicine against cancer

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Abstract:

Cancer is the leading cause of mortality rate worldwide. Most of the currently available drugs are costly and have certain side effects. The ability of plants to influence programmed cell death in cancerous cells has gained much attention recently. Hence, identification of compounds from plants that specifically induce apoptosis or autophagy in cancer cells but not in normal counterparts will be an exciting research area. Here, in the present study we have explored the flora of the Indian tradition system for their anti-cancer effect. The selected plants reported to possess various pharmacological properties such as anti-inflammatory, antioxidant as well as wound healing properties. The present study focus on the various phytochemicals isolated from the traditional medicine which have been explored as anticancer agents with in vitro and in vivo approach (Nath et al., 2015 & Nath et al., 2016).

Sub-Code-1332

Ref No: Bi0KG5EL

Title: Chemical and pharmacological evaluation of ayurvedic products containing Nag bhasma (lead) available in the market on CNS of rats

Author Name: Dr. Madhusudan Joshi,

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Abstract:

There is need to quantify the ayurvedic medicines for heavy metal content and help the community of the toxicity associated with these medicines through. Ayurvedic medicines could be associated with toxicity and there is a specific branch within Ayurveda that deals with toxicity known as vishagarvajrodhika tantra.

EkangveeRas is one of the Herbomineral medicine which showed excellent results in Pakshaghata. Pakshaghata is characterised by loss of functions and mobility of half of the body either right or left, pain and disturbed speech. It is used in the treatment of paralysis, sciatica, facial palsy etc. This medicine contains heavy metal ingredient, hence should only be taken under strict medical supervision. It relieves pain and stimulates inactive or underactive nerves and nervous system.

Mahavatvidhwans Rasa tablets is used in the Ayurvedic treatment of Vata disorders, neuralgia, aches and pains, abdominal colic, bloating, epilepsy, paralysis, and splenic disorders and hemorrhoids. Practitioners use this product for the treatment of Rheumatoid arthritis, osteo arthritis. Neuropathy, nerve irritation, neurological pains, sciatica, cervical spondylosis etc. Nervine tranquilizer.

Vasant Kusumakar Ras is a well-known poly metallic preparation marketed worldwide for diabetes and associated symptoms like general weakness, nervous weakness, peripheral neuritis, cataract and repeated infections. It is a composite of Swarna, Rajat, Vanga, Naga, Lauha, Abhraka, Pravala and Mukta Bhasma, along with Rasa Sindoor. The metals in the bhasmas are proposed to be available as nanoparticles and are taken along with milk, butter, honey or ghee; thus, making the metals easily assimilable, eliminating their harmful effects and enhancing their biocompatibility. But recent reports have expressed serious concerns about such preparations.
containing heavy metals. Nanoparticle preparations of heavy metals can be toxic to kidney if it is not regulated with respect to its surface chemistry and dosage.

At the end of our study, the results of the experiments on the test substances were analysed to obtain the following results. On light and dark model, we found that, compared to other organ systems, the nervous system appears to be the most sensitive and chief target for lead induced toxicity. Both the central nervous system and the peripheral nervous system become affected on lead exposure. The effects on the peripheral nervous system are more pronounced in adults while the central nervous system is more prominently affected in children.

**Sub-Code-1333**

**Ref No: UtRQFdUg**

**Title:** A Review on Fenugreek - Trigonella foenum-graceum - Pharmacological applications and its adverse effects

**Author Name:** Rukmini Boyanapalli

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**Abstract:**

Introduction: Fenugreek - Trigonella foenum-graecum one of the oldest a short-living annual applied medicinal herb belonging to Fabaceae family, extracted from dried seeds of its plant used as a herb, food, spice and traditional medicine around the world.

Aim: To know the pharmacological applications and adverse effects of fenugreek.

Review: Significant pharmacological and clinical evidence have highlighted the medicinal application of fenugreek as its extract showed excellent antidiabetic, antiobesity, antihyperlipidemic, anticancer, anti-inflammatory, antioxidant, antifungal, antibacterial, galactogogue and used to ease childbirth.

The pharmacological actions of fenugreek are attributed to diverse array of phytoconstituents like polysaccharides, saponins, alkaloids, steroids, phenolic acids, flavonoids, amino acids, lipids and hydrocarbons.

Trigonelline - most important metabolite of fenugreek, effective in treating diabetes and decreasing blood cholesterol.

Diasogenin - important compound in seeds of this plant, which is used in producing medicinal steroids.

4-hydroxysoleucine an amino acid derived from fenugreek appeared to stimulate the secretion of insulin and decrease blood sugar levels.

Disadvantages: Fenugreek when taken orally causes gas, bloating or diarrhea, headache, and a "maple syrup" odor in urine. It can cause nasal congestion, coughing, wheezing, facial swelling, and severe allergic reactions in hypersensitive people.
Fenugreek increases the potency of aspirin and other blood thinning agents like Warfarin which might increase the chances of bruising and bleeding. Fenugreek is a small plant with big benefits- for disease prevention and health promotion.

**Sub-Code-1334**

**Ref No: RasmJvYl**

**Title:** Effectiveness of fenugreek seed paste on dandruff scalp among 18-35 years aged women in Womenâ€™s Hostel, Vijayawada

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**Abstract:**

Introduction: Dandruff is the mild form of seborrhic dermatitis is an inflammatory skin condition that is characterized by flaking and shedding of dead scalp at an abnormally high rate.

Natural herbs are a good solution for dandruff and “Fenugreek” is a natural herb which helps in killing a type of fungus which causes dandruff. Fenugreek seeds are an extremely effective and powerful seed which fights with hair fall, baldness and hair thinning. Fenugreek seeds replenish hair growth and are a good source of nicotinic acid and protein, it also contains a large amount of lecithin which is a natural emollient and give power to hair and make them healthy and strong. It also moisturizes hair.

These seeds are primary fungus removing agents, When that is applied to the scalp the fungus that is growing on the scalp is removed, the dandruff becomes reduced it will act on the dandruff until it is gone completely.

**Aim:** To apply fenugreek seed paste on dandruff scalp and assess the effectiveness after application.

**Methodology:** SETTING: Womenâ€™s Hostel, Siddhartha medical college, Vijayawada. MBBS students, Interns and Post Graduate students with dandruff complaints are selected. The study was conducted for a period of three months on women with mild, moderate and severe stages of dandruff.

Sampling and sample size: The total number of samples for the study was 15 clients who were having dandruff from a prolonged period of time.

Inclusion Criteria: Women who are staying in hostel and Women who are having dandruff between 18-35 years of age.

Conclusion: Application of fenugreek seed paste is one of the non-pharmacological therapy can be performed anywhere, requires no special equipment, is non-invasive, cost effective. Hence it is natural herb and good solution for dandruff which helps in killing a type of fungus which causes dandruff.
Sub-Code-1335

Ref No: uPe9JcUV

Title: Therapeutic potentials of Withania somnifera in iron overload induced Infertility

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Abstract:

Withania Somnifera (Ashwagandha) a commonly used herb is reported in ayurvedic medicine for the treatment of male Infertility. There have been many reports for the use of drugs in ameliorating the male and female infertility. Withania somnifera was found to improve reproductive system of the male subjects by enhancing the semen quality, improving the enzymatic activity of seminal plasma and decreasing oxidative stress. Sperm count and motility can be increased by improving semen quality by the use of Withania somnifera which regulates reproductive hormone levels by inhibiting lipid peroxidation. Withania somnifera therefore is a potential treatment of male and female infertility caused by iron overload. Infertility is a worldwide problem caused due to hormonal imbalance, viral and bacterial infections or iron accumulation. Iron accumulation in reproductive organs is caused due to excessive dietary intake of iron, dysregulation of iron transporters, chronic blood transfusions, hemochromatosis etc. Iron accumulation in the reproductive organs cause problems like underdevelopment of sexual organs, dysregulation in the hormone production and infertility. Many synthetic drugs have been expended for the same, but the outcome is inconsistent and the cost of treatment is exorbitant. Due to these factors, herbal medicines have gained attention for the treatment of male and female infertility. The presented review will be able to discuss how iron overload leads to infertility in male and females; and the role of Withania somnifera as a medicinal herb in the treatment of Iron overload induced infertility.

Keywords: Ashwagandha; semen quality; antioxidant; Iron accumulation; amenorrhea; hypogonadotropic hypogonadism

Sub-Code-1336

Ref No: PRgCYINW

Title: Zebra Fish as Model organism for Developmental Toxicity study

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Abstract:

Croton tiglium L belongs to the family Euphorbiaceae. It is used as folk medicine for treating many diseases. The present study aims to investigate the possible toxicity of C. tiglium L. To address the toxicity assessment of this plant Zebra fish (Danio rerio) was used as a model
organism. Among the several advantages of using zebra fish for toxicological study include economic husbandry requirements, high fecundity, rapid ex-utero development, transparent nature of the embryo and short generation time and well characterized developmental stages. This type of study might help in the prediction of human health risk assessment of traditional medicinal plants. Zebra fish embryos treated with aqueous extract of C. tiglium L show no or less development of eye and trunk with no pigmentation. The plant extract treated larvae show spinal curvature, malformation including pericardial edema, yolk sac edema, swim bladder deficiency, etc.

**Sub-Code-1337**

**Ref No: hK9wcqQk**

**Title:** Common therapeutic foods in the kitchen

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**Abstract:**

India is the country recognized for traditional medicine. Common vegetables and spices that we use in the kitchen have a wide range of medicinal effects. Many of these foods act at the molecular level. Foods like turmeric, garlic, ginger, cloves, aloe vera, tragacanth gum, onions, fenugreek, cinnamon and camphor have medicinal properties and are being used in the food, pharmaceutical and beauty industries because of their anti-oxidant, anti-bacterial and anti-ageing properties. Some of the other foods have proven to be effective expectorants, laxatives and carminatives. Others have antiseptic, anti-parasitic, analgesic, anti-pyretic, anaesthetic and anti-inflammatory properties. Many of the health issues can be cures with these foods. There are also foods that maintain a healthy pregnancy, assist the true labour and enhance lactation post-delivery. Many researches have been done after the advancements in science and technology where the main components responsible for cure in these spices are extracted to study the effect by direct supplementing the extracted components in the form of medicines which has proven to be less effective than the food that is consumed directly. There are incomparable advantages of traditional medicine where food is consumed as such for cure. Besides providing the nutritional requirements in everyday life, foods we use in the kitchen also have effective therapeutic properties on human health.

**Key Words:** Food, spices, Traditional medicine, Health, Nutrition, Therapeutic foods.

**Sub-Code-1338**

**Ref No: j0Dhtbio**

**Title:** Evaluation of anti-oxidant constituents and anti-oxidant activity in aqueous and alcoholic extracts of different plant parts of an important medicinal plant Ajuga bractiosa wall. ex benth, found in Uttarakhand Himalayas.

**Author Name:** Anchala Guglani

**Co-author name:** Hemant K. Pandey1, Rajeshwar K.K. Arya2, Madhu Bala1
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Abstract:
The anti-oxidant compounds in plants, play an important role as a health-protecting factor. The anti-oxidant reduces risk of several human diseases such as diabetes mellitus, atherosclerosis, arthritis, anemia, asthma, neurodegenerative diseases. The antioxidant activity was evaluated by measuring reducing ability, free radical scavenging activity by DPPH, ABTS and FRAP methods and the antioxidant constituents viz. phenolics, flavonoids, tannins were also evaluated in the aqueous and ethanolic extracts of different plant parts viz. leaves, flowers, stems and roots of Ajuga bracteosa; commonly known as â€˜Ratpatiyaâ€™ grown at Defence Institute of Bio Energy Research Fd. Stn., Pithoragarh. The phenolic contents varied from 5.27mg/g to 10.46mg/g and 2.51mg/g to 6.46mg/g in aqueous and alcoholic extract of different parts respectively. The highest quantities of Phenolics were present in aqueous (10.46mg/g) and alcoholic extract (6.46mg/g) of leaves. The flavonoids varied from 1.92mg/g to 7.50mg/g and 0.88mg/g to 4.66mg/g in aqueous and alcoholic extract of different parts respectively. Maximum flavonoids contents were present in leaves 7.5 mg and 4.66 mg/g in aqueous and alcoholic extract respectively. The highest tannins contents were recorded 21.06mg/g in Aq and 12.72mg/g in ethanolic ext of the leaves. The anti-oxidant activity determined by ABTS method, the lowest inhibition concentration IC50 (i.e. highest antioxidant activity) was found 27.07mg/g in Aq and 35.21mg/g in ethanolic ext. of leaves. By DPPH method the minimum IC50 was found 44.09 mg/g in Aq and 54.18 mg/g in ethanolic ext of the leaves. When anti-oxidant activity was evaluated by FRAP method the IC50 was found 3.41mg/g in aq.ext and 3.74mg/g in ethanolic ext of leaves of the plant. The IC50 of Ascorbic acid was 0.449mg/g and 0.490mg/g in Aq and alcoholi extract. It can be concluded that the leaves of this plant exhibited significantly (P<0.05) higher anti-oxidant constituents and anti-oxidant activity followed by the roots of the plant. Similarly, the aqueous extract is better than the ethanolic extract of leaves of Ajuga bracteosa as far as anti-oxidant constituents and anti-oxidant activity is concerned. Since, in folklore information Ajuga bracteosa is used for the cure of diabetes so for the preparation of herbal medicine from the plants use of leaves would be beneficial followed by roots.

Sub-Code-1339

Ref No: HvG8j5eR

Title: Neuroprotective herbs and foods from different traditional medicines and diet

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Abstract:
Neurodegeneration refers to a condition of neuronal death occurring due to long term progressive disease and is becoming a major health problem in the 21st century. Neurons once degenerated are not replaced resulting in a cognitive loss and many neurodegenerative disorders . Neuroprotection refers to the strategies and possible mechanisms that are able to
protect the CNS against neuronal injury and neurodegeneration. The past decade has witnessed an intense interest in herbal plants having long term health promoting or medicinal qualities. Comprehensive research and discovery have demonstrated that natural products which were used traditionally for dietary, food additive, spice and various medicinal purposes, medicinal herbs, plant extracts and their metabolites have great potential as neuroprotective agents although precise mechanisms of action of herbal drugs have yet to be determined. The presently available drugs for the treatment of neurodegenerative diseases are symptomatic only and do not alter the course or progression of the underlying disease and also produce adverse reactions in patients thereby having limited scope for the treatment of neurodegenerative disorders. Herbal remedies are becoming more popular in the recent years as they show the possibility to slow down the brain's degeneration. The benefits derived from using herbal medicines have been very promising as they are not only as effective as prescription drugs but also have fewer side effects. Structural diversity of medicinal herbs makes them valuable source of novel lead compounds against therapeutic targets that are newly discovered by genomics, proteomics and high throughput screening.

**Sub-Code-1340**

**Ref No:** 3SUun6ll

**Title:** Anti-aging potential of Indian medicinal plants

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**Abstract:**

Ageing is a complex process of damage accumulation, and has been viewed as experimentally and medically intractable. Due to improvements in public health, especially in developed countries, many individuals are living longer, and as a result suffer more age-related diseases. So, there is a need to improve the health of older people. There are several animal models currently studied in aging research to extend lifespan and healthspan. Among these, Caenorhabditis elegans is a key model organism due to its short lifespan, and its genetics can be easily manipulated. Recently, the WorMotel was developed, a microfabricated device used for automated longitudinal imaging to study the lifespan of individual C. elegans. Based on literature, we selected about two dozen Indian medicinal plants reported to have antiaging effects. Small scale extractions were carried out using different solvents (hexane, acetone, ethanol and water), and the extracts were screened first with a WmicroTracker device for signs of toxicity against C. elegans. Selected extracts which had no toxic effects on the movement of C. elegans were further tested at a concentration of 100 µg/mL in a WorMotel, with 60 wells containing individual worms receiving the same treatment on a custom-made PDMS 240-well plate. Four extracts of Indian medicinal plants were found to be as effective in increasing lifespan as the positive control metformin. Further studies on the isolation of the active compound(s) with antiaging process is in progress.

**Keywords:** Antiaging, Indian medicinal plants, C. elegans, WorMotel
Sub-Code-1341

Ref No: CR8fO6cA

Title: Anti-inflammatory activity of ethanolic extract of Toona ciliata M. Roem in experimental albino rats

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Abstract:

Background: The control of pain and inflammation is one of the most important uses of drugs. Plants have been the source of many local medication. Likewise, leaves of Toona ciliata M. Roem, locally known as â€œTairelâ€ in Manipuri is used as herbal medication to cure ailments like headache, fever, worm infestation, diarrhoea, ringworm infection and as expectorant.

Aim: To evaluate the anti-inflammatory activity of ethanolic extract of Toona ciliata M. Roem (EETC) in experimental albino rats.

Methods: Anti-inflammatory studies were carried out for acute inflammation by carrageenan induced rat paw edema method, subacute inflammation by turpentine oil induced granuloma pouch method and chronic inflammation by formalin induced arthritis method. 4 groups of 6 rats each were used in all the three methods. ANOVA and Bonferroni test was used for analysis of the continuous variables. p<0.05 was considered significant.

Result: In carrageenan induced rat paw edema, there was significant (p<0.05) inhibition of paw edema after 30 minutes of carrageenan injection. In the granuloma pouch method, there was significant (p<0.05) reduction in formation of granulomatous exudates on 7th day after the injection of turpentine oil in the air pouch made on the back of the rats. In the formalin induced arthritis, there was significant (p<0.05) inhibition of paw edema from 3rd day of induction of arthritis.

Conclusion: The ethanolic extract of Toona ciliata M. Roem is significantly effective in controlling various type of inflammation in rats. Further study with different methods to isolate the active constituents of the plant extracts is suggested.

Key words: Rat, Toona ciliata M. Roem, Pain, Inflammation

Sub-code-1342

Ref No: 4EhlyjFa

Title: Study on efficacy of Withania Somnifera as adaptogen against various types of stress in horses.

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Abstract:

An experimental study was conducted to assess the efficacy of Withania somnifera (WS) as adaptogen against various types of stress in the horses. A total of twenty-four horses were randomly divided into four groups consisting of six in each. All the horses were provided with feed and ad libitum water throughout the experiment. Group 1 was fed with normal diet, whereas treatment groups 2, 3 and 4 were fed with WS @ 2.5, 5 and 10g per animal per day, respectively. WS was mixed with jaggery along with normal diet and fed for a period of 21
days. All the 24 animals were subjected to stress on day 15th (exercise-induced stress), day 18th (separation-induced stress) and day 21st (noise-induced stress).

Whole blood and serum were collected on day 0, 15, 18 and 21 for estimation of various haematological, biochemical parameters and hormonal profile, and body weights were also recorded. The present study revealed that, the body weights (Kgs) during post-stress (on 15th, 18th and 21st day) in group 1 showed no significant difference when compared to pre-stress period (0 day). In WS treated groups (2, 3 and 4) values increased non-significantly when compared to group 1 at respective time intervals and were non-significantly higher when compared with pre-stress period on 0th day. The results of hematomal parameters revealed that, the mean concentration of TEC, Hb, PCV and TLC during post-stress in group 1 was significantly (p<0.05) higher, while lymphocytes were non-significantly higher than pre-stress period. In WS treated groups, TEC, Hb, TLC and lymphocyte values were significantly (p<0.05) higher and PCV was non-significantly higher during post-stress period when compared to group 1 at respective time intervals. In WS treated groups, TEC, Hb, PCV, lymphocytes and TLC values were significantly (p<0.05) higher when compared with pre-stress period on 0th day. The biochemical parameters like total cholesterol, triglycerides, HDL, LDL, total protein, albumin, globulin, ALT and BUN showed no significant difference, whereas glucose, AST and creatinine were significantly (p<0.05) higher during post-stress in group 1 compared to pre-stress period. In WS treated groups, TEC, Hb, TLC and lymphocyte values were significantly (p<0.05) higher during post-stress in group 1 compared to pre-stress period. In WS treated groups, TEC, Hb, TLC and lymphocyte values were significantly (p<0.05) higher when compared to group 1 at respective time intervals. The concentration of cortisol, epinephrine and cytokine IL-6 during post-stress in group 1 was significantly (p<0.05) higher and serotonin was significantly (p<0.05) lower, whereas GABA was non-significantly lower than pre-stress period. In WS treated groups, cortisol, epinephrine, IL-6 values were significantly (p<0.05) lower and serotonin was significantly (p<0.05) lower. GABA concentration was non-significantly higher during post-stress period when compared to group 1 at respective time intervals and treated groups were comparable with pre-stress period on 0th day.

In conclusion, the results of the present investigation elucidated that WS has potent haemopoietic, anti-stress, antioxidant, adaptogenic and immunostimulant properties and is also safe for consumption based on safety parameters. WS is effective in scavenging free radicals released during stress and regulates the release of hormones and cytokines during stress and thereby inhibits or avoids the adverse effects of stress.

Sub-Code-1343
Ref No: 3SUun6ll
Title: Anti-aging potential of Indian medicinal plants
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Abstract:
Ageing is a complex process of damage accumulation, and has been viewed as experimentally and medically intractable. Due to improvements in public health, especially in developed countries, many individuals are living longer, and as a result suffer more age-related diseases. So, there is a need to improve the health of older people. There are several animal models currently studied in aging research to extend lifespan and healthspan. Among these, Caenorhabditis elegans is a key model organism due to its short lifespan, and its genetics can be easily manipulated. Recently, the WorMotel was developed, a microfabricated device used for automated longitudinal imaging to study the lifespan of individual C. elegans. Based on literature, we selected about two dozen Indian medicinal plants reported to have antiaging effects. Small scale extractions were carried out using different solvents (hexane, acetone, ethanol and water), and the extracts were screened first with a WmicroTracker device for signs of toxicity against C. elegans. Selected extracts which had no toxic effects on the movement of C. elegans were further tested at a concentration of 100 Âµg/mL in a WorMotel, with 60 wells containing individual worms receiving the same treatment on a custom-made PDMS 240-well plate. Four extracts of Indian medicinal plants were found to be as effective in increasing lifespan as the positive control metformin. Further studies on the isolation of the active compound(s) with antiaging process is in progress.

Keywords: Antiaging, Indian medicinal plants, C. elegans, WorMotel

Sub-Code-1344

Ref No: 5KPwU8Ux

Title: Indian Herbo-Mineral Formulations â€˜Divya Amvatari Rasâ€™ and â€˜Ashwashilaâ€™ Ameliorate Rheumatoid Arthritis in Collagen- Antibody- Induced Arthritis (CAIA) Mouse Model Possibly Via Modulation of IL-6/IL-1Î²/TNF-Î±/NFÎºB Signaling

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Abstract:
Rheumatoid Arthritis (RA) is a chronic systemic disease that affects the joints, connective tissues, muscle, tendons, and fibrous tissue which affects 0.3-1% of the population worldwide. Currently available synthetic anti-rheumatic drugs gives symptomatic relief, however cannot be used for long term due to severe side effects. Plant-derived products are slowly emerging as a viable alternative because they are cost effective, abundantly available and relatively safer. In the present investigations, Indian herbo-mineral medicines: Divya Amvatari Ras, a classically described ancient formulation and â€˜Ashwashilaâ€™ (a new formulation, containing Ashwagandha and Shilajit) were explored for their anti-arthritic potential using collagen-antibody cocktail induced arthritis (CAIA) model in male Balb/c mice. Two weeks oral treatment of Divya Amvatari Ras (DAR; 454 mg/kg) and Ashwashila (ASHW; 353 mg/kg) significantly modified pedal edema, arthritis score of the paw and ankle, radiological and histological lesion score of ankle and knee joints, in comparison to diseased animals. Disease induced pain behaviors analyzed using Randall-Selitto (Mechanical
hyperalgesia) and Hot Plate Tests (Thermal hyperalgesia) were significantly reversed by the treatment of DAR and ASHW. These results were found to be comparable to standard of care anti-rheumatic drug, Methotrexate. Possible mechanism of action for DAR and ASHW was established in LPS stimulated human monocytic THP-1 cells, through the suppression of pro-inflammatory cytokines IL-1β, IL-6, TNF-α; and upstream regulator, NF-κB. DAR treated serum and bone tissue samples were analyzed using ICP-MS and shown no bioaccumulation of elemental mercury. Taken together, our studies suggest that the Indian herbo-mineral formulations: Divya Amvatari Ras and Ashwashila possess robust anti-arthritic properties and could be used as alternative or complimentary medicines for the treatment of RA like etiologies.

References:

Sub-code-1345

Ref No: u3s7lL64

Title: Review of Role of Curcumin in Disease Prevention And Treatment

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Abstract:

Curcumin is chemically known as diferuloylmethane, which is an important nutraceutical obtained from the yellow spice Curcuma longa. Clinical trials have provided evidence that Curcumin could be effectively used as anti microbial, anti cancer, anti inflammatory, anti diabetic and anti oxidant. Latest findings support the effect of Curcuma longa and its chief constituents curcumin in a broad range of diseases cure via modulation of physiological and biochemical process. Curcumin shows role as anti-inflammatory via inhibition of enzymes such as cyclooxygenase-2 (COX-2) and 5-lipoxygenase. Curcumin has been shown to improve systemic markers of oxidative stress. Curcumin show gastroprotective effect and also reduced peptic ulcer and its associated complications. Current evidence suggests that curcumin is a highly pleiotropic molecule with numerous targets and mechanisms of action. It aids in the management of oxidative and inflammatory conditions, metabolic syndrome, arthritis, anxiety, and hyperlipidemia. It may also help in the management of exercise-induced inflammation and muscle soreness, thus enhancing recovery. Curcumin is an active ingredient contained in the rhizome of Curcuma longa plant or turmeric. This natural substance has purported anti-inflammatory, anti-depressant, and anti-diabetic effects. Animal study revealed that curcumin and its analogues resembled the action of antidiabetic drug namely thiazolidinedione group through activation of peroxisome proliferator-activated receptor-Î³ (PPAR-Î³). Thus, curcumin may correct the responsible targets relating to glucose and lipid control in the body which play an important part in diabetes management. This is a review study with the objective to systematically analyze the wealth of information regarding the medical use of curcumin, the â€œcurry spiceâ€ , and to understand its widespread application in the medical community

Key words: Curcumin longa, anti inflammatory, pleiotropic, nutraceutical, PPAR-gamma, antidiabetic
Poster Presentation-1 – Health effects of Natural products

Code-1400

Sub-Code-1401
Ref No: XrvWTPha
Title: In-vivo antihyperlipidemic activity and preliminary phytochemical screening of Bauhinia Acuminata
Author Name: Anusha Govindula
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Abstract:
The global burden of CVD is rising due to its increasing prevalence in lower- and middle-income countries where 80% of all global CVD-related deaths occur. Common significant risk factors for dyslipidemia included obesity, diabetes, and dysglycemia. The present study was aimed to investigate the potential anti hyperlipidemic activity of Ethanolic leaf extract of Bauhinia acuminata in atherogenic diet induced rats. Preliminary phytochemical screening showed the presence of Flavanoids, alkaloids, steroids, Terpenoids. Acute toxicity study was performed on the rats using OECD Guideline no.423 and the maximum safe dose was found to be 5000mg/kg. Animals were grouped into Normal Control (Group-I), Disease Control (Group-II), Standard Group (Group-III) received Standard drug Atorvastatin 10mg/kg, and Test Group (Group-IV) received ethanolic extract of the plant with doses 200mg/kg and 400 mg/kg. The study was conducted for 30 days and Hyperlipidemia induced using atherogenic diet. Statistical analysis was performed using Graph Pad Prism and the values are expressed as

Sub-Code-1402
Ref No: if5UDdKt
Title: Lupeol Improves Cognitive Performance by Attenuating Oxidative Stress in Animal Model of D-Galactose Induced Cognitive Dysfunction.
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Abstract:
Cognitive dysfunction is known to accelerate with age and in patients with various neurodegenerative diseases. Oxidative stress is the key mediator of cognitive dysfunction associated with aging. D-galactose model is a well-established experimental paradigm for inducing cognitive dysfunction in rodents and is associated with enhanced oxidative stress. Chronic galactose exposure in animals leads to the formation and accumulation of advanced
glycation end products (AGE) that leads to the generation of free radicals which strike the neuronal population in different regions of brain and deteriorate the cognitive function. Lupeol is a pentacyclic triterpenoid obtained from different plant sources and possesses potent anti-inflammatory, anti-apoptotic, anti-oxidant and neuroprotective activity. Present study was designed to evaluate the protective effect of lupeol in animal model D-Galactose induced cognitive dysfunction. D-galactose was administered by i.p. route in the dose of 100-200mg/kg daily for six weeks and learning-memory of rodents was assessed by using open-field test, Morris water maze test and novel object recognition task. Further, lupeol was administered at a dose of 10, 25, 50 mg/kg i.p. from fourth to the sixth week and behavioral tasks were re-conducted. At the end of behavioral studies, the animals were sacrificed, antioxidant and acetyl cholinesterase activity was measured along with AGE levels in cerebral cortex and hippocampus of rodents. We found that lupeol treated animals showed significantly improved cognitive performance in battery of behavioral tests. Lupeol also suppressed oxidative stress and acetyl cholinesterase in cortex and hippocampus of treated rats. Findings from the present study demonstrates the protective effective of lupeol against D-galactose induced cognitive dysfunction in rats. Thus, lupeol could be used as nutraceutical product in dietary supplements by the patient suffering with aging associated cognitive dysfunction.

Sub-Code-1403

Ref No: yYWKa0vH

Title: Effect of Gmelina Arborea on learning and memory in amnesia induced & non-amnesia group of Albino Wistar rats.

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Abstract:

Introduction: The brain is the centre of the nervous system in all vertebrates. The central cholinergic pathways play a prominent role in learning and memory processes. Dementia is a mental disorder characterized by loss of intellectual ability which invariably involves impairment of memory. The crude extracts of the Gmelina arborea plant are reported to possess wound-healing properties, antidiarrheal activity, antioxidant activity, antidiabetic activity, and antiulcer activity. The present study was designed to evaluate the effects of Gmelina arborea on learning & memory in albino wistar rats.

Methods: After approval from the Institutional Ethics Committee, the study was undertaken. Total 36 healthy rats were selected for the study & divided in to 6 groups. The standard screening models like Elevated plus maze (EPM), Morris water maze (MWM) & Step down passive avoidance (SDA) test were utilised in the present study for testing learning & memory process. Propofol 75mg/kg was administered intraperitoneally to the animals for induction of amnesia, 45 minutes before the behavioural tests.
Results: Our study revealed that G. arborea at higher doses (1000 mg/kg) showed statistically significant activity in various experimental models like EPM, MWM & SDA for assessing learning & memory paradigms when compared to control group in amnesia induced & non-amnesia group of rats.

Conclusion: This is the first ever study to report the effects of G. arborea on learning & memory in both amnesia induced & non-amnesia group of rats. Our study revealed that the G. arborea potentiates the process of learning & memory. The pharmacological activities revealed are yet to be further evaluated by detailed experimental studies and revalidated by clinical trials.

Key words: G. arborea, Elevated plus maze, Morris water maze, Step down passive avoidance test, Amnesia, Learning, Memory.

Sub-Code-1404

Ref No: g5VagfF6

Title: Evaluation of Swarnabhasmam for cognition enhancement in Zebra fish.

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Abstract:

Introduction: From centuries Swarna Bhasmam has been used as an Indian traditional medicine. It has few therapeutic properties like analgesic, ant cataleptic, anti-anxiety and antidepressant, activity antioxidant and augmenting effect. In traditional system of medicine gold was used either as Swarna Bhasmam, Swarna parpati, or as red colloidal solution. In Bhasmam gold is used in the form of fine metallic powder or red colloidal solution. In this study the behavioural patterns implying cognitive functions in Zebra fish was evaluated. The aim of the study is to evaluate the ability of Swarna Bhasmam for improvement of cognitive abilities in Zebra fish model.

Materials and Methods: Dive tank test and Maze test was performed to evaluate the behavioural patterns of Zebra fish which signifies the cognitive functions of Swarna Bhasmam extract. Mann Whitney test was performed to analyse the results.

Results: The Dive tank test revealed that drug treated group of fish spent more time in the upper half of the tank, which is suggestive that the drug may be responsible for the fish less anxious. The Maze test revealed that drug treated group fish exhibited increased number of correct choices.

Conclusion: The extract showed improvement in cognitive abilities of Zebra fish and may be considered for further studies which may make this product more authenticated for clinical practice.

Keywords: Swarna Bhasmam; Dive tank test; Maze test; Zebra fish; Cognition
**Sub-Code-1405**

Ref No: DNO0tc0s

**Title:** Evaluation of central analgesic activity of Lactuca sativa (lettuce) in wistar rats

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**Co-Author Name:** GEETHA M

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**Abstract:**

Objectives: To evaluate the central analgesic activity of aqueous extract of leaf of Lactuca sativa (lettuce) in Wistar rats and to compare it with Tramadol.

Methods: The study was carried out in Wistar rats divided into 3 groups, Normal saline group(10ml/kg), Tramadol group(10mg/kg) and Aqueous extract of leaf of L.sativa(1mg/kg) of 6 animals each of either sex and weighing between 130-180gms. The analgesic activity was compared using two models Tail flick method and Eddyâ€™s hot plate method at intervals of 0min, 30min, 60min and 90min.

Results: Statistical analysis was done using SPSS for windows version 25.0. Mean possible analgesia data was expressed as mean and standard error mean, intergroup differences were statistically determined using ANOVA and Post hoc Tuckeyâ€™s test for unpaired data and level of significance was set at p<0.05. The p value for L.sativa group in Tail flick method was 0.036 which was significant.

Conclusion: Aqueous extracts of L.sativa leaf showed good analgesic activity in the Tail flick model which was comparable with Tramadol these findings suggest that L.sativa like Tramadol it mainly produces analgesia by central mechanism, further studies are needed to evaluate the same and it can be a good alternative to NSAIDâ€™s and other analgesics which have detriment effects on renal system etc in the long run.

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**Sub-Code-1406**

Ref No: vS7KJv00

**Title:** Anxiolytic activity of aqueous extract of cinnamomum tamala Leaves on rats.

**Author Name:** *Shahwar A,**kulkarni G.P

**Affiliation:** *Azra shahwar,post graduate brims bidar **Gajanan P kulkarni, Professor and HOD Brims Bidar

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**Abstract:**

Background: Anxiety and depression are the most predominant psychological diseases globally. Anti anxiety and antidepressant drugs are the choice of treatment of these diseases but they have side effects also. Drugs derived from natural origin barely have side effects. Cinnamomum tamala also known as tejpat (in hindi) within lauracea family
Cinnamomum tamala leaves are known to exert anti anxiety, anti oxidant and anti diabetic activities.

The current study was designed to explore anxiolytic actions of cinnamomum tamala leaves (aqueous extract) in rat.

Materials and Methods: The present study was conducted in the department of pharmacology BRIMS BIDAR in the month of June 2019 with approval of Institutional animal ethics committee. Behavioral procedures of anxiety were assessed in rats. Cinnamomum tamala (100,200,400mg/kg) was given once a day for 7 days via oral Route and the efficacy was matched by those elicited with lorazepam (10mg/kg p.o) for anxiolytic studies. Standard drug is given 1 time, 30 min preceding the behavioral trials.

Results: One-way analysis of variance was followed. P < 0.05 was considered statistically significant as compared to control. Cinnamomum tamala at 400mg/kg produced an antianxiety effect equivalent to Lorazepam in elevated plus maze, open field, social interaction tests among selected doses of cinnamomum tamala.

Conclusion: The study shows that among different cinnamomum tamala doses, cinnamomum tamala at 400mg/kg possess significant anxiolytic effects and has therapeutic benefit for the treatment of Psychological ailments.

Keywords: Anxiolytic, cinnamomum tamala, rat elevated plus maze, lorazepam

Sub-Code-1407

Ref No: DvJZfecz

Title: Nephro-protective action of Trigonella Foenum Graecum l. against methotrexate induced nephrotoxicity in experimental animals.

Author Name: Shalu Khatri

Co-Author Name: Surender Singh

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Abstract:

Background: Methotrexate is a widely used drug in treatment of various medical conditions such as rheumatoid arthritis, cancer, psoriasis etc. However, it comes with a lot of adverse effects among which nephrotoxicity stands prominent. Complementary and alternative medicine like herbal medicine is gaining wide acceptance among the masses. Trigonella foenum graecum (TFG), one of the earliest medicinal herbs, is frequently used for various medicinal purposes.

Objective: Evaluation of nephroprotective potential of hydroalcoholic leaf extract of Trigonella foenum graecum (TFG) using Methotrexate-induced nephrotoxicity model

Methods: Wistar albino rats were used and divided into five groups (n=6). Group I received vehicle (distilled water as per body wt.) and served as the normal control, group II served as disease control, group III IV and V received TFG leaf extract at a dose of 100mg/, 200mg/ and 400mg/kg respectively. Nephrotoxicity was induced on 4th day by single dose of intraperitoneal administration of Mtx (20 mg/Kg). The plant extract was administered from day 1 till end of the experiment (14 days). On day 15, terminal blood was collected and serum
was separated for estimation of BUN and creatinine. Kidneys were dissected out for histopathology & immunohistochemistry analysis of NF-κB and Caspase 3.

Results: Pre-treatment with TFG significantly reduced the serum creatinine (p< 0.01) and BUN (p<0.05) levels & restored the architecture of renal tissue. It also reduced the expression of NF-κB and caspase 3 in renal tissues.

Conclusion: Trigonella foenum graecum possess nephroprotective property and demands further attention so that it can be effectively used along with modern day synthetic pharmacotherapies so as to reduce their dose and thus adverse effects.

Sub-Code-1408
Ref No: g1QjcqvQ
Title: An experimental study to evaluate the antidiabetic and antihyperlipidemic effect of Terminalia Arjuna in diabetic rats.
Author Name: Aaliya Bari
Affiliation: Department of Pharmacology, King George’s Medical University, Lucknow, Uttar Pradesh, Pin-226003
Email id: aaliyabari@gmail.com
Abstract:
Objective: To establish the effect of Terminalia arjuna bark extract on hyperglycaemia and diabetes induced dyslipidemia in streptozotocin-induced diabetic rats.

Materials and Methods: High fat diet and streptozotocin induced (35 mg/kg, intravenous) diabetic mice were given bark extract of (250 and 500mg/kg, per oral) of Terminalia arjuna or vehicle (distilled water, 10 ml/kg, per oral) or standard drug Glibenclamide (0.5mg/kg, per oral) or Rosuvastatin (20mg/kg, per oral) for 2 months. Blood samples were withdrawn by retro-orbital puncture and were analyzed for serum glucose and lipid profile on 0th, 5th, 8th week by commercial kits. The statistical analysis will be performed by ANOVA followed by group comparison test. All data will be presented in the mean Â± S.E and p value of ˂ 0.05 will be considered as level of significance.

Results: The bark extract of Terminalia arjuna showed significant reduction of serum glucose, low density lipoprotein, very low density lipoprotein and cholesterol level.

Conclusion: It is concluded that Terminalia arjuna has significant antihyperglycemic activity as it lowers serum glucose, low density lipoprotein, very low density lipoprotein and cholesterol level in diabetic mice thus Terminalia arjuna bark extract is very promising for developing standardized phytomedicine for diabetes mellitus.

Keywords: Diabetes, antidiabetic, antihyperlipidemic, Terminalia arjuna, diabetic rats.

Sub-Code-1409
Ref No: Zc0rFkpq
Title: Effect of ethanolic extract of Vetiveria Zizanioides on experimentally induced dyslipidemia
Author Name: Sangeetha Raja
Affiliation: Assistant Professor, Department of Pharmacology, SRM Medical College Hospital & Research Center, Tamilnadu
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Abstract:
Background: Hyperlipidemia is a major cause of atherosclerosis leading to Coronary Heart Disease, Ischemic cerebrovascular disease with high morbidity and mortality. Lipid peroxidation is one of the early processes of atherosclerosis, some antioxidants can prevent it. Increased generation of oxidized LDL is a major factor in the vascular damage associated with high cholesterol levels. Inhibition of oxidative stress under hypercholesterolemic conditions is considered to be an important therapeutic approach. Reviving the herbal products for remedy is on the rise. Roots of Vetiveria zizanioides are used in treating many ailments and had already been proven for its antioxidant property.

Objective: To evaluate the hypolipidemic effect of Ethanolic Extract of Vetiveria zizanioides (EEVZ) on a high-fat diet (HFD) induced hyperlipidemia in Wistar Albino rat model.

Methods: The rats will be divided into five groups of six animals in each group. Normal Diet Control (Group I), HFD Control (Group II), HFD with low dose (EEVZ) (300mg/kg BW) (Group III), HFD with high dose EEVZ (600mg/kg BW) (Group IV) and HFD with Simvastatin (Group V) for 8 weeks. The EEVZ and Simvastatin will be given orally once daily. The weight of the animals will be measured every week and the lipid parameter like Total Cholesterol, Triglycerides, High Density, and Low-Density Lipoproteins will be estimated for each group at the end of baseline, 4th week and 8th week. At the end of the study, animals will be sacrificed by CO2, liver, and kidney will be removed to measure the change in weight and for histopathological evaluation.

Results: All values will be presented as mean ± SD. The lipid parameter will be statistically analyzed using paired Student t-test and multiple comparisons between the groups using ANOVA.

Sub-Code-1410
Ref No: Vjt6gkPO

Title: Comparative study of antidiabetic and hypolipidaemic activity of leaf extract of Gymnema sylvestre with Glibenclamide in alloxan induced diabetic rabbits.

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Co-Author Name: S Shirisha1, K Indira3 and Vijaykrishna.
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Abstract:
Introduction: Diabetes mellitus is the commonest metabolic disorder characterized by chronic hyperglycemia and derangement of carbohydrate, fat and protein metabolism due to absolute
or relative deficiency of insulin or its action. Long standing metabolic derangement is frequently associated with permanent and irreversible functional and structural changes in the cells of the body particularly the vascular system. This leads to complications like diabetic neuropathy, nephropathy, retinopathy, etc. Therapeutic options for diabetes are diet, exercise oral hypoglycemic drugs and insulin therapy. But the currently available drugs are associated with side effects. Hence the search is made for new compounds with multiple targets and without any side effects

Materials and method: Rabbits were randomly divided into 3 groups, each comprising 6 rabbits. Group 1 - Normal control distilled water, Group 2 - Test drug Gymnema sylvestre extract - 800mg/kg, Group 3 - Standard drug, Glibenclamide - 0.5mg/kg was administered orally for 30 days. The fasting blood glucose and serum lipid profile were estimated in both normal and Alloxan induced diabetic rabbits.

Results: The percentage reduction in FBS after 30 days of treatment in Gymnema sylvestre group 69.91% and in Glibenclamide group 65.75%, difference between groups was statistically significant. P value - 0.0139**. The percentage reduction in lipid levels after 30 days of treatment in Gymnema sylvestre group were TG-30%; TC-38%; HDL-12.30%;LDL-78.78% and in Glibenclamide group were TG-9.6%;TC-30%; HDL-4%; LDL-45%. There was statistically significant difference between groups in TG, TC, HDL except LDL. P value TG (0.002**), TC (0.02*), HDL (0.0004***), LDL (0.067).

Conclusion: The leaf extract of Gymnema sylvestre showed excellent antidiabetic potential and equally effective when compared with Glibenclamide in alloxan induced diabetic rabbits. Hypolipidemic effect of Gymnema sylvestre should be further evaluated in comparison with standard hypolipidemic drugs.

Keywords: Diabetes, Hyperlipidemia, Gymnema sylvestre, Glibenclamide

**Sub-Code-1411**

**Ref No: 3tf68Kc8**

**Title:** The Chinese Herbal Formula PAPZ Ameliorates Behavioral Abnormalities in Depressive Mice

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**Abstract:**

Major depressive disorder (MDD) or depression is a chronic mental disorder characterized by mixed symptoms and complex pathogenesis. With long history of practical application, traditional Chinese medicine (TCM) offers many herbs for the treatment and rehabilitation of chronic disease. In this study, we developed a modified Chinese herbal formula using Panax ginseng, Angelica Sinensis, Polygala tenuifolia Wild, and Ziziphi spinosae Semen (PAPZ), based on an ancient TCM prescription. Because corticosterone is a common inducer of depression-related behavior, 21 days treatment by corticosterone was used to establish a depressive-like mice model in vivo to evaluate the effect of PAPZ in MDD. The results showed that administration of PAPZ ameliorated depression-like phenotypes in corticosterone-induced mice by tail suspension test. Also PAPZ ameliorated corticosterone-induced learning and memory impairment by novel object
recognition test and Morris water maze test. Anatomic study showed that PAPZ treatment upregulated the expression of brain-derived neurotrophic factor (BDNF) in hippocampal region, while enzyme activity of superoxide dismutase was enhanced in the same region, with a decreased malondialdehyde level. In addition, PAPZ also attenuated corticosterone-induced apoptosis in a hippocampus-derived HT22 cell line in vitro. Taken together, these findings suggested that PAPZ has therapeutic effects in depressive model mice via increasing the expression of BDNF and improving the anti-oxidation ability in the brain, which presents the potential benefits of using PAPZ in the treatment or rehabilitation of MDD patients.

Sub-Code-1412

Ref No: TrGyiDEk

Title: Can the methanolic extract of Andrographis Paniculata be used to supplement anti-snake venom to mitigate hemostatic abnormalities caused by Naja Naja Venom: A thromboelastographic study

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Abstract:

Introduction: Snake bites are a major concern in tropical countries including India resulting in high rate of mortality. Among the Indian poisonous snakes, Naja naja[N.N] causes death by respiratory paralysis. Effects of the venom on hemostasis are conspicuous and manifest as hemorrhage at bite site. Though polyvalent anti-snake venom[ASV] is the only definitive treatment available in India against the venom of N.N, high cost and anaphylactic reactions associated with its therapy further complicate the situation. Andrographis paniculata[A.P] commonly known as â€˜king of bittersâ€™, has been used in the treatment of N.N bite by traditional healers in India and south east Asia. The effectiveness of methanolic extract of A.P[MAP] in mitigating the deleterious effects on hemostatic parameters independently or as a supplement to ASV has not been studies so far.

Methodology: Thromboelastographic evaluation of hemostatic parameters was initiated by adding citrated whole blood(340Âµl) from healthy volunteers(n=3) to a cup containing 20Âµl(0.2M) CaCl2 followed by N.N(3Âµg) venom. The effect of different concentrations of ASV and MAP in neutralizing the toxicity of N.N venom were studied by successive addition of ASV(11Âµg,17.6Âµg and 33Âµg) or MAP(15Âµg, 30Âµg, 60Âµg and 120Âµg) or combination of ASV and MAP(6.6ÂµgASV+30ÂµgMAP and 6.6Âµg ASV+60Âµg MAP) to the assay system.

Result: Data was analyzed using SPSS software version 16 and results were expressed as meanÂ±SEM for replicate (n=3) samples. At 3Âµg concentration, N.N venom caused significant deleterious effects on hemostasis with increase in R-time, K-time, LY30% and a decrease in angle and MA. Optimum effect of ASV on hemostatic parameters was observed at a concentration of 17.6Âµg, where all the deleterious effects of the venom were completely reversed. Addition of MAP to the assay system could reproduce results as given by ASV, in reversing the deleterious effects of the venom. This occurred in a concentration-dependent
manner, from 15Âµg-60Âµg, with the optimum effect at 60Âµg. When ASV concentration was reduced to 6.6Âµg and supplemented with MAP (30Âµg/60Âµg), a positive supplementary effect better than that of ASV was demonstrated.

Conclusion: This in-vitro study demonstrates the effectiveness of MAP as a supplement to ASV in combating the deleterious effects of N.N venom on hemostasis. However, further in-vivo experiments in animal models are required to substantiate these effects.

**Sub-Code-1413**

**Ref No:** vW5y2eJ2

**Title:** The role of Shikoninmethoxy Polyethylene Glycol-Poly Caprolactone micelles in endothelial-to-mesenchymal transition and histone deacetylase 3.

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**Abstract:**

Shikonin, a naphthoquinone pigment extracted from the rhizome of Lithospermum erythrorhizion, has recently been found to regulate the inflammatory response of cardiovascular diseases (CVDs). It has been reported that the inflammatory mediator can induce endothelial-to-mesenchymal transition (EndMT), characterized by the generation of elongated and spindle-shaped mesenchymal cells. Histone deacetylase 3 (HDAC3), belonging to the class I HDACs, is known to modulate the function of vascular endothelial cells (VECs) in CVDs. However, Shikonin that governs the EndMT and HDAC3 in VECs is currently unclear. Since Shikonin has a very low water solubility and methoxy polyethylene glycol-poly caprolactone (MPEG-PCL) micelles can increase the water solubility of Shikonin, we herein investigated the roles of Shikonin/MPEG -PCL micelles and Shikonin in EndMT and HDAC3 in VECs. High performance liquid chromatography (HPLC) analysis indicated that Shikonin/MPEG-PCL micelles had a high drug-loading capacity. Shikonin/MPEG-PCL micelles were spherical and uniform in size by transmission electron microscopy. Inflammatory cytokines TNF-Î½ and IL-1Î² induced EndMT and increased the expression of HDAC3 in VECs. The effects of different concentrations of Shikonin/MPEG-PCL micelles and Shikonin (0.25, 0.5 and 1.0 Î¼M) on EndMT in VECs induced by TNF-Î½ and IL-1Î² were detected by RT-PCR. The results showed that both Shikonin/MPEG-PCL micelles and Shikonin increased the mRNA levels of endothelial markers CD31, vWF and VE-cadherin, and decreased the expression of mesenchymal markers Î½-SMA, FSP-1 and SM22Î± in VECs. Furthermore, the Shikonin/MPEG-PCL micelles at the concentration of 1.0 Î¼M have a stronger inhibitory effect on EndMT than Shikonin (P<0.05). In addition, we also found that Shikonin/MPEG-PCL micelles and Shikonin similarly reduced the expression of HDAC3 in VECs, compared with the stimulation group. These results show that Shikonin/MPEG-PCL micelles inhibit EndMT and decrease the expression of HDAC3 in VECs.
Title: Total Flavonoids from Anchusa italica improves cardiac function and attenuates cardiac remodeling post-myocardial infarction in mice.

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Abstract:

Background: The plant of Anchusa italica has been traditionally used in Uighur medicine for the treatment of cardiovascular and cerebrovascular diseases in China. Our previous study showed that total flavonoids from Anchusa italica (TFAI) exhibited potent cardioprotection on acute ischemia/reperfusion injured rats.

Purpose: This study was undertaken to investigate the effects of TFAI on chronic myocardial infarction in mice and the underlying mechanism.

Methods: Total flavonoids were extracted from the whole herb of Anchusa italica and were characterized using HPLC-MS analysis. The left anterior descending branch of coronary artery was ligated to induce myocardial infarction in mice. After surgery, the mice were orally fed with TFAI at the doses of 10, 30 and 50 mg/kg body weight/day for a total of four weeks. Cardiac function and infarct size were measured, and the levels of inflammatory mediators were detected. Hematoxylin and eosin (H&E) stain and Masson’s Trichrome stain were performed. The apoptotic factors such as Bax, Bcl-2 and cleaved caspase 3 as well as the key proteins in the PI3K/Akt/mTOR signaling pathway were examined by Western blot.

Results: The content of total flavonoids in TFAI was 56.2%. Four weeks following the MI surgery, TFAI enhanced the survival rate in post-MI mice. TFAI administration at the doses of 30 and 50 mg/kg significantly reduced the infarct size and improved cardiac function indicated by elevated EF and FS. Assay of inflammation factors showed that the sera levels of TNF-Î±, IL-1Î² and IL-6 were significantly decreased by TFAI treatment as compared to the MI group. H&E stain and Masson’s Trichrome stain demonstrated that TFAI suppressed myocyte hypertrophy and cardiac fibrosis indicated by decreased cross-section area and collagen volume. Western blot analysis showed that cleaved caspase 3 and Bax/Bcl-2 were significantly downregulated following TFAI treatment. Additionally, TFAI treatment significantly suppressed the activation of the PI3K/Akt/mTOR signaling pathway.

Conclusions: Our data suggest that TFAI exerts a protective effect against chronic myocardial infarction and its beneficial effects on cardiac function and cardiac remodeling might be at least attributable to anti-inflammatory and suppression of the PI3K/Akt/mTOR signaling pathway.
Objective: To standardize Trigonella foenum graecum (TFG) seed extract by using HPTLC and to see the efficacy on ovariectomy-induced biochemical and histological alterations in rats.

Materials and methods: Petroleum ether (PE) fraction of TFG was used to quantify diosgenin by high-performance thin-layer chromatography (HPTLC). For testing the efficacy, female Wistar rats were allocated into seven groups (n=6), namely Control, Control+TFG, Ovariectomized (OVX), OVX+TFG (50 mg/kg/day), OVX+Atorvastatin (ATR-10 mg/kg/day), OVX+Diosgenin (50 mg/kg/day) and OVX+17β-estradiol (E2-100 Î¼g/kg/day). After 12-weeks of treatment, fasting blood samples, liver, kidney and common carotid artery were collected. Serum was analyzed for lipid profile, hepatic, and oxidative stress markers. The liver, kidney and common carotid artery were used for histopathological study.

Results: Extraction yield was found to be 10% w/w, and diosgenin was quantified by HPTLC analysis. The diosgenin (Rf 0.82) was found to be 0.9 w/w in PE extract of TFG. The OVX-rats showed significantly increased (P<0.05) total cholesterol, triglycerides (TG), low-density lipoprotein levels (LDL), AST and ALT, and decreased high-density lipoprotein levels (HDL). Upon TFG treatment, there was significantly (P<0.05) lowered total cholesterol, LDL, and markedly increased the HDL. Significantly increased (P≤0.01) thiobarbituric acid reactive substances (TBARS) and reduced (P<0.05) glutathione levels were observed in OVX group. Further, OVX group rats showed dilated sinusoids, necrosis around the central vein and lipid droplets in hepatocytes of the liver, marked glomerular hypertrophy in the kidney and increased the thickness of tunica intima and media.

Conclusion: TFG supplementation has a favourable effect on OVX-induced hyperlipidemia, hepatic markers, oxidative stress and inflammation. This favourable effect may be due to components like diosgenin, flavonoids and phenols present in TFG seeds. TFG seed extract acts as a therapeutic agent for treating menopause induced hyperlipidemia and various histological alterations seen in liver, kidney and common carotid artery.
Sub-Code-1416

Ref No: SiHs0wtG

Title: Kaempferol inhibits metastasis of colorectal cancer by acting on TRPC5 affecting the formation of filopodia.

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Abstract:

Transient receptor potential channel 5 (TRPC5) is subtype of the TRPC family of mammalian transient receptor potential ion channels and a non-selective Ca2+ channel. Recently, the alteration of intracellular Ca2+ homeostasis is reported involved in tumor metastasis. However, the underlying mechanisms is poorly understood. Here, we reported that TRPC5 is overexpressed in specimens from colorectal cancer patients, and closely related with metastasis and prognosis. Moreover, overexpression of TRPC5 in colorectal cancer cells can evoke a robust [Ca2+]i rise, increased filopodia formation, enhancement of cell moveability and metastasis. Interestingly, we found that the kaempferol derived from the rhizome of Kaempferiae Rhizoma, can significantly inhibited calcium influx mediated by TRPC5 in colorectal cancer cells. Thereby inhibiting the formation of filopodia regulated by calcium ions, and finally inhibiting the metastasis and development of colorectal cancer. Taken together, our findings demonstrate that the overexpression of TRPC5 can promote the metastasis of colorectal cancer, which can be reversed by kaempferol by inhibiting the formation of filopodia.

Sub-Code-1417

Ref No: 4UM2Mf0F

Title: Effect of Betulinic acid on learning and memory in Wistar rats.

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Abstract:

Background: Betulinic acid [BA], a naturally occurring triterpenoid with significant antioxidant and neuroprotective properties, can be of potential benefit in progressive neurological diseases affecting learning and memory. The present study evaluates the effect of BA on learning and memory in scopolamine induced amnesia in wistar rats. Materials & Methods: Male adult wistar rats were divided into 7 groups. Group 1(normal control), group 2(disease control-scopolamine, 1mg/kg b.w), group 3(standard control-donepezil, 3mg/kg b.w).Groups 4,5and 6 received the test drug, BA at doses 0.5, 1.5, 3 mg/kg b.w respectively. Group 7 received BA (3mg/kg b.w) + donepezil. All the drugs except scopolamine were administered for a period of 14 days. On the 14th day animals were subjected to scopolamine, 60
minutes after the administration of either test drug or the standard drug in the respective groups, except the normal control. The cognitive paradigms were evaluated 45 minutes after scopolamine administration on the 14th day (acquisition trial) using Hebb-William Maze and Elevated Plus Maze [EPM]. The retention trial was carried out on the 15th day. The parameters assessed were time taken to reach the reward chamber [TRC] in Hebb-William Maze and transfer latency [TL] in EPM. Statistical analysis done by one way ANOVA followed by Tukeyâ€™s post hoc. Analysis within the group between day 14 and 15 is done by paired t-test. P value < 0.05 was considered statistically significant. Results: The groups treated with donepezil, BA (0.5, 1.5, 3 mg/kg b.w) and both (BA,3mg/kg b.w+ donepezil) showed a significant decrease in TRC and TL in Hebb-William Maze and EPM compared to disease control on day 14 and 15. Conclusion: The behavioural test showed that administration of BA attenuated learning and memory impairment induced by scopolamine and the observed effects could be associated to neuroprotective role of BA against oxidative stress induced damage.

Sub-Code-1418

Ref No: oe5LpxWe

Title: Anticonvulsant effect of Elsholtzia stachyodes extract on MES induced seizure in Albino rats

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Abstract:

Epilepsy is a condition in which a person has recurrent seizures due to chronic, underlying process which require lifetime therapy. Drugs used in treatment of epilepsy like Phenytoin are found to be associated with dose dependent adverse effects. E.stachyodes (ES) belongs to the family Lamiaciae, widely grown in south-east Asia. It is an aromatic plant commonly used in domestic folk medicine. Elsholtzia genus of plants are known to posses anti-microbial, anti-inflammatory, and anti-oxidant properties from previous studies. Its anti-convulsant action is still not studied. In the present study, E. stachyodes was evaluated for anti-epileptic activity against MES (maximal electroshock) induced seizure in albino rats. MES is the standard model for generalised tonic clonic seizure (GTCS).

In this study albino rats were divided into 7 groups of 6 animals each: (1)MES control (2,3) Standard drug in therapeutic and sub-therapeutic doses given i.p (4,5,6) ES 100,200,400 mg/kg dosage given p.o (7) Sub-therapeutic dose of standard drug given along with most effective dose of ES. Extract was given orally 60 minutes and standard drug (Phenytoin) was given intaperitoneally 30 minutes prior to MES. As oxidative stress is one of the major known risk factor for causing convulsive disorders, the level of free-radicals were measured in different group of animals by in vivo methods.

It was found that ES 400mg/kg dose showed maximum protection (50%), this when combined with sub-therapeutic dose of Phenytoin could produce even better protection (83%). By spectrophotometry it was found that free -radical level was significantly reduced in all test groups showing ES extracts anti-oxidant effect. So it could be concluded that if low dose conventional anticonvulsants are supplemented with supplementary herbal medicine the adverse effects associated with these drugs could be minimised.
**Title:** Antihyperlipidemic property of Girardenia heterophylla flower in streptozotocin (STZ) induced diabetic rats

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**Abstract:**

Dislipidemia is an altered serum lipid profile which includes hypertriglyceridaemia, hypercholesterolemia and reduced high density lipoprotein. It results into atherosclerosis and other complications. Although antihyperlipidemic agents are available but the long term use may have drawbacks, hence herbal formulations are getting more importance. With this background, the study aims to evaluate antihyperlipidemic activity of the hydroethanolic extract of Girardenia heterophylla flowers in STZ induced diabetic male albino Wistar rats.

The animal experimentation was approved by IAEC of SMIMS (MC/SMIMS/IAEC/05/2016). Rats of 150 to 200 gm were housed for 1 month. Hyperlipidemia was induced by single dose of STZ (65mg/kg b.w.). Normoglycemic ($\delta \beta^\prime = 6$) and hyperlipidemic rats ($n=24$) were evaluated in this study. Hyperlipidemic rats were divided into four groups ($\delta \beta^\prime = 6$). Positive control was treated with simvastatin (30mg/Kg b.w.), test group was treated with extract (400 mg/Kg and 600 mg/Kg b.w.) and the untreated control was fed with commercial chow. After 28 days of treatment, rats were euthanatized and the blood was collected for analysis. The serum was analyzed for total cholesterol, high density lipoprotein, low density lipoproteins and triglycerides.

Serum lipid profile as compared to normolipidemic rats showed significant ($p<0.05$) antihyperlipidemic effect as well as improvement in HDL. The extracts also showed dose-dependent activity. The lipid lowering action of Girardenia heterophylla extract may be attributed by the presence of different phytocompounds in the extract.

Key words: Antihyperlipidemic, Girardenia heterophylla, Simvastatin

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**Title:** Formononetin ameliorate diabetic cardiomyopathy in type 2 diabetic rats

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**Abstract:**

Diabetic cardiomyopathy is the major complication in diabetics associated with morbidity and mortality worldwide. The risk of development of heart failure is 2 to 8 time more in type 2 diabetic people as compared to non-diabetic people. Formononetin is an isoflavone present in legume plants and is known for its anti-inflammatory, antioxidant and lipid lowering effect. Aim
of the present study was to find out efficacy of formononetin treatment in type 2 diabetic cardiomyopathy. Diabetes was induced in rats by modification of diet for 2 weeks using high fat diet and later administration of 35 mg/kg of streptozotocin in rats. Formononetin was orally administered at the dose of 10, 20 and 40 mg/kg for 16 weeks. Plasma glucose and cardiac markers in blood samples were measured. Cardiac hypertrophy, hemodynamic, oxidative stress parameters like superoxide dismutase, reduced glutathione, catalase and malonaldehyde were performed at the end of study. SIRT1 expression in cardiac tissue was studied by immunohistochemistry. Histopathological changes in cardiac tissue were studied with Masson trichome and Hematoxylin eosin staining. Formononetin treatment showed significant reduction in hyperglycemia along with improvement in lipid profile in diabetic animals. Formononetin treatment also showed reduction in concentration of CK-MB, LDH and AST in diabetic animals. Formononetin treated animals showed significant reduction in cardiac hypertrophy along with improvement in hemodynamic parameters. Formononetin treatment also increased SIRT1 expression in cardiac tissue after treatment along with reduction in oxidative stress and cardiac hypertrophy. Results of study indicate that formononetin has potential cardioprotective effect in type 2 diabetic rats by controlling hyperglycemia, reducing oxidative stress and increasing SIRT1 expression. Thus, Formononetin can be considered as potential therapeutic agent for management of diabetic cardiomyopathy.

Sub-Code-1421

Ref No: R9fn27lZ

Title: Pharmacodynamics of Fingolimod on Blood Brain Barrier

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Abstract:
Fingolimod (FTY720) is a derivative of myriocin, an immunosuppressive natural product. Its activated form (fingolimod-phosphate), a structural analog of sphingosine-1-phosphate (S1P), is known to affect the various subtypes of S1P receptors. In 2010, US FDA announced the approval of FTY720 for the treatment of Multiple Sclerosis (MS). Owning to its hydrophobic and lipophilic nature, evidence have shown that it is able to cross the blood brain barrier (BBB). Studies have also provided evidence indicating that it is able to ameliorate symptoms of MS, after crossing the BBB, by its action on various neural cells. For example, several groups have demonstrated that it is able to decrease the activation of astrocytes, thus, preventing damage to BBB. Moreover, the disruption of BBB is also observed in many other neurological disorders, for example, Alzheimer's disease (AD) and epilepsy. Thus, it is crucial to have a better understanding the mechanistic action of FTY720, so that we can develop specific therapeutic treatment(s) to maintain the BBB. A mouse brain cell line (bEnd.3) was used to evaluate the effect of FTY720 on brain endothelial cells. Cells were cultured on adherent monolayers on a 96-well gold electrode array for 5 days, then treated with conditioned medium harvested from astrocytes with or without FTY720. The barrier integrity was measured using electrical cell-substrate impedance sensing (ECIS). Our data
show that treatment of bEnd.3 with FTY720 significantly increases barrier resistance during first hour post stimulation. Furthermore, we demonstrated that short-term endothelial integrity is maintained by the action of S1P1, while long-term endothelial integrity is maintained by the action of S1P4, and possibly through S1P2. Cumulatively, our study suggests that the development of S1P1 and S1P4 agonists diseases associated with BBB disruption. represents a promising therapeutic approach for the treatment of neurodegenerative

Sub-Code-1422

Ref No: FPviQRID

Title: Phytopharmacological screening of Bauhinia Acuminata (l.) in mice with special reference to its efficacy on induced arsenicosis in black bengal goats.

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Abstract:

Chronic arsenicosis has become a worldwide menace in recent years affecting both humans and animals alike. To tackle this problem, the present study was undertaken in the form of two separate parts along with the objective of assessing the phytopharmacological properties of stem bark extract of Bauhinia acuminata L. (BSE) in 60 Swiss Albino Mice as well as determining the efficacy of Bauhinia acuminata L. stem bark powder (BSP) against sodium arsenite induced arsenic toxicity in 9 Black Bengal Goats. Part I: The results showed that BSE at a dose of 600 mg/kg b. wt. had prominent analgesic, anticonvulsant and depressant activity in mice. The preliminary phytochemical screening of BSE revealed the presence of alkaloids, saponins, terpenoids, phenolic compounds, tannins, flavonoids, reducing sugars and glycosides. Quantitative estimation of phenolics, tannins and flavonoids in aqueous BSE were found to be 12.8 mg Gallic Acid Equivalence (GAE)/g of aqueous stem bark extract, 145 mg Tannic Acid Equivalence (TAE)/g of aqueous stem bark extract and 5g Quercetin Equivalence (QE)/g of aqueous stem bark extract.

Part II: The results showed that ALT, AST, BUN, CRT were significantly increased whereas SOD and rGSH significantly decreased after induction of arsenicosis in goats. But after treatment with BSP at 700 mg/kg b. wt., the values were vice versa. Speciation of arsenic (i.e. total arsenic, As3+, As5+ and organo arsenic species) in faeces, urine and hair was done using arsenic speciation cartridge and analysed in Atomic Absorption Spectrophotometer (AAS). The arsenic burden in arsenicosis induced goats was significantly reduced after treatment with BSP. In a nutshell, the present study suggests that the Bauhinia acuminata L. stem bark has analgesic, anticonvulsant and depressant activity as well as has an ameliorative potential in reducing the arsenic load from the animal body. This finding may be of immense help to the poor farmers and their livestock.
**Sub-Code-1423**

Ref No: njrAB8Hp

**Title:** Pre-clinical evaluation of Anticholelithogenic effect of Cocos Nucifera

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**Abstract:**

Gallstone disease is one of the most frequent and expensive gastroenterological diseases. The present treatment have limitations, and the chances of reoccurrence of stones are higher upon their discontinuation. Hence, it is desirable to search for alternative non-invasive treatments to regress the cholesterol gallstone (CGS) and its related complications. Hence, this study was aimed to validate the anti-cholelithogenic activity of Cocos nucifera in preclinical models. The anti-cholelithogenic effect of methanolic extract of Cocos nucifera (MECN) was evaluated by effect on gallbladder smooth muscle strip (in vitro) and anti-lithiasic assay (in vivo). MECN exerted contractile effect on isolated gallbladder muscle strip indicating its probable anti-cholelithogenic effect. It significantly normalized the altered lipid profile and organ weights in antilithiasic assay which confirmed its beneficial effect on CGS. These effects of MECN can be attributed to the presence of various phytoconstituents like alkaloids, flavonoids tannins, steroids. The study proved that MECN can be potential remedy for cholinelethiasis which should be further confirmed by clinical data.

**Sub-Code-1424**

Ref No: xnFYQnfk

**Title:** Effect of Papaverine on psychosis associated Diabetes Mellitus in Sprague Dawley rats

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**Abstract:**

Papaverine an alkaloid isolated from opium is a potent, specific inhibitor of PDE-10A. PDE-10A is almost exclusively expressed in the striatum and its inhibition results in increase in cAMP and cGMP, which is a novel therapeutic avenue in the discovery of antipsychotics. Search of novel targets for insulin secretion lead to recent discovery of the high expression of PDE-10A in pancreatic islets. Hence the present study was designed to evaluate the antipsychotic and antidiabetic activity of papaverine in high fat diet&apomorphine induced psychosis associated diabetes mellitus in SD rats. Male Sprague Dawley rats(130-150gm) were divided into four groups with six animals each. The control group animals were fed with standard chow diet whereas the negative control group and the two treatment groups were fed with high fat high sucrose diet(HFHSD) for a period of 6weeks along with weekly
administration of apomorphine (1mg/kg.s.c). Papaverine treatment was started after three weeks i.e., after confirmation of glucose intolerance by performing oral glucose tolerance test. The treatment was continued for a period of three weeks. During the study behavioural parameters were estimated weekly once and at the end of the study the biochemical parameters were estimated.

Sub-code-1425

Ref No: bjMVGBIa

Title: Sesamol protects against statin-induced pancreatic beta-cell death without improving the impaired glucose utilization: In vitro studies

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Abstract:

Background: Clinically, statins are used to prevent primary and secondary cardiovascular diseases and associated mortality. Despite its commercial success, statins are now known to cause diabetes probably by inhibiting insulin secretion from pancreas or causing insulin resistance in the muscle cells. We hypothesize that sesamol possessing antioxidant potential and hypolipidemic activity can ameliorate statin-induced diabetes. The study aims to investigate the protective effect of sesamol against statin-induced pancreatic beta-cell death and insulin resistance in muscle cells.

Methodology: We investigated the effect of sesamol, statin, and insulin treatment on 2-NBDG uptake assay in L6 myotubes. The cells were pre-treated with sesamol and then exposed to statin. Next, we tested the protective effect of sesamol against statin-induced cell death in beta TC-6 cell line.

Results: Flow cytometric analysis revealed that simvastatin (1ÂµM) and atorvastatin (1ÂµM) decreased the 2-NBDG uptake in L6 myotubes in the presence of insulin indicating that it can cause impairment of glucose uptake in muscle cells. Pre-treatment with sesamol (12.5, 25 and 50 ÂµM) failed to reverse the statin-induced impaired 2-NBDG uptake indicating that sesamol failed to correct the statin-induced impaired glucose utilization in L6 myotubes. In the next set of experiments, atorvastatin (25 ÂµM) caused 50% death of the beta TC-6 cells (mouse pancreatic beta-cell line) which was inhibited by pre-treatment with sesamol (12.5, 25 and 50 ÂµM). This suggested that sesamol could ameliorate statin-induced beta-cell death.

Conclusion: The present study demonstrates the selectivity of sesamol in inhibiting statin-induced diabetes by preferably acting on the pancreatic beta cells rather than on the muscle cells. Further studies are underway to identify the protective mechanism of sesamol against statins in pancreatic beta cells.
**Sub-Code-1426**

Ref No: W05x06eY

**Title:** Effectiveness of Aloe Verain reversal of gentamicin-induced nephrotoxicity in albino wistar rats : An experimental study

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**Abstract:**

Objective- To evaluate effectiveness of Aloe Verain reversal of gentamicin induced nephrotoxicity in wistar rats.

Method- Nephrotoxicity was induced in healthy 72 wistar rats both genders by injecting gentamicin 40mg/kg single dose for 5 days, intra-peritoneally (i.p). Subsequently rats were divided into two groups, group I received oral Aloe Vera (2mg/kg/100gm) and group II received oral normal saline from fifth day onwards. Histo-pathological changes in renal tissue and biochemical parameters (BUN and serum creatinine) were compared between two groups.

Results-The average time for mean BUN and serum creatinine SCr levels to return to its baseline level not statistically different.

Conclusion-Despite demonstrated nephroprotective properties against gentamicin induced nephrotoxicity, it does not seems to reverse changes in established cases of gentamicin nephrotoxicity in wistar rats.

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**Sub-Code-1427**

Ref No: CRimCEO7

**Title:** Cerebrospinal Fluid Containing Tongqiao Huoxue Decoction Protects Brain Microvascular Endothelial Cells from Oxygen Glucose Deprivation /Reoxygenation Injury through VEGF-VEGFR2/FAK/Paxillin Signaling Pathway

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**Abstract:**

Tongqiao Huoxue Decoction (TQHXD) is a traditional Chinese medicine prescription widely used in the treatment of cerebralvascular diseases. However, the potential mechanisms of TQHXD on treating ischemic stroke remain largely unexplored. The aim of this study was to evaluate the protective effects of cerebrospinal fluid (CSF) containing TQHXD on oxygen-glucose deprivation/reoxygenation (OGD/R)-induced brain microvascular endothelial cells (BMECs) and probe into its underlying mechanisms. After 2 hours of OGD, the cellular oxygen and glucose supply rapidly recovered for 24 hours to imitate cerebral ischemia-reperfusion injury in vivo. The protective effects of CSF containing TQHXD on cellular structure were assessed by cellular morphologic and ultrastructural changes, Zonula occludens-1 (ZO-1) protein expression and transendothelial electrical resistance (TEER).
values. Cellular function changes were assessed by measuring cellular nitric oxide (NO) levels, lactate dehydrogenase (LDH) activity, fluorescence intensity of reactive oxygen species (ROS), and tissue-type plasminogen activator (tPA) generation. It was found that CSF containing TQHXD effectively reversed the changes in cell structure and function induced by OGD/R injury, reduced intracellular calcium influx, inhibited apoptosis, and decreased cell membrane permeability of BMECs. Meanwhile, CSF containing TQHXD promoted the expression of CD34 and vascular endothelial growth factor (VEGF) and observably increased the protein levels of FAK and Paxillin. These results suggest that CSF containing TQHXD protects BMECs from OGD/R injury, possibly by promoting angiogenesis through the VEGF-VEGFR2/FAK/Paxillin signaling pathway.

Sub-Code-1428

Ref No: qKrqWDTN

Title: In vitro cytotoxicity of cardamom oil and carrot seed oil on mouse fibroblast and urinary bladder cell line.

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Abstract:

Objective: Essential oils namely cardamom oil and carrot seed oil were used for cancer studies. The objective of the study was to evaluate the cytotoxicity of selected essential oils on mouse fibroblast and urinary bladder cell line using Microculture tetrazolium test (MTT).

Materials & Methods: Phytochemical analysis as well as acute oral toxicity tests were carried out in female albino mice using selected essential oils according to Organisation for Economic Co-operation and Development (OECD) guidelines 425. In vitro anticancer activity of test drugs were performed using L929 and RT4 cell line.

Results: Phytochemical analysis has shown the presence of carbohydrates and flavonoids in cardamom oil, whereas presence of carbohydrates, alkaloids, flavonoids, steroids and glycosides were observed in carrot seed oil. Acute toxicity studies showed both the essential oils were found to be safe at 2000mg/kg body weight. Cytotoxic results have shown that carrot seed oil exhibited strongest cytotoxicity on L929 cell line, with a (IC50) value of 171.9 Âµg/ml compared to standard. Cardamom oil showed strongest cytotoxicity on RT4 cell line with IC50 value of 205.5Âµg/ml as compared to standard.

Conclusion: The studies reveal that different concentrations of cardamom oil and carrot seed oil have shown statistically significant (**P < 0.0001) anticancer activity.

Keywords: Anticancer activity, carrot seed oil, cardamom oil, cancer cell lines, MTT assay.
Title: Effect of the ethanolic extract of Gloriosa Superba Linn (Langli) roots on reproductive system in female rats

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Abstract:

Objective: The objective of the present study was to evaluate the activity of ethanolic extract of roots of Gloriosa superba Linn (EyGS) on reproductive system in female Wistar rats.

Material & Methods: EyGS was administered to immature ovariectomized (OVX) Wistar rats at two different doses (viz., 20 and 40 mg/kg body weight, p.o.). The uterotrophic assay, deciduoma formation were done to evaluate estrogenic and progestogenic activity. The parameters evaluated were vaginal cornification, hormonal level, uterus weight, decidual weight, biochemical parameters and histopathology of the uterus along with in vitro uterotonic activity.

Results: The estimation of EyGS on vaginal cornification, estrogen induced uterotrophic assay and deciduoma model demonstrated vaginal opening without cornified cells, decrease in uterine weight, uterine proliferation in histopathology and reduction in deciduoma formation respectively. Hormonal and biochemical parameters confirmed the above findings indicating antiestrogenic potential and antiprogestogenic potential of EyGS. EyGS produced the contractions of uterus, but compared to oxytocin the height of contractions were less.

Conclusion: The results suggest that ethanolic extract of Gloriosa superba Linn did not show any estrogenic or progestogenic potential by effects on the physical, histological and biochemical parameters of OVX rats. EyGS showed uterotonic activity in vitro and proves the folklore use of Gloriosa superb Linn.

Keywords: Gloriosa superba, uterotrophic assay, estrogenic, vaginal cornification
Iron overload is caused due to excessive dietary iron, diseases like hemochromatosis, and repeated blood transfusion in \( \beta \)-thalassemia major. Iron overload is projected as the most imperative factors in contributing to neurodegeneration. Atypical iron overload has been identified in Alzheimer’s Disease (AD) and Parkinson’s Disease (PD); through involvement in the formation of amyloid \( \beta \) (A\( \beta \)) plaques and abnormal \( \delta \alpha \)-pathology, accumulation of iron in the substantia nigra (SN) and basal ganglia. There have been several postmortem MRI reports of patients with early or late onset AD/PD to demonstrate the accumulation of iron in the A\( \beta \) plaques, SN and cortical region of the brain. Also, numerous genes have been identified for alleviating iron overload in the brain instigating neurodegeneration with brain iron accumulation (NBIA). Overload of iron in the brain can induce oxidative stress, can cause dysfunction of cellular physiology, disrupt Blood brain barrier (BBB), can lead to increase in the levels of hydroxyl anions, Peroxyl/alkoxyl radicals. The generation of these reactive-oxygen species (ROS) can damage cellular organelles and macromolecules such as DNA, proteins and cellular lipid matrix. Recent clinical trials have shown fruitful effects of iron chelators in ameliorating neurodegenerative disorders like AD/PD. Clinically, the fundamental trial for the drug is to penetrate the BBB. Natural antioxidant molecules with lesser Polar surface area can be utilized for the treatment of iron overload induced neurodegeneration. The central idea of this literature search, is to study the mechanism of iron overload specifically in the brain directing to AD/PD, their genetic susceptibilities, the detrimental consequences of iron overload leading to neurodegeneration, iron induced neuronal apoptosis and treatment strategies restraining the same.

Key words: Mitochondrial dysfunction; Cognitive decline; Neuronal apoptosis; Iron-Sulfur clusters; Flavonoids; Iron chelators.

**Sub-Code-1431**

**Ref No: vGJx6x5j**

**Title:** Nimbolide loaded Niosomal gel formulations enhanced the dermal penetration and exhibited superior anti-psoriatic effects

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**Abstract:**

**Introduction:** Psoriasis is a chronic autoimmune skin inflammatory disease characterized by redness silvery scales and thickening of the skin.

**Aim and objectives:** The objective of the study is to evaluate the protective effects of Nimbolide Niosomes (NIM Nio) in EGF/LPS induced in vitro and Imiquimod (IMQ) induced in vivo psoriasis model in BALB/c mice and to decipher the molecular mechanism involved.

**Methods:** MTT assay, Cell cycle analysis, JC-1 staining, Annexin-V dead cell apoptosis assay, staining techniques includes AO/EB, DAPI, DCFDA and MitoSOX red were employed. In vitro hyperproliferation state was mimicked by EGF stimulation, whereas, in
vivo studies were performed by inducing psoriasis with imiquimod, a TLR-8 receptor agonist develops psoriasis like symptoms. Expressions of various proteins and cytokine levels were determined by western blotting and ELISA, respectively.

**Key findings:** In the current study, NIM Nio was developed to confer the capability to enhance dermal penetration of nimboide, which is a potent anti-inflammatory molecule. NIM Nio were characterized for particle size, zeta potential, TEM, Entrapment efficiency, dermal distribution and Stability study. NIM Nio treatment exerted significant reduction in both cellular and mitochondrial ROS generation. Furthermore, NIM Nio treatment effectively abrogated the hyperproliferation of keratinocytes through the induction of apoptosis. A significantly attenuation of psoriatic severity (redness, scaling and thickness) was observed with reduction in splenomegaly. Moreover, we found elevated levels of antioxidants (GSH) with reduction in MDA and NO levels as compared to nimboide free drug. NIM Nio treatment was found to abrogate the EGF and IMQ stimulated phosphorylation of various inflammatory mediators such as NF-κB, MAPKs and STAT3.

**Conclusion:** Taken together, our results demonstrated that NIM Nio exhibited anti-proliferative, antioxidant and anti-inflammatory effects in psoriasis and niosomes may serve as a potent

**Sub-Code-1432**
**Ref No: 0LxDdCXc**

**Title: Natural products from NE India for neurodegenerative disorders**

**Author Name: Chandana Barua**

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**Abstract:**

Ethnopharmacological studies on some lesser known plants from NE India for neurodegenerative disorders.

North east India comprising of eight unique states is a biodiversity hot spot. Due to this resurgence of medicinal plants, scientists, instead of limiting their work on already known established plants, newer and lesser known medicinal plants are being explored, and scientifically validated. We have studied few plants collected from Karbi along , Arunachal Pradesh, Nagaland, Manipur, Sikkim where they are very popular among the local people. Some results are very interesting and worth studying. Zanthoxylum armamatum is a very useful plant. We have shown its antidepressant and memory enhancing activity in animal model. Conyza bonarensis is rather a weed, widely distributed in Asia, North America and Europe. It is mainly grown as ornamental plant in gardens of India. Its antidepressant and mild memory enhancing property, which is a serendipity. A popular plant, Elsholtzia communis which the local people of had shown excellent adaptogenic activity in animal model of stress as a polyherbal formulation. Gnetum gnemon an omnipotent plant extremely popular among few tribes of North East India, Nagaland, Manipur and Karbi Along districts, has antimicrobial, antitoxic, antioxidant, antiquorum sensing and antisenescence properties owing to these phytoconstituents. Our study is continuing on its multiple medicinal properties, mainly on its adaptogenic property. Dysphania ambrosiodes showed
antidepressant property in animal models of depression. In Rig Veda it is reported to cure all
diseases, in Artharva Veda beneficial in piles, clearing worms and as laxatives, Charaka
Samhita cited digestive power, in Sushruta Samhita, mentioned as memory enhancer, in
Rajani ghanu mentions increase in appetite, anti-pyretic and useful in piles, in Ayurveda, to
cure anorexia, cough dysentery diarrhoea, oedema, piles and kills worms. We reported its
antidepressant, memory enhancing property which establishes one of its claim.

**Sub-Code-1433**

**Ref No:** vseAQijv

**Title:** Hepatoprotective and nephroprotective effects of silymarin in a rat model of
cyclosporine-induced organ damage

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**Abstract:**

Cyclosporine A (CsA), a highly effective immunosuppressive agent, is often used as a second line
drug due to its toxicity, mainly hepatotoxicity and nephrotoxicity. In view of the significant role
of mediators of oxidative stress and inflammation in organ damage, the present study was carried
out to evaluate the protective effect of silymarin in CsA induced hepato-renal damage. The study
was carried out in rat model where 5 groups were included (n=6 per group): normal control,
experimental control (EC; CsA alone, 25 mg/kg in olive oil), CsA + silymarin (50 and 200
mg/kg) and CsA + vitamin E (100mg/kg). All the drugs were given orally, daily for a period of 21
days. The effect of these drugs on serum markers of liver and kidney function, on oxidative stress
markers (thiobarbituric acid reactive substances, glutathione and superoxide dismutase) as well as
inflammatory markers (nitrite, myeloperoxidase, tumour necrosis factor-Î±, prostaglandinE2),
tissue histology and immunoreactivity for cyclooxygenase-2 and inducible nitric oxide synthase
was evaluated. Co-administration of silymarin with CsA for 21 days resulted in significant
improvement in liver and kidney functions when compared to EC group. Silymarin also produced
a dose-dependent reduction in the levels of markers of oxidative stress and inflammation. These
findings were further strengthened by preservation of histoarchitecture and marked reduction in
immunoreactivity of inflammatory markers. The hepatoprotective and nephroprotective effects of
silymarin were comparable to that of vitamin E. The findings of present study suggest that co-
administration of silymarin has a potential in preventing the liver and kidney toxicity produced by
long-term treatment with CsA alone.

**Sub-Code-1434**

**Ref No:** PcorChJM

**Title:** Evaluation of antidepressant and anxiolytic effect of minocycline in alcohol
abstinence induced depression model in mice

**Author Name:** Arun Bhangare

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Abstract:

Introduction â€“ Depression is one of the common comorbidity seen in chronic alcohol use disorder. Also alcohol withdrawal induces depression and anxiety which is associated with alcohol relapse. Minocycline, a tetracycline derivative has shown antidepressant and anti-anxiety effect in preclinical models. However, their effect on alcohol withdrawal induced depression and anxiety has not been studied. Therefore current study has been undertaken to evaluate the effect of minocycline on alcohol abstinence induced depression in mice.

Methodology â€“ C57bl/6 mice were given two bottle choice (alcohol + water) for 28 days. During alcohol abstinence of 14 days mice were treated with low dose (10mg/kg), intermediate dose (30mg/kg), and high dose (50mg/kg) of minocycline and evaluated for behavioural changes using forced swim test (FST), tail suspension test (TST) and open field test (OFT) on 14th day of abstinence.

Result -There is significant decrease in immobility time (p<0.05) in high dose minocycline group (82.75±19.09) as compared to vehicle control group (128.12±35.44) in forced swim test. In tail suspension test also significant decrease in immobility time (p<0.05) was seen in high dose minocycline group (83.75±18.61) as compared to vehicle control group (122.25±18.51). The water and alcohol intake was found to be comparable among all groups.

Conclusion Minocycline in higher dose (50mg/kg) has shown effect in alcohol withdrawal induced depression in abstinence induced two bottle choice model in mice.

Sub-Code-1435

Ref No: VovbXUAK

Title: Effect of Sauropus Androgynus leaves extract on metabolic rate and lipid accumulation in zebrafish larvae

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Abstract:

Background: Obesity is a chronic metabolic disorder which is a major risk factor for diabetes and cardiovascular disease. Obesity is a result of an imbalance between calories intake and expenditure which leads to fat accumulation. Natural products are an excellent yet currently underutilized source of chemical diversity for drug discovery. Bioactive compounds derived from natural sources have given rise to a wide range of human therapeutics. Sauropus androgynus is claimed and is in folklore use for the treatment of obesity that calls for scientific validation. 10/10/2019 15:08

Objectives: The present study was aimed to investigate the effect of S. androgynus leaf extract on metabolic rate & lipid metabolism in zebrafish larvae.

Brief methodology: The fresh leaves of S. androgynus were collected from the herbal garden of ICMR- NITM, Belagavi and authenticated, voucher specimen was deposited in the
herbarium (Accession number RMRC 1501). The dried leaves were subjected to aqueous extraction (Decoction).

The extract obtained was subjected to preliminary/qualitative phytochemical investigation and found to contain alkaloids, carbohydrates, saponin glycosides, tannins, terpenoids, phenols, resins, aminoacids and vitamins. Zebrafish larvae of 72 hpf were exposed to aqueous extract of S. androgynus (SAAE) at concentrations of 25, 8.3 and 2.5 μg/ml for 1h and quantified by following previously published/standardized protocol for metabolic rate by reading absorption at 570 nm measured at 10-min interval for 1h. Zebrafish larvae 5dpf were exposed to SAAE (25, 8.3 and 2.5 μg/ml) for 24h and subsequently fixed and stained with 0.5% Oil O red and imaged for quantifying lipid accumulation.

**Results:** The extract exhibited desirable pharmacological effects such increased metabolic rate and lipid lowering effect in zebrafish in a dose dependent manner from 2.5 to 25 μg i.e., within the safe dose range (less than MNLC).

**Conclusion:** Preliminary evidence for anti-obesity activity of S. androgynous was established in the zebra-fish model. Further studies are under progress.

**Sub-Code-1436**

Ref No: QGX2tFSg

**Title:** In vitro antioxidant, in vivo anti-inflammatory and antinociceptive activities of Ophioglossum thermal.

**Author Name:** Xue-Qiong Zhang, Su-Ying Cui, Jin-Hwa Kim, Jun-Tae Baeb, Jung-Young Ohb, Geun-Soo Leeb, Hyeong-Bae Pyob, Yong-He Zhanga,*

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**Abstract:**

Objective: Ophioglossum thermale is a Chinese medicinal plant traditionally used for the treatment of inflammation including pediatric pneumonia, boils swollen poison etc.. This study was performed to provide evidence of its antiinflammation activity in order to confirm its popular use that could be related to inflammation. Method: Results: Fractions from Ophioglossum thermale were extracted with five different polar solvents using Soxhlet type extractor. EtOAc fraction exhibited the best performance in DPPH assay, NBT assay and lipid peroxidation assay, while crude extract, BuOH, water and MC fraction also showed good antioxidant effects. The order of antioxidant capacity of each fraction is EtOAc > BuOH > MC > water > hexane and this order is consistent with the phenolic contents of each fraction. Furthermore, all the fractions of Ophioglossum thermale showed more potent activity than EGCG, a well known antioxidant. After the treatment of EtOAc fraction at 0.005 and 0.01% (g/100ãŽ–), we observed significant decrease of ROS induction after UVB irradiation in HDFs. In carrageenan-induced edema model, EtOAc fraction showed inhibitory effect. Conclusions: These results suggested that the antioxidant activity of Ophioglossum thermale correlates closely with their phenolic contents and demonstrated that extracts of Ophioglossum thermale have excellent antioxidant activities and thus it has great potential as a source for natural health products. This study was supported by national scientific &
technological major special project (2018ZX09301028-003), the National Natural Science Foundation of China (no. 81573407, 81302746 and 81202511).

Key Words: Ophioglossum thermal; antioxidant

**Sub-Code-1437**

Ref No: CsaZlthI

**Title**: Neuroprotective of Convolvulus Pluricaulis in experimentally induced cognitive deficit autistic rats: Possible Antioxidant mechanism.

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**Co-Author Name**: Singla Rubal, Rohit Rajput, Phulen Sarma, Medhi Bikash

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**Abstract**:

**Introduction**: Autism is a group of complex neurodevelopmental disorder of unknown etiology which manifests with problems like social interaction, language, communication and behaviour deficit like stereotype and repetitive behaviour. it is well known memory enhancer in Alzheimers™. Present study design to investigate the neuroprotective effect of Convolvulus pluricaulis,

**Method**: Animals were divided into six groups. 1 ( Normal Control, received only Normal saline 0.9%), 2 (VPA 600mg/kg on PND 12.5), 3 (Pups, Risperidone 2.5 mg/kg, PND 23 to 43) and 4, 5 and 6 (Convolvulus Pluricaulis 100, 200,400 mg/kg PND 23 to 43). Cresyl violet used for nissl staining. behavioral and biochemical parameters and data was analyzed by SPSS version 22 software (p < 0.05 taken as significant).

**Result**: Treatment group showed significant improvement in the development of pups i.e. social interaction and behavioral (checked by Three chamber sociality test ) and significantly reduced oxidative stress . In Group 1 hippocampus examination show normal size , shape and normal arrangement of neuronal cells , Group 2 revealed complete loss of pyramidal neuron in CA1, CA2 and CA3 (Cornu Ammonis areas) region while extensive neuronal loss and gross neuronal shrinkage. Group 3 revealed Hippocampal section revealed minimal loss of healthy neurons and mild pycnosis in CA1 region histopathology of CA2 region showed minimal loss of healthy neurons and CA3 region and normal morphology of neuron was observed in DG region. Treatment group 4 revealed reduce thickness of pyramidal cell layers with mild apoptosis in CA1 CA2 and CA3 regions while gross shrinkage of neurons was observed in DG regions.

**Key words**: Autism, Valproic Acid , Convolvulus Pluricaulis, Cresyl violet, Hippocampus

**Sub-Code-1438**

Ref No: FWFPUdkU

**Title**: Evaluation of anti-diarrhoeal activity of Ayurvedic formulations Mustakaadipramathya, Musta (Cyperusrotundus Linn.) pramathya, and Indrayava (Writhiatinctoria R.Br) pramathya.
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Abstract:

Aim: The Ayurvedic formulations, Mustakaadipramathya contains Musta (Cyprus rotundus Linn) and Indrayava (Writhiatinctoria R.Br), are reported to be antidiarrhoeal, antispasmodic and antimicrobial in Sharangdhar Samhita. Since, no scientific study had been performed on these formulations, an attempt was made to study their anti-diarrhoeal activity.

Method: Castor oil induced diarrhoea- The male Wistar rats were divided into 6 group of 6 animals each. Group I-Vehicle control, Group II-Castor oil (Disease control), Group III-Standard group (Atropine, 3mg/kg), Group IV-Mustakaadipramathya (Musta+Indrayav)1.7 ml for 200g rats, Group V- Musta, Group VI-Indrayava. One hour post treatment, castor oil (3 ml, p.o.) was administered. The parameters measured were faecal weight (dry and wet) and moisture content, time of induction of diarrhoea, frequency of diarrheal episodes, duration of diarrhoeal episodes. Biochemical parameters included serum electrolyte and serum CRP.

Charcoal transit model- The groups were treated as mentioned above followed by 2ml castor oil and 1ml of marker (10% charcoal suspension in 5% gum acacia). The rats were sacrificed after 1h and the distance travelled by charcoal meal from the pylorus was measured.

Result: Significant decrease in onset of diarrhoea and significant increase in frequency and duration of diarrhoea in disease control group was observed as compared to vehicle control group (p<0.001). Musta + Indravaya showed significant increase in onset of diarrhoea and significant decrease in frequency and duration of diarrhoea as compared to disease control. CRP was significantly decreased in all treatment groups as compared to disease control (p<0.001). No treatment had any effect on serum levels of Sodium, Potassium and Calcium. In charcoal transit model, length travelled by charcoal was significantly reduced in Atropine (p<0.001) and no effect was seen in all other treatment groups.

Conclusion: Musta indrayava exhibited significant antidiarrheal effect but it is less potent than Atropine, all the treatment exhibited anti-inflammatory effects as observed by reduced CRP.

Sub-Code-1439

Ref No: PC58Xttl

Title: All-Trans Retinoic acid (ATRA) ameliorates chemotherapy induced peripheral neuropathic pain in rats.

Author Name: Haritha Pasupulati

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Abstract:
Painful peripheral neuropathy is the major dose-limiting side-effect of paclitaxel therapy. There is no effective treatment for paclitaxel-induced peripheral neuropathic pain owing to poor understanding of pathophysiological mechanisms. Growing evidence indicate oxidative-nitrosative stress is one of the leading factor causing neurovascular dysfunction and myelinated fibre atrophy characteristic of paclixel-induced peripheral neuropathy. Oxidative stress mediated neurodegeneration can execute through microtubular disruption, depletion of antioxidant defences, ion channel activation, neuroinflammation leading to neuronal death. It is postulated that improving antioxidant defences might be a suitable target in controlling oxidative and nitrosative stress mediated damaging effects. All-Trans Retinoic acid (ATRA) is an active metabolite of retinol (vitamin A). Retinoids are mainly involved in regulation of cell development, cell differentiation, proliferation, embryogenesis, vision, reproduction, maintenance of immune function. Retinoids are natural or synthetic compounds related to retinoic acid that act on retinoic acid receptors (RARs) and retioid X receptors. Al-Trans Retinoic acid have shown to reduce the development and/or progression of traumatic and diabetic neuropathic pain (Hernandez-Pedro N 2008) and also chronic constriction sciatic nerve injury-induced neuropathic pain (Krishna Reddy V. Bijjemet al., 2012). Therefore, the present study was designed to study the effect of All-Trans Retinoic acid (ATRA) in paclitaxel-induced peripheral neuropathy. Peripheral neuropathy was induced in rats by administration of paclitaxel (2mg/kg i.p/day) on 4 alternate days. Cold allodynia and thermal hyperalgesia were assessed. The extent of oxidative-nitrosative stress was assessed by estimating the levels of thiobarbituric acid reactive substances (TBARS), catalase and superoxide dismutase (SOD) activity and nitrite levels in spinal cord homogenate. Paclitaxel induced marked allodynia and hyperalgesia in ipsilateral paws, which was associated with significantly elevated oxidative nitrosative stress in spinal cord. Repeated administration of All-Trans Retinoic acid (2.5mg/kg and 5mg/kg, p.o.) significantly reversed the established thermal and mechanical allodynia. These observed ameliorative effects on neuropathic pain symptoms are correlated with the extent of reduction of oxidative nitrosative stress.

Sub-Code-1440
Ref No: 0LxDdCXe
Title: Natural products from NE India for neurodegenerative disorders
Author Name: Chandana Barua
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Abstract:
Ethnopharmacological studies on some lesser known plants from NE India for neurodegenerative disorders.

North east India comprising of eight unique states is a biodiversity hot spot. Due to this resurgence of medicinal plants, scientists, instead of limiting their work on already known established plants, newer and lesser known medicinal plants are being explored, and scientifically validated. We have studied few plants collected from Karbi along, Arunachal Pradesh, Nagaland, Manipur, Sikkim where they are very popular among the local people. Some results are very interesting and worth studying. Zanthoxylum armatum is a very useful plant. We have shown its antidepressant and memory enhancing activity in animal model. Conyza bonarenais is rather a weed, widely distributed in Asia, North America and Europe. It is mainly grown as ornamental
plant in gardens of India. Its antidepressant and mild memory enhancing property, which is a serendipity. A popular plant, Elsholtzia communis which the local people of had shown excellent adaptogenic activity in animal model of stress as a polyherbal formulation. Gnetum gnemon an omnipotent plant extremely popular among few tribes of North East India, Nagaland, Manipur and Karbi Along districts, has antimicrobial, antitoxic, antioxidant, antiquorum sensing and antisenescence properties owing to these phytoconstituents. Our study is continuing on its multiple medicinal properties, mainly on its adaptogenic property. Dysphania ambrosioides showed antidepressant property in animal models of depression. In Rig Veda it is reported to cure all diseases, in Artharva Veda beneficial in piles, clearing worms and as laxatives, Charaka Samhita cited digestive power, in Sushruta Samhita, mentioned as memory enhancer, in Rajani ghantu mentions increase in appetite, anti-pyretic and useful in piles , in Ayurveda, to cure anorexia, cough dysentery diarrhoea, oedema, piles and kills worms. We reported its antidepressant, memory enhancing property which establishes one of its claims.

Sub-Code-1441
Ref No.: JH6PFVWj

Title: Impact of biweekly supplementation of cauliflower leaves products to prevent iron deficiency anaemia in adolescent girls

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Abstract:

Anaemia is the prevalent nutritional deficiency disorder in the world. It affects 2 billion people globally and 80percent of the population in the developing countries. Anaemia effects adolescent girls critically by decreasing their capacity to do physical work, affects their growth as a result they are not well prepared for upcoming pregnancies and motherhood. National Family Health Survey (NFHS -4) reports indicated wide rural urban disparity in prevention of anaemia.

Food based approaches are recognized as an essential part of an urgently needed more comprehensive strategy to combat Iron & other micronutrients deficiencies. The present study was undertaken to study the effect of biweekly supplementation of designer foods developed from underutilized green leafy vegetable that is Cauliflower leaves to prevent Iron deficiency anaemia in adolescent girls aged between 11-14 yrs. A total of 473 adolescent girls of Telangana Social Welfare Residential Schools of Hyderabad were screened for haemoglobin levels, anthropometric measurements & clinically examined for signs & symptoms of Iron deficiency anaemia. Out of these 120 anaemic adolescent girls were selected for supplementation and Deworming was done before supplementation. The supplementation groups were divided into Dry spice powder plus Vitamin C tablet group and Fresh Chutney plus Vitamin C tablet group. Control groups were imparted Nutrition Education only. Knowledge Attitude & practices regarding anaemia among adolescent girls were also assessed. Supplementation was carried out for 3 months biweekly. Haemoglobin levels were assessed initially, after one and half month, and at end of three months of supplementation. Follow up Nutrition Education was imparted to all the groups. On supplementation positive results were observed in the hemoglobin levels, anthropometric measurements in both the supplemented groups.
Title: Chalcone derivatives (1,2,3-triazole) are the therapeutic agents for the human lung adeno carcinoma: In vivo and In silico approaches

Author Name: Raghavenderm

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Abstract:
Lung cancer is the most commonly diagnosed cancer annually since 1985. Worldwide, there are more than 1.61 million new cases of lung cancer per year with ~1.38 million deaths, making lung cancer the leading cause of cancer-related mortality. In India, ~67,000 new lung cancer cases and ~65,000 incidences were reported each year. Chalcone is naturally occurring compounds exhibiting broad-spectrum biological activities including anticancer activity through multiple mechanisms. In the present study, a series of (ten) novel Chalcone based 1,2,3-triazole heterocyclic derivatives are synthesized. All compounds are evaluated for antibacterial activity using doxorubicin as standard drugs and identified as promising compounds for further studies. The products are screened for their anticancer activity against A-549 cell line (human lung adenocarcinoma) using MTT assay. Among these, eight were significant anti-cytotoxic activity against the A-549 cell line at a very low concentration. Further, eight compounds were subjected to molecular docking analysis of RRD and QPLD with MM/GBSA were performed with the co-crystal structure of human placental aromatase complex with breast cancer drug exemestane (PDB ID: 3S7S). The docking analysis revealed that, synthesized compounds have the tiniest docking scores when compared with existed drugs of doxorubicin and exemestane. Moreover, the active site residues of 3S7S was tightly bound with eight chalcone derivatives. Among, two compounds of (E)-1-(2-ethoxy-4-((1-(4-fluorophenyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)-3-(4-methoxyphenyl)prop-2-en-1-one and (E)-1-(4-(((1-(3-chlorophenyl)-1H-1,2,3-triazol-4-yl) methoxy)-2-ethoxyphenyl)-3-(4-methoxyphenyl)prop-2-en-1-one has significant interactions with 3S7S. Hence, In vivo and In silico analysis were confirmed, the two compounds has excellent cytotoxic activity against with A-549 cells due to the compounds exhibited high electronegative aryl-substituted florof group and chloro group played a vital role against human lung cancer. 11/15/2019 8:43

Keywords: Lung adeno carcinoma, Chalcone derivatives, MTT assay, Anti-cancer, Docking.
Abstract

Activation of Nrf2/HO-1 pathway has shown to protect against cisplatin-induced nephrotoxicity by reducing oxidative stress. Berberine (BBR), an isoquinolone alkaloid, has demonstrated diverpharmacological activities in various disease models. Based on this hypothesis, present study was undertaken to check the effect of BBR on cisplatin-induced nephrotoxicity and to explore the involved mechanism by studying the expression of Nrf2/HO-1 and p38/JNK/PARP/Beclin-1 protein in renal tissue. Adults male Wistar rats were divided into 6 groups: Normal, cisplatin-control, treatment groups and per se group. Normal saline and BBR (20, 40 and 80 mg/kg; p.o.) was administered to rats for 10 days. A single injection of cisplatin (8mg/kg; i.p.) was injected on 7th day to induced nephrotoxicity. On 10th day, rats were sacrificed, kidney was removed and stored for estimation of various parameters. As compared to cisplatin-control group, BBR treatment improved renal function system and preserved renal architecture. It also diminished oxidative stress by upregulating the expression of Nrf2/HO-1 protein. In addition, BBR attenuated the cisplatin medicated inflammation (reduced NF-κB, TNF-α and IL-6 levels) and apoptosis (increased Bcl-2 and decreased cytochrome-c, Bax, Caspase-3 and TUNLE/PI positive nuclei). Furthermore, it also reduced the phosphorylation of p38/JNK and PARP/Beclin-1 expression in the kidney. Thus, BBR attenuated renal injury by activating Nrf2/HO-1 and inhibiting JNK/p38 MAPKs/PARP/Beclin-1 expression which prevented oxidative stress, inflammation, apoptosis and autophagy in renal tissue. 11/15/2019 19:59

Key words: Cisplatin, Berberine, Nrf2/HO-1, Beclin-1, PARP, JNK/p38 MAPK

Sub-Code-1444

Ref no-DyVE2hCG

Title- ANNONA MURICATA AUGMENTS CELLULAR GLUCOSE UPTAKE VIA AMPK ACTIVATION

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Abstract:

Background: Annona muricata L. (Eng. Soursop, Hin. Hanuman phal) has been reported beneficial for diabetics due to its hypoglycaemic activity. However, the exact mechanism of action by which it lowers blood glucose level is not known as yet. Activation of Adenosine Monophosphate activated protein kinase (AMPK) is known to up regulate biogenesis of GLUT-4 receptors responsible for translocation of blood glucose into the cells. Therefore, activation of AMPK presents an exciting therapeutic target for management of blood glucose levels in diabetes.

Aim: This study investigated biological activity guided extraction and fractionation of leaves and stem bark of A. muricata to explore presence of AMPK activation activity.

Methods: Various extracts of A. muricata leaf and stem were screened for activation of AMPK using invitrogen AMPK alpha [pT172] Elisa kit. The glucose uptake into L6 cells was
measured using fluorescence D-glucose analogue (2-NBDG). Efforts were made to identify active fractions in AMPK activating extract by silica gel gradient columns followed by NMR and LC-MS characterisation.

**Result:** Methanol extract of leaf and acetone extract of stem were found to activate AMPK and increase glucose uptake in L6 cells. Fractionation of active extract applying LC-MS and NMR characterisation revealed presence of acetogenin Murin A, Annocatalin and Annomontacin A as major compounds in leaf and Annomuricin B and corrosolin in stem.

**Discussion:** Leaf as well as stem bark of A.muricata possesses AMPK activating activity and internalization of blood glucose into the cell (L6) by up regulating Glut 4 translocation. Presence of different acetogenins as principal compounds in active extracts may be held responsible for these activities.

**Conclusion:** The fundamentals of insulin resistance and hyperglycemia in diabetes may be tackled by activation of AMPK and up regulation of Glut 4. Various parts of A. muricata may become promising natural therapeutics for this purpose.

**Sub-Code-1445**

**Ref No:** XLOuZCeP

**Title:** Ameliorative effect of pomegranate juice against Isoniazid, Rifampicin and Pyrazinamide induced hepatic fibrosis in rats.

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**Co-Author Name:** Dr. J. Ramesh, Dr. B. Anilkumar, Dr. PShivakumar, Dr. M. Jeevanalatha

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**Abstract:**

The therapeutic efficacy and antioxidant potential of *Punica granatum* (fruit juice extract) were studied against anti-TB drugs (INH+RIF+PZA) induced hepatic fibrosis. A total of twenty four male wistar albino rats of 3 months age were procured for the study. The rats were randomly divided into four groups, consisting of six in each group. Isoniazid @27mg/kg BW, Rifampicin @54mg/kg BW and Pyrazinamide @135mg/kg BW were administered daily orally to groups 2,3,&4 from day 1 to 28. Group 1 was maintained as normal control. Group 2 was kept as toxic control (administered anti-TB drugs, p/o). Groups 3 and 4 were administered (p/o) with Enalapril @5mg/kg BW and *Punica granatum* (fresh juice extract) @1ml/rat, respectively from day 1 to 28.

Body weights were measured, whole blood and serum were collected on day 14th and 28th for estimation of various haematological, biochemical parameters and liver samples were collected at the end of experiment for analysis of antioxidant parameters, TGF β1 and histopathological examination. The results of haematological parameters in the present study revealed that, the means of TEC, TLC, Hb and PCV were significantly (p<0.05) reduced in group 2 and increased significantly (p<0.05) in groups 3 & 4 at different time intervals. The biochemical assays showed a significant (p<0.05) reduction in albumin, globulin and HDL, while a significant (p<0.05) increase in AST, ALT, GGT, total cholesterol and triglycerides, LDL in group 2 when compared with group 1 and there was significant improvement in the treatment groups 3 and 4 at different time intervals.
The liver antioxidant profile revealed a significant (p<0.05) increase in TBARS, while significant (P<0.05) decrease GSH, GST, GPx and SOD values in group 2 when compared to normal control group. Body weights in group 2 significantly (p<0.05) decreased, while relative liver weights were significantly (p<0.05) increased in toxic control group 2. Expression of TGF-β1 levels in liver tissue homogenate were significantly (p<0.05) increased in group 2 when compared to group1 and treatment groups 3 and 4 showed significant improvement. The values of groups 3 and 4 were comparable without any significant difference. The groups 3 and 4 showed significant improvement in all parameters in comparison to group 2 at different time intervals. Histopathological studies revealed degenerative changes, pericellular fibrosis and necrosis in liver of toxic control group. These changes were reversed in groups 3 and 4 that were administered Enalapril and *Punica granatum* juice extract, respectively.

In conclusion, *Punica granatum* was found to possess hepatoprotective action and it was comparable to enalapril which was evident in this study by reducing the hepatotoxic markers and replenishment of membrane and restoration of antioxidant enzymes. The overall beneficial effects of pomegranate juice extract could be attributed to antioxidant actions of the phytoconstituents.

**Sub-Code-1446**

**Ref No:** 0kk4fkBu

**Title:** Development of therapeutic pasta using garden cress seed (*lepidium sativum*) powder

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**Abstract:**

**Background:** Garden cress seed is a naturally grown annual herb throughout the world and very famous in India. The plant, seeds and leaves are playing a major role in therapeutic properties. It holds health benefits like anti-hypertensive, anti-inflammatory, anti-diabetic, anti-microbial and Chemo protective effects.

**Objectives:** Development of ready-to-cook extruded products by incorporating garden cress seed powder.

**Methodology:** Preparation of garden cress seed powder were carried out by cleaning, washing, boiling, washing, drying and dried seeds were milled to flour and stored in air tight containers for further study. Whole wheat flour and maida pasta are the control products. The incorporation of garden cress seed in three different pasta processing was at 10%, 20% and 30% in place of whole wheat and maida in single screw extruder. The organoleptic properties of the product were analyzed by panelists on a 9 point hedonic scale. The proximate analysis of the products was analyzed by using AOAC 1990 standard protocols.

**Results:** The sensory evaluation showed that the three variations such as 100% maida, 10% GC/W and 10% GC/M were highly preferred by the panelists. The accepted samples were subjected for proximate analysis. The results of proximate analysis showed the moisture, protein, fat, ash and carbohydrate content in control, was 13%, 10.73%, 0.64, 0.58% and 77.12 for 10GC/W was 9.58%, 14.03%, 6.49%, 2.41% and 59.26 for 10GC/M was 10.61%, 13.30%, 5.43%, 1.16 and 65.53 respectively. The findings of the study revealed that significance difference (P<0.05) was observed in all the parameters between the pasta samples and control.
Conclusion: As garden cress seed showed therapeutic properties, it can be used as an ingredient for the functional food product development.

Sub-Code-1447

Ref No: VbYsfbf

Title: Murukku and chaand biscuits mixed with jammun seed powder as anti-diabetic product

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Abstract:

Background: Black plum (Syzygium cumin) is a traditional medicinal plant in India. In association to its dietary use, the seed powder were used to treat a range of ailments, the most important being diabetes mellitus. The use of different parts of the black plum plant were also reported for its antioxidant, anti-Inflammatory, neuropsycho-pharmacological, anti-microbial, antibacterial, anti-HIV, antileishmanial and antifungal, nitric oxide scavenging, free radical scavenging, anti diarrheal, antifertility, anorexigenic, gastro protective and anti-ulcerogenic and radio protective activities. A medicinal property of black plum has been gaining popularity over antibiotics due side effects of synthetic antibiotics.

Objective: The Aim of the study was to develop murukku and chaand biscuits mixed with jammun seed powder as anti-diabetic product and sensory evaluation.

Methodology: Murukku preparation: The basic murukku was prepared with a mixture of rice flour (50g), black gram flour (10g), Bengal gram flour (10g), salt (2g), red chili powder(2g), sesame seeds(1g), oil (20g) and ginger garlic past (5g). The mixture was mixed to dough with required quantity of water and deep fried in oil. Four variant of murukku was prepared with 5%, 10%, 15% and 20% of black plum seed powder in place of rice flour.

Chaand biscuit preparation: The basic Chaand biscuit was prepared with a mixture of Maida flour (40g), butter (25g), sugar powder (28g), milk (5 ml), cardamom powder (2g), The mixture was mixed to dough with required quantity of milk and grease the plat with ghee pressed the dough as chapatti and cut the dough with the glass gives the shape of half moon. The biscuit were placed on aluminum plate grease with butter and covered with butter paper, and biscuits were place one by one and then baked oven at 180Â° for 10 minutes and cooled at room temperature. The four variant of chaand biscuits was prepared with 5%, 10%, 15% and 20% of black plum seed powder in place of Maida flour.

Result: The results of sensory evaluation test for Murukku and Chaand biscuits were subjected using the five point hedonic scale. The scores for the basic murukku and its four variations are 3.19, and 4.9. Similarly, the scores of chaand biscuits and its four variations were also recorded as 4.57, 4.39. The proximate composition of the nutrient for the basic murukku, chaand biscuits was shown energy (508k.cal), Protein (6.9g) , Fat(25.29g), CHO(62.96g), Iron(1.83mg), Fiber(0.98mg).
The freeze-dried extracts of Cissampelos mucronata A.Rich possess significant positive effects on male fertility in a rodent model of metabolic syndrome

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Abstract:
The increase in the global prevalence of metabolic syndrome is closely correlated to the increase in the prevalence of male factor infertility. This study investigated the effects of the freeze-dried extract of Cissampelos mucronata a plant species used traditionally used to treat male infertility in a rodent model of metabolic syndrome. Forty-eight freshly weaned Sprague Dawley male rats were randomly assigned into the normal control (normal chow diet), negative control (high fat-high fructose diet), low dose test (200mg/kg freeze dried extract of Cissampelos mucronata) and high dose test (400mg/kg freeze dried of Cissampelos mucronata) groups, positive control (Gonadotropin Releasing Hormone 50ng) and mechanism of action group (400mg/kg Cissampelos mucronata+ Cyproterone acetate 20mg/kg). The respective diets were administered for eight weeks to induce the metabolic syndrome in the test groups which was then followed a two-week treatment period. The respective animal weights and fasting blood glucose were determined weekly over the entire study period. Lipid profiles, adipose tissue weights, testicular weight, sperm function tests, oxidative stress marker assays and hormonal assays were carried out on each of the rats at the end of the study. The data were analyzed using one-way ANOVA followed by post-hoc tests in cases of significance which was set at p ≤ 0.05 using GraphPadâ"“Prism suite of software. The freeze-dried extracts had a significant positive effect on mean testicular weight, testicular index (mean testicular weight: body weight), sperm count, sperm motility, testicular oxidative stress markers in including catalase activity, malondialdehyde and superoxide dismutase. The freeze-dried extracts of Cissampelos mucronata possessed significant effects on male fertility in this study. The findings of this study partially validate the traditional medicinal uses of this plant.

Morin improves liver and kidney injury in rats with high fructose consumption

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Abstract:
High dietary fructose is a major contributor to metabolic syndrome, causing tissue injury. Morin (3,5,7,20,40-pentahydroxyflavone), a dietary polyphenolic flavonoid isolated from Chinese herbs of the Moraceae family exhibits many bioactivities especially anti-hyperlipidemia, anti-hyperinsulinemia and anti-inflammation. In high fructose-fed rats, morin
can reduce serum TG concentrations and effectively ameliorate hyperinsulinemia. We proved that the inhibition of hepatic SphK1/S1P signaling pathway by morin were possibly involved in high fructose-induced liver inflammation inhibition and lipid accumulation recovery. Meanwhile, morin shows insulin-mimetic effect, suppresses insulin resistance, and improves kidney function in fructose-fed rodents. We observed that morin upregulated miR-330 and partly attenuated inflammatory response by inhibiting SphK1/S1P/S1PR1/3 signaling in kidney cortex of fructose-fed rats. Then, the inactivation of NF-B/NLRP3 inflammasome reduced IL-1β overproduction and improved kidney insulin resistance and dysfunction induced by high fructose consumption. The further detailed protective mechanism elucidation promotes the applications of morin in the prevention and treatment of tissue dysfunction in fructose-induced metabolic syndrome.

**Sub-code-1450**

**Ref No:** MWEk4iyu'

**Title:** Effects and Mechanisms of Cornel Iridoid Glycoside on Learning and Memory Impairment in SAMP8 mice at different ages

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**Abstract:**

Senescence-accelerated mouse-prone8 (SAMP8) is one of the strains and widely used as aging-related neurodegeneration animal model. The aim of the present study was to investigate the effects of cornel iridoid glycoside (CIG) on behavioral changes and senescent status in SAMP8 mice at different ages (6, 10, and 14 months old).

The learning and memory ability, the motor function and the aging conditions of SAMP8 mice were evaluated after CIG treatment in this study.

Results showed that intragastrical administration of CIG (100 and 200 mg/kg) for two months obviously improved the impaired cognitive ability of SAMP8 mice at the age of 6 months and 10 months, respectively. The treatment with CIG significantly increased the motor function of SAMP8 mice at 10 months and 14 months of age, respectively. CIG also evidently decreased the high grading score of senescence and increased the low surviving rate of SAMP8 mice at the age of 14 months. CIG increased NeuN-positive neuron numbers in the cortex of SAMP8 mice. CIG treatment increased the expression level of synaptophysin, synapsin I, PSD95 and synaptotagmin I, and elevated the phosphorylation of Calmodulin-dependent protein kinase IIΔ. Moreover, CIG regulated Aβ precursor protein (APP) amyloidogenic processing by increasing the expression of its related metabolic enzyme ADAM10 and insulin-degrading
enzyme (IDE) in the brain of SAMP8 mice at different ages. In addition, CIG inhibited tau hyperphosphorylation on Thr205 and Ser396 in the brain of SAMP8 mice at different ages. Together, these results indicate that CIG represent a potentially useful treatment for ameliorating the impaired cognitive ability, the motor dysfunction, aging conditions in aging and age-related neurodegenerative diseases, such as Alzheimer’s disease. The mechanism may contains regulating the amyloidogenic processing of APP and reducing accumulation of Aβ toxic substances, reducing tau hyperphosphorylation and thereby reducing tau pathology, and alleviating the loss of synapse-associated proteins.
Poster Presentation-3

Code 1500

Sub-Code- 1501

Ref No: PeptShBA

Title: Traditional medicines and natural products of plants in Chhoto Nagpur Plateau, West Bengal, India

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Abstract:

In developing country, main focusing on plant research has gradually increased all over the world. The potential part of plants used in various traditional system of medicine. The scientists and researchers have aimed at identifying and validating plant derived substances for the treatment of major groups of diseases and one of the most medicinal plants. The present study conducted for medicinal plants Vitex Negundo in Eastern Chhoto Nagpur Plateau, Bankura district, West Bengal, India. Vitex negundo is one of important plant which has enormous traditional uses against various diseases and as a drug by the pharmacology industries. It is commonly known as the five leaved chaste tree and in Sanskrit it is Nirgundi. The parts of plant such as leafs, fruits, seeds etc. provide health and nutrition promoting compounds in human diet. All parts of the plant especially its leaves contain numbers of secondary metabolites such as alkaloids, phenols, flavonoids, glycosidic irridoids, tannins and terpenes and possess a number of therapeutic uses; antimicrobial, anti-inflammatory, detoxicant, diuretic and anticancer etc . It is also used as repellent, insecticide and larvicidal. The present aims to compile medicinal values of Vitex negundo and comprehensive information on phytochemical constituents and therapeutic uses which can be contributed to development of modern medicine in India.

Keywords: Vitex negundo, Traditional medicinal, Phytochemicals, Pharmacology, Therapeutic uses.

Sub-Code-1502

Ref No: 2LoanA5y

Title: Synthesis and evaluation of Chitosan-Alginate microspheres loaded with Enrofloxacin along with selected phytochemicals: A novel antimicrobial therapy against drug resistant bacteria.

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Abstract:
Enrofloxacin in combination with phytochemicals such as Curcumin (CUR), Piperin (PIP), Cinnamic acid (CIA), Caffeic acid (CAA) & Syringic acid (SYA) exhibits notable synergism against pathogenic bacteria. Chitosan-alginate encapsulated microspheres containing enrofloxacin and phytochemicals prepared and evaluated for their synergistic effect and reduction in individual agent's disadvantages. Enrofloxacin alone and in combination with respective phytochemicals added to sodium alginate and mixing slowly with solution of chitosan in acetic acid and calcium chloride to prepare chitosan-alginate microspheres and evaluated. The synthesized microspheres were spherical with diameter range of 0.396 mm to 0.764 mm. Loading efficacy was maximum with enrofloxacin alone and in combination with phytochemicals, enrofloxacin concentration decreased variably with respective phytochemicals. Percent cumulative release of enrofloxacin from all microspheres was maximum at pH 1.2 and at pH 6.8 releases was further increased. CAA and SYA improved the release and CIA, CUR and PIP decreased the release of enrofloxacin from respective microspheres compared to enrofloxacin alone microspheres. Dissolution efficacy increased by addition of SYA, CAA while PIP, CIA and CUR decreased. The mean dissolution time is same in PIP, SYA, CAA while CIA showed lowest and CUR highest when compared with enrofloxacin alone loaded microspheres. Release of enrofloxacin from all types of microspheres followed krosmeyer-peppas model and value of release component (n) suggests the drug release followed Fickian diffusion/Quasi-Fickian diffusion from microspheres. The MIC of enrofloxacin significantly lowered in combination with phytochemicals on both MTCC and clinical isolate cultures of pathogenic bacteria. Chitosan-alginate encapsulation is an effective method to overcome the problems of dissolution, stability and absorption of enrofloxacin and phytochemicals. Even though in-vitro release of enrofloxacin was influenced by the type of phytochemical the combination showed synergistic antibacterial effect.

Sub-Code-1503

Ref No: iBvYVnF5

Title: Comparative anti-inflammatory efficacy of Colchicum Autumnale and Colchicine in animal model of Acute Gout.

Author Name: Dr. Shreyas Deshmukh

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Abstract:
Background: Colchicum Autumnale(CA) is a traditional homeopathic medication used in the treatment of gout. Colchicine is an allopathic drug used in gout but is the second line of therapy due to a narrow therapeutic window. The present study was planned to compare the efficacy of CA with Colchicine in acute gout.
Objectives: To compare the prophylactic and therapeutic efficacy of CA (30C and 200C) with Colchicine in acute gout.

Material and Methods: Thirty-six albino Wistar rats of either sex were randomized into 6 groups:

Part I- prophylactic

Group 1- Disease control, Group 2- Colchicine, Group 3- CA 30 C, Group 4- CA 200 C

Part II- therapeutic

Group 5- Colchicine, Group 6- CA 30 C

Groups 1-4 received respective medications daily orally for 7 days. Group 5 & 6 received medication on the 6th & 7th days.

On 6th day gout was induced by injecting intra-articular monosodium urate crystals in the right ankle joint of all animals. Vernier caliper and Plethysmometer were used to measure the joint swelling- at 0, 6, 12 & 24 hrs. Animals were sacrificed on 8th day and joint tissue was sent for histopathological evaluation.

Results: Plethysmometric evaluation was found more accurate than Vernier caliper. So, for comparison, plethysmometric results were used. Prophylactically, CA 200 C was maximally effective, followed by CA 30 C which was more effective than colchicine in reducing inflammation at 6 hrs after gout induction. After therapeutic administration, CA30 was found to have comparable efficacy with that of Colchicine at 6 hrs.

Conclusion: Our results have shown that homeopathic CA has better anti-inflammatory efficacy than Colchicine prophylactically and comparable efficacy with Colchicine therapeutically. Homeopathic CA could be a therapeutic option to Colchicine.

Sub-Code-1504

Ref No: 1kMZgGjw

Title: Anti-inflammatory and anti-arthritic activity of Trigonella foenum-graecum (Fenugreek) leaf extract in animal models.

Author Name: Priyanka Verma

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Abstract:

Aim: In Ayurveda, Fenugreek has been suggested as an important medicine to treat a variety of chronic ailments. But the scientific evidence for many of these is lacking. The present study was proposed to evaluate the efficacy of hydro-alcoholic extract of fenugreek leaves as an anti-inflammatory and anti-arthritis agent in animal models.

Methods: The Trigonella foenum-graecum extract (TFGE) was assessed for its activity using carrageen induced paw edema model, Formaldehyde induced arthritis model and Complete
Freudâ€™s adjuvant (CFA) induced arthritis model in female wistar rats in 3 doses (100 mg/kg, 200 mg/kg & 400 mg/kg). It was compared with control and standard treatment (Indomethacin 3 mg/kg). In Carrageenan model, rats were injected with 0.1 ml of 1 % carrageenan into the subplantar region of the left hind paw and paw volume was measured at 1st, 3rd and 5th hr of all the groups. In formaldehyde and CFA-induced model, arthritis was induced by formaldehyde (2 % v/v) and 0.1 ml CFA respectively. Joint diameter was measured on day 8, 9 and 10 in formaldehyde model and on day 3, 7, 14 and 21 in CFA model. Serum and ankle joints of rats in CFA-induced model were used for the estimation of serum TNFâ€”Î±, IL-1Î², IL-6 levels and synovial tissue oxidative stress (MDA, GSH, SOD, CAT, peroxidase and glutathione reductase), histopathology and immunohistochemistry (TNF-R1).

Results: In carrageenan-induced paw edema model, TFGE (400 mg/kg) showed maximum inhibition of edema (60.86%) at 3rd hr. In formaldehyde and CFA-induced arthritis model, TFGE dose-dependently reduced joint inflammation as evident from decreased joint diameter, oxidative stress, pro-inflammatory cytokines, preserved tissue architecture and downregulated TNF-R1 expression in synovial tissue (p < 0.001).

Conclusion: Based on these results, it is suggested that Trigonella foenum-graecum could be considered as a potential anti-inflammatory and anti-arthritic agent.

Sub-Code-1505
Ref No: NgiGIIxh
Title: Gut microbiota & its applications in medicine: A mini review
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Abstract:
Background: Approximately 100 trillion microbial species (mostly bacteria, but also viruses, fungi, and protozoa) reside in the human gastrointestinal tract. Gut microbiota dysbiosis (imbalance in the composition and function) of these intestinal microbes is associated with diseases ranging from localized gastroenterological disorders to neurologic, respiratory, metabolic, hepatic, and cardiovascular illnesses. This review aims to discuss the role of microbiota & their prospective novel therapeutic and preventive strategies.

Preventive & Therapeutic Role of Gut microbiota:
1. Clostridium difficile infection
Faecal microbial transplantation is efficacious in approximately 90% of severe cases of recurrent diarrhoea caused by antibiotic-resistant C. Difficile infection. This proves that healthy microbiota can correct microbiota dysbiosis & thus, help to treat specific infections.
2. Atherosclerosis
Gut microbiota metabolize dietary phosphatidylcholine and l-carnitine, produces trimethylamine, which oxidise into trimethylamine-N-oxide (TMAO). Elevated plasma levels
of TMAO is a strong risk factor for atherosclerosis in humans and animals. A study of a mouse model shows that oral application of a structural analogue of choline, 3,3-dimethyl-1-butanol inhibits the commensal microbial trimethylamine production and decreased the plasma TMAO levels thus preventing atherosclerosis without apparent side effects.

3. Cancer

Oral administration of Bifidobacterium increases tumour infiltration and IFN-Î³ production by CD8+ tumor-specific T cells and improves both basal tumour control and anti-PD-L1 efficacy (programmed cell death ligand 1).

4. Obesity

Dysbiosis is seen in most studies of overweight & obese people. A large study of UK twins found that the genus Christensenella was rare in overweight people and when given to germ free mice prevented weight gain.

Conclusion: The overall findings support the view that specific dietary regimens, used alone or combined with the administration of mixtures of microbial species may hold potential for improving public health.

Key words: microbiota, dysbiosis, Clostridium difficile, Cancer, Atherosclerosis.

Sub-Code-1506

Ref No: 6cQiusxv

Title: Personalized therapeutic cancer vaccines (Neo Antigen directed T - Cell therapies): An Overview

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Abstract:

Cancer is one of the leading causes of death worldwide. Immuno oncology is rapidly growing field of cancer research dedicated to developing novel cancer therapies by understanding and harnessing immune pathways, it has gained greater momentum with advent of modern technologies & better equipped sequencing methodology.

Personalized cancer vaccines inhibit further growth of advanced cancers and/or relapsed tumors refractory to conventional therapy, by using patients own immune system.

It uses patients own tumor and dendritic cells in blood, the vaccine is able to deliver antigens specific to tumorâ€™s antigenic profile, thus activating cytotoxic T cells & triggering immune system to recognize and destroy any cancer cells. Example: Sipuleucel (PROVENGE) was approved by FDA in 2010 for metastatic Castration Resistant Prostate Cancer (mCRPC) & many novel vaccines are under clinical trials.

No evidence of severe adverse events following vaccine administration highlights cancer specificity.
Neoantigens don’t always lead to tumor cell destruction, immune suppression sometimes prevents these peptides from being identified & attacked by T cells.

Personalized cancer vaccines in combination to conventional therapies & novel checkpoint blockade inhibitor therapies are proving a powerful weapon in fight against cancer therapies.

A better understanding of host tumor interactions & tumor immune escape mechanisms are required to develop effective cancer vaccines. Immune signatures have to be established and exploited to define patient population who will most likely respond to & benefit from vaccine therapies.

Sub-Code-1507

Ref No: WJtcW4Wd

Title: Cost analysis study of Lactobacillus combinations available in Indian market.

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Abstract:

Introduction: There exists a wide range of variation in the prices of drugs marketed in India and other parts of the world. In the Indian market, various probiotic drugs of different brands, different combinations and different dosage forms are available.

Aim & Objectives: To evaluate the cost of Lactobacillus combinations of different brands of one dosage form and difference in cost of different brands of the same dosage form by calculating the percentage variation of cost.

Methods: The retail cost of different Lactobacillus combinations being manufactured by different companies, in the same dosage form was compared. The difference in the maximum and minimum price of the same dosage form manufactured by different pharmaceutical companies was calculated and the percentage variation in price of same dosage form was calculated.

Results: In powder form, among the Lactobacillus combinations SUPERFLORA-GG shows a maximum price of 45.00 and LACTIFLORA showed minimum price of 9.36. The percentage variation in price of powder form was 380.7%. In tablet form, IMM-4 shows a maximum price of 95.00 and LAC-M showed minimum price of 14.00. The percentage variation in price of tablet form was 578.5%. In capsule form, ECONOVA shows a maximum price of 532.50 and AGLAC showed minimum price of 15.00. The percentage variation in price of capsule form was 3446.6%. In liquid dosage form, SUPERFLORA-GG DPS shows a maximum price of 263.00 and SPOLAB-DS showed minimum price of 60.00. The percentage variation in price of liquid dosage form was 338.3%.

Conclusion: The average percentage price variation of different brands of Lactobacillus combinations of the same dosage form manufactured in India was very wide. The appraisal and management of marketing drugs should be directed toward maximizing the benefits of therapy and minimizing negative personal and economic consequences.
Sub-Code-1508

Ref No: puZla9ve

Title: Elucidating the mechanism of Momordica Tuberosa Saponin in the prevention of high glucose- and cytokine-induced Islet destruction.

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Abstract:

The use of natural products in modern medicine has attained widespread importance as treatments of diabetes mellitus. In this study, the anti-hyperglycaemic and islet protective activities of a saponin of Momordica tuberosa (SMT), a congener as of Momordica charantia (bitter gourd) of Cucurbitaceae family, were investigated. The effect of SMT was tested on streptozotocin (STZ) and high glucose (HG; 31 mM) treated mice pancreatic islets in vitro. Treatment with SMT significantly improved glucose-stimulated insulin secretion (GSIS) from STZ-pretreated islets. The formation of malondialdehyde (MDA) and nitric oxide (NO), indices of high glucose-induced oxidative stress, were also reduced significantly. Inducible nitric oxide synthase (iNOS) expression also was obviously reduced. Islet viability also improved. Pancreatic beta cell apoptosis is known to participate in the beta cell destruction that occurs in diabetes. Complete abrogation of IL-1β and HG-induced apoptosis, in terms of reduced expression of Bak & Bax pro-apoptotic and Caspase-3 proteins, and elevated expression of Bcl-2 anti-apoptotic protein, was witnessed in SMT-treated islets. The NF-κB p65 activation in islets was studied by measuring the translocation of NF-κB p65 into nucleus. It was also revealed that SMT inhibited phosphorylation of the inhibitor of kappa B alpha (IκBα), thereby normalizing HG- & IL-1β-induced NF-κB translocation. The effect on Nrf2 (nuclear factor erythroid 2-related factor 2), the master regulator of antioxidant mechanism in cells, was also studied. Expressions of Nrf2 and anti-oxidant protein heme oxygenase-1 (HO-1) were increased with SMT treatment that were, otherwise, lowered in HG- & IL-1β-treated islets. These findings suggest that Momordica tuberosa saponin prevents high glucose- and cytokine-induced islet destruction and, hence, possibly be considered as a potential therapeutic candidate in chronic type II DM.

Sub-Code-1509

Ref No: vQNdILHh

Title: A brief review enlisting various novel sources of derivation of marine natural products: Shift from sky being the limit to excavating deep into earth surface.

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Abstract:

Introduction: The oceans covering 71% of the earth surface with 360 million km2 area comprising 97% of planet’s water and nearly 87% of life with untouched fauna and flora. The products developed from them have less impact on the environment which is currently plagued with the chemical entities exerting their detrimental effects on the nature bringing our whole survival under question. Therefore, it is an unmet need to explore these natural sources against different ailments including cancer.

Some novel sources are outlined as follows:

1. Hydrothermal Vents: Compounds derived from the hydrothermal vents revealed a novel benzoquinone compound isolated from the GVE2-infected E263 presented with anti-tumor activity by triggering apoptosis of tumor cells.

2. Marine derived rare actinomycetes: 100 new compounds were reported from 38 rare actinomycete strains belonging to 15 genera between 2007 and mid-2013. Out of these 15 different genera Salinispora yielded 20 new compounds, Verrucosispora (18), Nocardiopsis (12), Actinoalloteichus (11), Marinispora (10) and Micromonospora (9). 4 compounds derived from marine actinomycetes are currently in clinical trials.

3. Marine Algae: Extracts from 48 species of brown macroalgae (Phaeophyceae) have been screened against Leishmania parasites.

Aim of the review: To highlight some potential novel sources for the derivation of marine products.

Materials and methods: The information for this review was gathered from different studies in worldwide accepted scientific databases via electronic search [PubMed and Google Scholar]. The keyword used during the search was “new sources of marine products”. Filters applied were trials of previous 5 years and human trials.

Conclusion: With the pharmaceutical industries falling back on natural resources the main limiting step which hinders the development of potential therapeutic agents from them is the continuous supply of natural agents. In this regard the rich marine life provides a bright lead.

Keywords: Hydrothermal Vents, Salinispora, Verrucosispora, Actinoalloteichus, Macroalgae

Sub-Code-1510

Ref No: AB5p3yfk

Title: The pharmacokinetic study of two crystals of ginkgolide K in rats.

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Abstract:
Objective: Ginkgolides are a kind of components with special structure and pharmacological activity that only exist in Ginkgo biloba leaves. The main active components include Ginkgolides A, B, C, J, M, K, L, etc. Among which Ginkgolides B has the strongest pharmacological activity. Ginkgolides K as a derivative of Ginkgolides B, has inhibitory effects on platelet activating factor and neuroprotective effects. Method: In the study of the polymorphism of ginkgolide K, two kinds of new type crystal of ginkgolide K and L were obtained. The absorption differences of two crystal forms in rats were evaluated by LC-MS spectrometry. Results: The LC-MS analysis method met the detection requirements in terms of method specificity, minimum quantitative limit, recovery rate, precision and accuracy. There were some differences in blood concentration at the same time point after oral administration of different crystal forms of ginkgolide K in rats. These results indicated that there were some differences in absorption amount and absorption rate of different crystal substance states in rats. The area under the curve of blood drug concentration was the largest, reaching 1.49 times of that of crystal K, and the peak of blood concentration was the highest, reaching 1.68 times of that of crystal L. Conclusions: The crystal L form is the optimal drug crystal substance of ginkgolide K, which needs further research and development.

Sub-Code-1511
Ref No: p7jeKje0
Title: Effect of coptisine on skeletal muscle tissue and mitochondrial function
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Abstract:
Objective: Coptisine is one of the main active ingredients in the traditional Chinese medicine Coptis chinensis, which has many pharmacological activities. In this study, we explored the effects of coptisine on mitochondrial function in skeletal muscle and skeletal muscle cells.
Methods: Mitochondrial function was assessed using in vivo skeletal muscle tissue and in vitro C2C12 mouse skeletal muscle myotubes. Mitochondrial respiratory function in skeletal muscle tissue was measured using a Clark dissolved oxygen electrode. Mitochondrial respiration in C2C12 myotubes was measured using a seahorse Xfe 96 cell energy metabolism analyzer.
Results: Our study found that Coptisine (10-5 m) reduced mitochondrial 3-state respiration rate and RCR level with malic acid/pyruvate as the respiratory NADH substrate. There was no significant effect on 4-state respiration or oxidative phosphorylation rate. However, coptisine (10-6 M and 10-5 M) increased succinate dehydrogenase (SDH) activity. Studies on mitochondrial function in skeletal muscle myotubes found that coptisine (10-6 M) treatment for 24 hours had no significant effect on the number of C2C12 cells. Coptisine (10-6 M) reduces oxygen consumption (OCR) and reduces ATP production, basal respiration and maximum respiration. Coptisine (10-6 M) reduces non-mitochondrial OCR and coupling
efficiency. On the other hand, coptisine stimulates elevated levels of basic ECAR. After stimulation with coptisine, the OCR/ECAR ratio in C2C12 myotubes was significantly reduced, indicating that the ATP production of the cells changed from oxidative to glycolysis phosphorylation.

Conclusion: Coptisine regulates the energy metabolism of skeletal muscle cells by reducing mitochondrial OCR levels.

Funding: CAMS: 2016-I2M-3-007; NKRDP: 2018ZX09711001-003-005.

Sub-Code-1512

Ref No: tEHNXTv8

Title: Ecopharmacology: Impact of drugs on ecosystem in Indian context

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Abstract:

Ecopharmacology includes studies of pharmaceuticals and personal care products irrespective of doses and their route of entry into environment disturbing the balance of ecology. Since last three decades there has been increasing concern over the public health impacts attributed to environmental pollution. This has lead to development of ecopharmacovigilance.

The world health organisation (WHO) estimates that about a quarter of the diseases facing mankind and ecosystem today occurs due to prolonged exposure to environmental pollution.

Most pharmaceuticals deposited in the environment through human consumption and excretion, and filtered ineffectively by municipal sewage treatment plants which are not designed to manage them. Once in the water, they can have diverse, subtle effects on organisms, although research is still limited.

Pharmaceuticals may also be deposited in the environment through improper disposal, run off from sludge fertilizer and reclaimed wastewater irrigation, and leaky sewer pipes.

High level of pollution is seen in the vicinity of large pharmaceutical manufacturing units and effluent river waters from cities.

They are known to affect ecosystem in a negative way. Ecosystem is at the receiving end of the effects of these pollutants, with direct onslaught for years together.

Chronic effects are known with continuous inflow of more data, with even acute effects increasingly being reported. Varying concentrations of drugs found in water sources can have ill effect on the aquatic life and human health.

Existing wastewater treatment facilities are not designed to remove them from the waste stream. Public health activities intended to protect individuals, groups and populations from environmental hazards, pharmaceutical contamination is very much essential.
Sub-Code-1513

Ref No: AAZ5TW8g

Title: Terpenoids composition of essential oil and in-vitro antioxidant activity of hydroalcoholic and aqueous extracts of roots of Angelica Glauca collected from Himalayan region.

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Abstract:

Angelica glauca Edgew is a perennial medicinal and aromatic herb of family Apiaceae found in temperate Himalayan regions. A. glauca traditionally used for stomach disorders and reported against various disease conditions. The essential oil extracted from roots of the plant was evaluated for its terpenoid constituents and in-vitro antioxidant activity were estimated in hydroalcoholic and aqueous extracts of roots of the plant. The A. glauca roots were collected from Himachal Pradesh and essential oil was extracted from roots by hydro distillation method and subjected to Gas Chromatography -Mass Spectrometry [GC-MS] to know its terpenoids composition. The anti-oxidant activity of hydroalcoholic and aqueous extracts of A. glauca root were estimated by using DPPH and ABTS methods. The ascorbic acid was used as standard.

In the essential oil of roots of plant total 59 compounds were present and the chromatograph showed individual compound peaks. The main compounds in the essential oil such as limonene, trans-ligustilide, Î²-ocimene, 3-nonene (E), 5-Pentylcyclohexa-1, 3-diene, n-butylidene phthalide, myrcene, 3 heptene 2,6 dimethyl, spathulenol have been identified. The percentage inhibition of the ABTS radical was recorded in concentration dependent manner. In ABTS assay, IC50 value for hydroalcoholic and aqueous extracts were observed 0.075 mg/ml and 0.083 mg/ml respectively. In the DPPH assay, IC50 value for hydroalcoholic and aqueous extracts were found 1.12 mg/ml and 1.6 mg/ml respectively. While, the IC50 value of ascorbic acid was found 8.52 Âµg/ml.

It can be concluded from the study that essential oil extracted from roots of the plants contain ample quantities of 59 terpenoid constituents that have good therapeutic potential. The hydroalcoholic extract of the roots of plant showed better antioxidant activity than the aqueous extract. The roots of A. glauca showed significant antioxidant potential (p<0.5) and can also be used as a natural source of antioxidant.

Sub-Code-1514

Ref No: mvQF5wcB

Title: Use of marine products - New era of drug discovery

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Abstract:

Background: Marine products have become an important base in research to discover new lead compounds which can be developed into drugs. The metabolic and physiological capabilities of marine organisms that allow survival in complex habitat provide potential for the production of unique metabolites that are not found in terrestrial environment. It contains untapped extraordinary diversity of life. Bioactivity of compounds from microbes, soft corals, cyanobacteria, algae, sponges, echinoderms, ascidians, fish have shown immunity enhancing effects. There is need of better drugs due to low efficacy, long-course treatment regimen, high toxicity, adverse side effects, induction of microbe resistance and high cost of terrestrial origin medicines. Ongoing researches indicate antimicrobial activity is high in Porifera, Echinodermata, Chordata. Antiviral activity is seen in Cyanophyta, Phaeophyta, Tunicates. Sponges have high antitumour activity. Many microorganisms are source of anti inflammatory fatty acids.

Aim: To explore future use of marine products in replacing present drugs of terrestrial origin

Material and Methods: Databases pubmed, springer, medline, google scholar, crossref and books (advances in microbial physiology) were searched thoroughly on marine products

Discussion: The present researches with advances in metabolomics and bio-informatics to identify marine product lead compound producing immune response is promising. The tissues of marine invertebrates present unique problems for extraction, because of their high water and salt content. But with optimizing culturing techniques and chemical synthesis their active metabolites can be extracted to be used as useable, cost-effective drugs.

Conclusion: Undoubtedly use of marine products will step us into new era of drug discovery. In fact these are blue gold for treatment of complex diseases like cancer, multi drug resistant infections and hypertension.

Keywords: Marine products, Drug discovery, Blue gold

Sub-code-1515

Ref No: kgatimdn

Title: The Effects of Collagen Peptides from Walleye Pollock Skin (CPWPS) on Postmenopausal Osteoporosis.

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Abstract:

Menopause leads to an increased risk for osteoporosis in women. Although drug therapies exist, increasing numbers of people prefer alternative therapies such as dietary supplements, for example, calcium, vitamin D, and collagen hydrolysates for the prevention and treatment of osteoporosis. We have previously shown that at doses tested Collagen Peptides from Walleye Pollock Skin (CPWPS) time-dependently prevented and treated dexamethasone induced
osteoporosis in rats. This study reports the pathological model of ovariectomized osteoporosis in rats was duplicated to study the improve effects of CPWPS on postmenopausal osteoporosis. Additionally, High-performance liquid chromatography (HPLC) methods for simultaneous detection of Pro-Hyp and Gly-Pro-Hyp were established and the biological activities of these small peptides were assessed. 100 healthy female 8-week-old SD rats were divided into normal group (SHAM), ovariectomized model group (OVX), CPWPS prophylaxis group (CPWPS-P), high dose CPWPS group (CPWPS-H, 1g/kg/d) and low dose CPWPS group (CPWPS-L, 0.5g/kg/d). After 1 week of adaptive feeding, the CPWPS-P group began to be given CPWPS by gavage, while the CPWPS-L and CPWPS-H groups started CPWPS gavage at 0w (6 weeks after ovariectomy). At the age of 12 weeks, the rats of normal group were sham operated by only excising the equal volume of adipose tissue around the ovary, while other groups were given bilateral ovariectomy. Six weeks following the OVX was defined as 0 week. At the time of 0, 6, 13 and 17 weeks, the rat femoral X-ray camera was photographed on time. Image-Pro Plus 6.0 software analysis of the average gray value of the right femur. After hematoxylin-eosin staining, the over time changes of bone histomorphometric parameters were analyzed by ImageJ and Photoshop CS6 softwareEs such as trabecular area (Tb.Ar), bone tissue area (T.Ar), trabecular bone perimeter (Tb.Pm), volume fraction (BV/TV), trabecular number (Tb.N), trabecular separation (Tb.Sp), trabecular thickness (Tb.Th), and the relative thickness of cortical bone. The expression of TGF-β was detected by immunohistochemistry. The blood samples were obtained from the abdominal aorta in anesthetized rats during the passage of time, serum was taken to detect bone alkaline phosphatase (BALP), procollagen type I N-terminal propeptide (PINP), C-terminal telopeptide of type I collagen (CTX-I) and tartrate-resistant acid phosphatase (TRAP) levels in the same period by using commercially available ELISA kits according to the manufacturerâ€™s protocol. The serum levels of malondialdehyde (MDA) and superoxide dismutase (SOD) were respectively measured by enzyme chemistry method. HPLC conditions were determined as follows: chromatographic column: venusic ASB-C18 (250 mm x 4.6 mm, 5 um); column temperature: 40°C; mobile phase: gradient acetonitrile and water; flow velocity: 1.0ml/min; detection wavelength: 220nm. During the experimental period, The mean gray value of the right femur in the CPWPS-P, CPWPS-H, and CPWPS-L groups was significantly higher than that of the OVX group from 6W (p<0.05), and the CPWPS-P group increased 41.82% (0W vs 17W, p<0.05). At 17W, the reduction of Tb.N in the OVX group was 30.36% (vs 0W, p<0.05), while the increment of Tb.N in CPWPS-P, CPWPS-H, and CPWPS-L groups was 37.7%, 37.8%, and 26.58% respectively (vs 0W, p<0.05). Different experimental groups (CPWPS-P, CPWPS-H, CPWPS-L) significantly increased cortical bone thickness from 6W, 13W, and 17W respectively (vs OVX group, p<0.05). Tb.Sp was significantly dropped compared with OVX group from 6W, and decreased by 43.68%, 40.65%, and 28.82% in CPWPS-P, CPWPS-H, and CPWPS-L groups at 17W (vs 0W, p<0.05). CPWPS increased Tb.N, decreased Tb.Sp, and increased BV/TV with time, improved the integrity of the trabecular meshwork structure to some extent, increased serum SOD, BALP, and PINP levels, whereas lowered serum MDA, TRAP, and CTX-I. Among them, the preventive group performed the best. Serum concentration of Pro-Hyp and Gly-Pro-Hyp in control group rats were 0.096 and 0.079 mg/ml, respectively, which significantly decreased in those of model groups (0.029 and 0.044 mg/ml, respectively). Meanwhile, CPWPS prevention significantly increased these small peptide serum peptides (0.148 and 0.107 mg/ml, respectively) (P<0.01). These results support The improve effect of CPWPS on osteoporotic rats was related to the promotion of bone formation, inhibition of bone resorption, and reduction of oxidative damage. The serum concentration of Gly-Pro-Hyp and Pro-Hyp may be negatively associated with osteoporosis.
Title: Physicochemical evaluation of traditional Siddha formulation Sivanar Vembu Khuzhi Thailam by pharmaceutical analytical techniques

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Abstract:

Aim: To standardize (physicochemical) Sivanar vembu kuzhi thailam formulation

Methods: The sample of Sivanar vembu kuzhi thailam used belonged to one batch. The test procedures were in accordance with the Protocol for testing of Ayurveda, Siddha and Unani medicines, Department of AYUSH, Government of India guidelines. Physicochemical standardization included determination of refractive index, iodine value, saponification value and acid value. Total bacterial count and total fungal count studies were performed for microbial standardization. Marker based standardization involved identification of marker compound â€˜oleic acidâ€™ by Gas Chromatography â€“ Flame Ionization Detector (GC-FID). The physicochemical tests were performed in duplicates and average results were calculated.

Results: Refractive index of the sample could not be found out as the light did not pass through it. This is because the sample contains particles that do not allow light to pass through. The iodine value was 6.8, saponification value was 261 and acid value was 10.2. The concentration of oleic acid was 5.8 % w/w by GC-FID. There was no growth seen on the culture plates indicating no bacterial and fungal contamination.

Conclusion: The results of parameters assessed closely matched with average values of other â€˜Siddhaâ€™ thailam formulations studied elsewhere (iodine value â€“ 8.75, saponification value was 235.75 and acid value was 8.755). The presence of oleic acid and absence of microbial contamination deemed the sample to be fit for preclinical study that we planned.

Keywords: Siddha, physicochemical, oleic acid, Gas Chromatography â€“ Flame Ionization Detector

Title: Characterising a novel neuroinflammatory pathway mediated by DHA metabolism

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Abstract:
Docosahexaenoic acid (DHA) is a $\omega$-3 polyunsaturated fatty acid and is present in abundance in the brain. It is most commonly known for its anti-inflammatory and neurotrophic effects. An immortalized murine microglial cell line (BV-2) was used to demonstrate the effects of DHA since they are classical neuroinflammation effector cells. Cells were cultured as adherent monolayers under standard culture conditions and treated with DHA as well as inhibitors of the DHA metabolism pathway. Cell responses were measured by morphological analysis, qRT-PCR and biochemical analysis of caspase-1. This study has shown that high, but physiologically relevant, concentrations of DHA results in cell swelling and eventual lysis. This was accompanied with an activation of caspase-1 and increased lipooxygenase expression and release of pro-inflammatory cytokines, such as IL-1β. The emergence of these hallmark characteristics of pro-inflammatory cell death, known as pyroptosis, suggests that there is a causative link between DHA and pyroptosis. This process can be completely inhibited by the inhibition of 12-lipooxygenase (12-LOX, Alox12e) while inhibition of 5-lipooxygenase (5-LOX, Alox5e) and 15-lipooxygenase (15-LOX, Alox15e) did not. We then performed the first detailed characterization of the ultrastructural characteristics of pyroptosis using light microscopy, scanning electron microscopy (SEM), and transmission electron microscopy (TEM). Efforts to further characterize the unknown metabolite of DHA include the use of lipid-chromatography and mass spectrometry (LC-MS). Cumulatively, our study challenges the notion that DHA is anti-inflammatory and demonstrates that high, but physiologically relevant, concentrations of DHA has the potential to activate a pro-inflammatory cell death mechanism in microglial cells.

**Sub-Code-1518**

**Ref No: dhiSUOIA**

**Title:** Anti-inflammatory effects of Garlic in Carrageenan induced Rat Paw Model

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**Abstract:**

Garlic (Allium sativum L.) has been widely used as an important ingredient in food and for many centuries, has also been used as a traditional medicine due to its perceived effects in preventing and curing ailments. A series of biological benefits, such as hypolipidemic and hypcholesterolemic effects [4], antioxidant potential [5], and antimicrobial activity [6], have been reported. The pungent fractions of garlic are mostly sulfur-containing moieties, while its two chemical groups, namely, flavonoids and ALK (EN)-based cysteine sulfoxides (ACSOs), have marked effects on human health [7].

Aims and objective: plan to investigate the anti-inflammatory properties of garlic oil extract using carrageenan and inducing inflammation in sub plantar area right hind paw the adult wister albino rats

Materials and Methods: In this study, out of twelve wister albino rats four rats had been taken as control and the rest eight have been treated as two test groups of four each. The paw volume, of all rats in three groups were measured by plthysmograph . Wister albino rats in the control group were treated orally with normal saline (as control group) and aqueous garlic extract orally (20 mg/kg and 40 mg/kg) in two test groups, immediately after the 0.1 ml ,
1% w/v carrageenan injection. In control and two test groups paw edema of rats were measured by plethysmograph after 30 minutes and 1 hour of carrageenan injection.

Results: The results were expressed as the Mean ±SD and the statistical significance of differences between groups was analyzed by one Way Analysis of Variance (ANOVA). From statistical analysis, it shows that oral administration of Allium sativum L extract (20 mg/kg and 40 mg/kg) in two test groups inhibited paw edema dose-dependently at 30 minutes and 1 hour after of the carrageenan injection in comparison to the orally normal saline treated rats group (P<0.05).

Conclusion: So, we can conclude from the outcome of the present work that aqueous garlic extract has anti-inflammatory effect in the wister albino rats.

Keywords: Allium sativum L, Anti-inflammatory, Carrageenan, paw edema, plethysmograph

Sub-Code-1519

Ref No: nrViRFb7

Title: Amelioration of diabetic neuropathy by Formononetin: Possible role of SIRT1 and NGF

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Abstract:

Diabetic neuropathy is commonly observed complication in more than 50% of type 2 diabetic patients. An early sign of diabetic neuropathy includes numbness, allodynia, paresthesias and hyperalgesia followed by damage in conduction velocity in nerve, weakness of toes, ankles and claves. Histone deacetylases including SIRT1 have significant role to protect neuron from hyperglycemia induced damage. Formononetin (FMNT), an isoflavone is known for its effect to control hyperglycemia and also activate SIRT1. Aim of present study was to evaluate effect of FMNT as SIRT1 activator in type 2 diabetic neuropathy.

Type 2 diabetic diabetes was induced in rats by modification of diet for 15 days using high fat diet and later administration of streptozotocin at lower dose (35 mg/kg/day, i.p.). FMNT treatment was initiated after confirmation of type 2 diabetes. Treatment was given for 16 weeks at 10, 20 and 40 mg/kg/day dose, orally.

Treatment of FMNT for 16 weeks-controlled hypoglycemia and reduced insulin resistance significantly in diabetic animals. FMNT treatment reduced oxidative stress in sciatic nerve tissue. FMNT treatment also reduced thermal hyperalgesia and mechanical allodynia significantly in diabetic animals. It improved conduction velocity in nerve and unregulated SIRT1 and NGF expression in sciatic nerve tissue.

Results of present study specifies that continuous administration of FMNT protected diabetic animals from hyperglycemia induced neuronal damage by controlling hyperglycemia and increasing SIRT1 and NGF expression in nerve tissue. Thus, FMNT can be effective candidate for treatment of type 2 diabetic neuropathy.
Sub-Code-1520

Ref No: MamJUYeT

Title: Investigation of Dialium ovoideum thwaites, an endemic plant in Sri Lanka for its proximate composition, cytotoxicity and anti-microbial activities

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Abstract:

Dialium ovoideum thwaites (Fabaceae) is an endemic plant to Sri Lanka found in wild in semi-dry zone of Sri Lanka. The plant parts are known to be used by natives for nutritional and medicinal purposes, specifically leaves are used to treat skin infections in indigenous medicine. Though D.thwaites is an endemic plant to Sri Lanka with many uses, less studies has been reported so far. Our previous studies revealed that the leaves are rich with important secondary metabolites and possesses higher free radical scavenging potential. Therefore, this study was aimed on investigating the proximate composition, cytotoxicity and in-vitro antimicrobial activity of the leaves of D. thwaites.

The proximate analysis showed the presence of 58.47% moisture, 8.52% ash, 12.50% crude protein, 2.56% crude fat, 14.43% crude fiber and 3.52% carbohydrates. Agar-well diffusion method was used to investigate anti-bacterial activity against the bacterial strains; E.coli, Staphylococcus aureus, Pseudomonas aeruginosa, Candida albicans and Staphylococcus aureus (MRSA). All the extracts showed inhibition effect only against MRSA (gram +ve) giving highest activity with methanolic and aqueous extracts. MIC and MBC values were 6.25 mg/mL and 100 mg/mL respectively with S. aureus for both extracts. All the extracts were non-inhibitory against fungi, C.albicans. As Brine Shrimp lethality assays gave the LC50 of greater than 1000 Âµg/ mL, the plant extracts can be considered as non-toxic to the normal cells.

This study revealed that the leaves of D. thwaites processes potent anti-bacterial effect against MRSA. The use of leaves as wound washing agent in indigenous medicine is scientifically validated in this study. As MRSA infections is a world-wide health concern, the research output of this study can be extended to prepare natural anti-septic solution as well as to discover novel anti-bacterial agents from D. thwaites.

Key words: D.thwaites, , cytotoxicity, anti-microbial assay, MRSA, proximate analysis

Sub-Code-1521

Ref No: sJXbkvlq

Title: Consideration of environmental contaminants in herbs used as medicines in West Bengal

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Abstract:

Introduction: In India herbal pharmaceutical products are marketed both by the organized pharmaceutical industry as well as less organized small-scale units that mostly cater to the local market. A substantial proportion of such medicines are used without prescriptions and many are marketed without any safety or quality assurance studies. Contamination of raw materials used in manufacture of herbal medicines by pesticides, heavy metals and microorganisms can pose serious health risks, particularly on chronic exposure. We aimed to analyse herbs procured at source for the presence of selected contaminants.

Methods: Herb specimens (leaves, stem, stem berries, roots, rhizomes or fruits) were collected directly from the wild and from medicinal plants cultivators throughout the three geographical zones (North, Central and South) of West Bengal following a standard protocol. After identification, the herbs were shade-dried, pulverized and extracted for chemical analysis of four toxic heavy metals (Pb, Cd, As and Hg) by atomic absorption spectrophotometry following API guidelines. Three pesticides (DDT, BHC and Pyremethrin) were measured by gas chromatography-mass spectrometry methods as described by AOAC. Finally, four common harmful aflatoxins (B1, B2, G1 & G2) were estimated by enzyme-linked immunoassay as recommended by WHO.

Results: Heavy metals (Pb, Cd and As) present in herbs were significantly higher than permissible limits. The three common pesticides â€“ DDT, BHC and Pyremethrin â€“ were detected in considerable proportion of the tested samples. Aflatoxins were also detected in some samples.

Conclusion: Monitoring contamination levels is vital to ensure safety of herbal pharmaceutical products. These results may be helpful in the formulation of guidelines for plant cultivators, collectors and handlers towards supply of safe raw materials for botanical medicine manufacture.

Keywords: herbs, contaminants, heavy metals, aflatoxins, pesticides.

Sub-Code-1522

Ref No: 29AgA6Ku

Title: Gas Chromatography-Mass Spectrometry Analysis of Ethanolic Extract of Homalomena Aromatica Rhizome

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Abstract:
Homalomena aromatica Schott. (Family: Araceae) is an aromatic herb found in Northeast India. In Manipur, it is locally known as “Hongu-kakla-manbi” and the crushed rhizome is traditionally used along with fresh fruit juice of Averrhoa carambola Linn. against asthma. H. aromatica is reported to show analgesic, antidepressant, anti-inflammatory, antiseptic, antispasmodic, sedative, antifungal, antibacterial, insecticidal, larvicidal and hepatoprotective properties and used for treating joint disorders. The present study aims to analyze some bioactive compounds present in the ethanolic extract of H. aromatica rhizome. H. aromatica was collected from Jiribam District of Manipur and fresh rhizomes were used for Soxhlet extraction with ethanol as solvent. The extract was subjected to Gas Chromatography-Mass Spectrometry (GC-MS) analysis. The library used is NIST Library. Sesquiterpenes and sesquiterpenoid such as Beta-Cadinene, T-Cadinol, Caryophyllene oxide and Alpha-Cadinol were detected. Aromatic aldehyde, 5-Hydroxymethylfurfural which is a significant platform compound for production of value-added chemicals, was also detected. Further studies for the confirmation of the identity of the compounds and assessment of their respective bioactivity in order to correlate the traditional uses with the phytochemical constituents of the plant present future research prospects.

Keywords: Homalomena aromatica, Soxhlet extraction, GC-MS analysis

Sub-Code-1523

Ref No: AhDZNKCn

Title: Elemental analysis of Hibiscus cannabinus L. and Hibiscus sabdariffa L. leaves part by using GF-AAS

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Abstract:

Hibiscus cannabinus L and Hibiscus sabdariffa L. both plants belongs to the family Malvaceae. These plants were collected during June to September from Imphal (24Èš37â€²N and 93Èš39â€²E) Manipur North Eastern State of India which lies 2590 feet above sea level .The local people use these plants for making soup and treating urolithiatic patients. Aqueous extract of H. sabdariffa L using calyces part effectively prevented the development of urolithiasis in male albino rat (Reena L.et.al 2012).The present study aims to compare the elemental composition of these two plants. By using Graphite Flame Atomic Absorption Spectrometer(GF-AAS) method, collected plants were washed thoroughly with distilled water and kept for 72 hrs for shade dry. The dried plants were ground into fine powdered by using mortar and pestle. The powdered sample(0.5gm) was digested in Teflon digestion vessel using HNO₃ and the volume was made up to 50ml with double distilled water. The elemental analysis shows the presence of Calcium-0.52±0.007, Magnesium-0.03±0.002, Iron-0.81±0.66, Zinc-0.08±0.007, Copper-0.34±0.001, Sodium-0.60±0.010, Potassium-0.25±0.002, Selenium-0.28A±0.009, Chromium-0.56A±0.081, Cobalt- 0.02A±0.007 in H. cannabinus and Calcium- 0.49A±0.041 , Magnesium- 0.04±0.009, Iron-1.23A±0.27, Zinc-0.09A±0.004, Copper -0.20A±0.004, Sodium-0.54A±0.085, Potassium-1.83A±0.013, Selenium- 0.35A±0.002, Chromium- 0.87A±0.050, Cobalt- 0.05A±0.003 in H. sabdariffa. The present study revealed that further study is needed for pharmacological activity.
Keywords: urolithiasis, element, GF-AAS

Sub-Code-1524

Ref No: aAhFo7nc

Title: FTIR Spectroscopic analysis of functional groups of ethanolic extract of Ripe fruits of Canthium gracilipes â€“ an ethno medicinal plant.

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Abstract:

Canthium gracilipes is locally known as Lam-Heibi belongs to Rubiaceae family which is mainly found in hills and valley areas of Manipur, North Eastern part of India. Crushed ripe fruits have been used as fish poison. It has been reported that various parts of the plants have been used for the treatment of many diseases (Sen S, Chakraborty et al., 2011) .The aim of the present study is the detection and analysis of various functional groups present in the ethanolic extracts of ripe fruit of Canthium gracilipes using Fourier Transform Infrared spectrophotometer (FTIR). The FTIR spectrum analysis of the ethanolic extract of ripe fruits shows the presence of various functional groups such as alcohol, alkane, â€‚â€‚unsaturated ester, carboxylic acid, primary amide, alkenes, nitro compound and primary alcohol. The present study will help for selection of plant part, having higher amount of bioactive compounds for preparation of therapeutic herbal medicines based on the characteristics FTIR absorption band which correspond to the various functional groups present in the compounds for future use.

Sub-Code-1525

Ref No: TIXGmpAy

Title: GC-MS ANALYSIS OF Lindernia ruellioides (Colsm.) Pennel

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Abstract:

Lindernia ruellioides (Colsm.) Pennel is a group of herbaceous plant in the Linderniaceae family. They are native to warm regions in both Eastern and Western Hemispheres, distributed in tropical and subtropical regions of Asia including the Western Ghats of India, Indonesia, Cambodia, Japan, Malaysia, Burma and China. Classified as Least concerned in the IUCN RED LIST, it is one of the important medicinal plants from the family Linderniaceae and is commonly known as â€œDuckbill Pimpernelâ€. The plant was also proved to contain anti-HBV effects(Jing Chen Wei et.al,2018) and is used by traditional medicinal practitioners in treating urolithiasis (Mohd Mustaque Ahmed, 2011). In the present study, the plant samples were collected, dried and their ethanol extract (99.9%), using Sohxlet
extraction method, was subjected to GC-MS analysis and screened. The top 5 major chemical constituents from the screening according to their peak heights and area percentage were found to consist of - 1,2 Benzene dicarboxylic acid (Phthalic acid; 9,10-Octadecadienoic acid (Linoleic acid; 17-Octadecynoic acid; Z-Octadec -9-enoic acid (Oleic acid) and Ascorbic acid 2,6 Dihexadecanoate. Thus, the extract of Lindernia ruellioides was characterized by the essential levels of esters, unsaturated fatty acids and vitamins. The occurrence of some of the mentioned constituents in the particular extract provides the scientific evidences for the medicinal properties of the plants and further confirmations and investigations for the compounds can be done and its pharmaceutical properties can be identified.Keywords: Linderniaceae, urolithiasis, Soxhlet Extraction , GC-MS.

Sub-Code-1526
Ref No: vJYvtmXP
Title: Isolation and characterization of fatty acid mixture from spirulina platensis; A preliminary antibacterial screening
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Abstract:
Spirulina platensis is a micro alga which contains many essential fatty acids, like gamma linolenic acid, stearic acid, myristic acid, linoleic acid, heptadecanoic acid etc. The composition of individual fatty acids had been found out through GC-MS analysis based on their retention time and molecular weight. Winterization procedure was used for the extraction of fatty acid mixture. Fatty acid mixture had been screened for antimicrobial activity using agar diffusion method against four bacterial species. The mixture showed comparable activity with the standard.
Keywords: Fatty acids, GC-MS, Winterization procedure, Antimicrobial activity

Sub-Code-1527
Ref No: LBbcoUh5
Title: Long term stability and safety of novel formulation containing omega-3-fatty acid and micronutrients
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Abstract:
Background & Objectives: Flaxseed is a traditional medicinal plant and serves as the richest source of alpha-linolenic acid (ALA, ω-3). ω-3 plays a key role in prevention and control of several pathobiology of metabolic disorders. Considering the nutritional attributes of ALA, we have developed emulsified formulation containing ω-3 along with micronutrients such as niacin, vitamin B6, vitamin C, zinc, L-glutamine, vitamin E and magnesium etc for food fortification. The objective of the present study was to carry out physicochemical characterization, long term stability, and safety study of formulation containing ω-3 and micronutrients.

Materials & Methods: The emulsified formulations prepared in batch of 1 kg and stored in the glass container at 4-8°C and subjected for long term stability and acute toxicity study as per OECD guidelines.

Result and discussion: Based on oxidative stability parameters, it was observed that primary and secondary oxidation products were within acceptable limits even after nine months. No phase separation, phase inversion, flocculation, creaming and sedimentation was observed indicating the stability of formulation. Optical microscopy study also revealed stability of formulation and no microbial contaminants were not detected. Formulation was also consistent in various parameters such as color, dilution test, particle size analysis, SEM analysis in spite of many ingredients present. Further particle size analysis, polydispersity index and zeta potential analysis confirmed the stability and suitability of formulation for food fortification. Finally, acute oral toxicity in animal model as per OECD guidelines, recorded no mortality and no gross clinical abnormalities and no toxic effect in rats were noted, indicating safety of the formulation.

Conclusion: Fully characterized formulation containing adequate concentration of omega -3 fatty acid along with micronutrients is found to be stable for 9 months and safety confirmed in acute oral toxicity study.

Acknowledgement: Authors are thankful to DST-SERB (ECR/2016/002024) for financial support.

Sub-Code-1528

Ref No: txDv3acs

Title: Evaluation of pharmacological effects of visnagin on complete freunds adjuvant in the rat model of rheumatoid arthritis

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Abstract:

Background Rheumatoid arthritis (RA) is a chronic inflammatory autoimmune disease characterized by synovial hyperplasia, cartilage destruction, and bone erosion. Complete Freundâ€™s adjuvant(CFA) induced RA model is a widely used model to study the effects of anti-arthritic agents. Visnagin (VIS) has played a promising role in inhibiting proinflammatory cytokines in various animal models.
Materials and Methods RAW 264.7 cells were stimulated with lipopolysaccharide (LPS) at a concentration of 11.4 µg/mL followed by treatment with VIS at a concentration of 12.5 and 25 µM. Sprague Dawley rats were used for induction of RA by administering CFA through intra-articular route at a dose of 1 mg/mL on day 0 followed by an additional booster dose of incomplete Freundâ€™s adjuvant (ICFA) on day 7. Rats were treated with VIS at doses of 3 and 10 mg/kg intra-articularly twice in a week for 21 days. The arthritic score, behavioral studies for pain evaluation, radiological assessment, pathological examination (hematoxylin and eosin stain, toluidine blue/fast green stain, and safranin-O-staining) and molecular studies (ELISA, IHC, western blot) were performed to evaluate the protective effect of VIS on inflammatory markers.

Key Findings Our results showed that VIS significantly reduced LPS induced inflammation with downregulation of inflammatory cascades like NF-ÎºB and MAP kinases in RAW 264.7 cells. In arthritic rats, VIS reduced the knee swelling, arthritis score with improvement towards pain parameters. While pathological examination results indicated VIS reduced knee joint inflammation in rats with good protection towards cartilage destruction. The radiographic analysis also supported the protection of VIS towards joint destruction. After VIS treatment secretions of MMP-2, IL-1Î², IL-22 & IL-17 were also reduced in synovial tissue.

Conclusion The results of the study imply that VIS exerted anti-inflammatory and anti-arthritic activity by downregulating the NF-ÎºB and MAP kinases signaling cascade in LPS stimulated in vitro and CFA induced in vivo models of RA.

Sub-Code-1529

Ref No: 3j4MhI9A

Title: Piperlongumine attenuates bile duct ligation-induced liver fibrosis by downregulation of TGF-Î²1/Smad and EMT pathways

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Abstract:

Liver fibrosis (LF) is a major life-threatening health problem that may result in liver cirrhosis and hepatic cellular carcinoma (HCC). Piperlongumine (PL) is an alkaloid extracted from Piper longum L. possess various pharmacological effects and medicinal value. In present study, we investigated hepatoprotective effect of PL against bile duct ligation (BDL)-induced LF. Male Swiss albino mice underwent BDL followed by 14 days oral administration of PL (1.25, 2.5, 5 mg/kg) using 0.5% sodium carboxymethylcellulose (Na-CMC) as a vehicle. After sacrifice, we evaluated the liver function markers, histopathology, cellular infiltration, hydroxyproline assay for liver collagen content and specific collagen staining. We also evaluated the inflammatory cytokines and fibrogenesis proteins expression in BDL-induced LF. Data from our study indicated that, BDL group showed LF as evidenced by histopathological changes and elevation in collagen content, liver enzymatic markers, pro-inflammatory cytokines, malondialdehyde, nitric oxide and decreased glutathione levels, whereas PL treatment reversed these effects significantly. Further PL significantly normalized the protein expressions of transforming growth factor-Î²1,
Smad, transcriptional genes (Snail and Slug) and fibrotic markers (vimentin, fibronectin, \(\alpha\)-smooth muscle actin, collagen1a & 3a, E-Cadherin) dose-dependently in BDL-induced LF mice. From the results, we conclude that PL protects against BDL-induced LF via an antioxidant, anti-inflammatory and antifibrotic effects by inhibiting TGF-\(\beta\)/Smad/EMT signaling pathways. To the best of our knowledge, this is the first report of piperlongumine against BDL-induced LF. Our findings strongly suggested that PL might provide a potential and beneficial approach for the treatment of LF by inhibiting stellate cell activation and reducing the LF and its progression to cirrhosis and HCC.

**Sub-Code-1530**

**Ref No:** fmrk4z5f

**Title:** Escin enhances the anti-rheumatoid arthritis effects of low dose glucocorticoids through up-regulation of glucocorticoid receptor.

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**Abstract:**

Rheumatoid arthritis (RA) is characterized by chronic progressive symmetrical synovitis and destruction of multiple joints. Glucocorticoids (GCs) are widely used in the treatment of RA. However, their adverse effects were serious. Escin, isolated from Aesculus hippocastanum L. has been reported to have anti-inflammatory effect. We investigated the anti-RA effect of Escin combined with low dose of GCs (dexamethasone, Dex) and its underlying mechanism. Adjuvant-induced rheumatoid arthritis rats and LPS-injured RAW 264.7 were used to investigate the anti-RA effects of Escin combined with low dose Dex in vivo and in vitro. The results showed that Escin combined with low dose Dex significantly decreased arthritic index, serum IL-6 and TNF-\(\alpha\), improved paw swelling, and ameliorated the joint pathology immune organ pathology significantly. Gene chip results revealed that Nr3c1(GR) altered significantly. And that GR activation by Escin and low dose Dex was confirmed both in vivo and in vitro. Furthermore, Escin combined with low dose Dex also significant increase GR mRNA expression. However, when suppression of GR by its specific inhibitor, the anti-RA effect of Escin combined with low dose Dex was abolished. The data in this study demonstrated that Escin combined with Dex reduced the dose of Dex, and exerts significant anti-rheumatoid arthritis effects, which could also reduce the adverse effects of Dex. This combination might be attributed to GR activation. This study might provide a new combination drugs for the treatment of rheumatoid arthritis.

**Sub-Code-1531**

**Ref No:** GSJoLWQr

**Title:** Evaluation of total phenolics, flavonoids and antioxidant activity of Justicia Gendarussa.

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Abstract:

The purpose of the present research work was to evaluate the total phenolic, flavonoid contents and antioxidant activity of different solvent fractions of Justicia gendarussa belongs to family Acanthaceae by colorimetric assay and invitro antioxidant studies.

Oxidative stress plays an important role in the pathophysiology of Parkinsonâ€™s disease. The ancient India medical system, Ayurveda, traditionally uses antioxidant plants with antioxidant activity were using to treat Parkinsonâ€™s disease. The total phenolics and flavonoids quantification of ethanolic, ethyl acetate, water and n-hexane extracts of Justicia gendarussa leaves was carried out by using Folin-ciocalteu, Aluminum chloride colorimetric methods and the total phenolic content values were found to contains 9.47, 8.89, 9.22 and 8.06 mg GAE/g of dry extract, total flavonoid values were found to contains 97.6, 79.6, 56.6 and 23.6 mg RUE/g of dry extract. Invitro antioxidant activities were carried out using different methods like DPPH free radical scavenging assay, Lipid peroxidation assay, Nitric oxide radical scavenging assay and Superoxide radical scavenging assay and the free radical scavenging activity was given in IC50 values. DPPH radical scavenging assay, the IC50 values of ethanolic, ethyl acetate, water and n-hexane were found to be 32Âµg/ml, 52Âµg/ml, 66 Âµg/ml and 80Âµg/ml. Lipid peroxidation assay, the IC50 values of ethanolic, ethyl acetate, water and n-hexane were found to be 28Âµg/ml, 43Âµg/ml, 68 Âµg/ml and 83Âµg/ml. Nitric oxide radical scavenging assay, IC50 values of ethanolic, ethyl acetate, water and n-hexane were found to be 30Âµg/ml, 50Âµg/ml, 60Âµg/ml and 80Âµg/ml. Superoxide radical scavenging assay, IC50 values of ethanolic, ethyl acetate, water and n-hexane were found to be 39Âµg/ml, 41Âµg/ml, 43Âµg/ml and 99Âµg/ml. Based on the total phenolics, flavonoids and IC50 values of the different solvent fractions of Justicia gendarussa, among all the fraction ethanolic leaf extract was more effective towards free radical inhibitory activity. Total flavonoid and phenolic contents of leaf extracts were correlated with the antioxidant activity. Therefore, further works have been performed on the isolation and identification of the antioxidant components present in ethanolic leaf extract and its fractions of Justicia gendarussa. It is preliminary work of our research project on antiparkinsonian activity of natural plants."

Sub-Code-1532

Ref No: XCO4Bdol

Title: To compare and evaluate the anti-inflammatory efficacy of terminalia arjuna (aqueous extract of bark) with diclofenac sodium on rats

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Abstract:

Background: Terminalia arjuna is a well-known Indian medicinal plant whose bark is extensively used in ayurvedic medicine. It is one of the most versatile medicinal plants
having a wide spectrum of biological activity. The objective of this study was to study and evaluate the anti-inflammatory activity of Terminalia arjuna on carragennan induced paw edema in sprague dwaley rats.

Materials and Methods: The study was conducted in the department of pharmacology, BRIMS, Bidar after approval of institutional animal ethical committee in the month of March-May 2019. A total of 30 sprague dawley rats of either sex weighing 150-250 gms were taken and divided into 5 groups i.e. 6 animals each.

Terminalia arjuna aqueous extract of bark in 200, 400 and 600 mg/kg doses were administered to sprague dawley rats prior to induction of carrageenan induced paw edema. Statistical analysis: was done by using student t test. P < 0.05 was considered statistically significant.

Results: Only 400 mg/kg dose of Terminalia arjuna aqueous extract of bark was able to decrease the size of paw edema at significant levels in carrageenan induced paw edema in rats.

Conclusion: The aqueous extract of bark of Terminalia arjuna possesses anti-inflammatory activity on carrageenan induced paw edema in rat model.

Keywords: carrageenan, diclofenacsodium, flavonoids, terminlia arjunas.

Sub-Code-1533
Ref No: sGyy0neN
Title: Effects of Salvianolic acid A on the endothelial-mesenchymal transition of HPAECs.
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Abstract:

Objective: Salvianolic acid A (SAA), a polyphenols acid, is a bioactive ingredient from a traditional Chinese medicine named Dan shen (Salvia Miltiorrhiza Bunge). According to previous studies, it was shown to possess various effects such as anti-oxidative stress, anti-diabetic complications and anti-pulmonary hypertension. This study is aimed to investigate the effect of SAA on pulmonary arterial endothelial-mesenchymal transition (endoMT) induced by hypoxia and the underlying mechanisms.

Method: Primary cultured human pulmonary arterial endothelial cells (HPAECs) were exposed to 1% O2 for 48 hours with or without SAA treatment.

Results: SAA treatment improved the morphology of HPAECs and inhibited the cytoskeleton remodeling and reduced migration distances. It was observed that the production of ROS in cells was significantly reduced by the treatment of SAA. Meanwhile, SAA alleviated the loss of CD31 and slightly inhibited the expression of Î±-SMA. The mechanisms study shows that SAA treatment increased the phosphorylation levels of Smad1/5, but inhibited that of Smad2/3. Furthermore, SAA attenuated the phosphorylation levels of ERK and Cofilin, which were enhanced by hypoxia.

Conclusions: According to these results, our study indicated that SAA treatment can protect HPAECs from endoMT
induced by hypoxia, which may perform via the downstream effectors of BMPRs or TGFβR including Smads, ERK and ROCK/cofilin pathways.

Keywords: Salvianolic acid A; Endothelial-mesenchymal transition; HPAEC; Hypoxia; Smads pathway

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Sub-Code-1534

Ref No: YvHhKfch

Title: Animal study of Andrographis Paniculata(Kalmegh) as an anti-inflammatory in Carrageenan Induced Inflammation.

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Abstract:

Background: Andrographis paniculata (Burm.f.) Nees (Acanthaceae) is a medicinal plant traditionally used for the treatment of cold, fever, laryngitis and several infectious diseases ranging from malaria to dysentery and diarrhea in China, India and other south east Asian countries. The plant is claimed to possess immunological, antibacterial, antiinflammatory, antithrombotic and hepatoprotective properties. Aims and Objectives: The aim of the present study was to explore and confirm the probable antiinflammatory activity of androphis paniculata extract using carrageenan induced inflammation in subplanter area right hind paw the adult wister albino rats. Materials and Methods: In this study, out of twelve wister albino rats four rats had been taken as control group. And other two groups(comprising four rats each) had been treated as test groups. The paw volume of all rats in three groups were measured by plethysmograph. Wister albino rats were treated orally with normal saline (as control group) and androphis paniculata extract orally (20 mg/kg and 100 mg/kg) in two test groups, immediate after the 0.1 ml 1%w/v carrageenan injection. In control and two test groups paw edema of rats were measured by plethysmograph after 30 minutes and 1 hour of carrageenan injection. Results: The results were expressed as the Mean ±SD and the statistical significance of differences between groups was analyzed by one Way Analysis of Variance (ANOVA) .From statistical analysis, it shows that oral administration of androphis paniculata extract(20 mg/kg and 100 mg/kg) in two test groups inhibited paw edema dose-dependently at 30 minutes and 1 hour after of the carrageenan injection in comparison to the orally normal saline treated rats group(P<0.05).Conclusion: So we can conclude from the outcome of the present work that androphis paniculata extract has an excellent anti-inflammatory effect in the wister albino rats.

Keywords: Andrographis paniculata, Anti-inflammatory, Carrageenan , paw edema, plethysmograph.
**Sub-Code-1535**

Ref No: IcVCFn2T

**Title:** Lipidomic analysis of plasma sphingolipids in an East Asian population identifies novel associations with obesity- and diabetes-related characteristics

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**Abstract:**

Sphingolipids (SPs) are ubiquitous, structurally diverse molecules that consist of over 600 different confirmed species, but are likely to include tens of thousands of metabolites with potential biological significance. These include ceramides, hexosylceramides, sphingomyelins, and long chain bases that are produced by a well-characterized metabolic pathway. Individual SPs are known to be involved in the pathology of a number of disease states including obesity and diabetes. Therefore, it is likely that perturbations in plasma concentrations of these lipids will be associated with disease, as either a cause or a consequence. Identification of these associations may reveal prognostic or diagnostic biomarkers or may provide novel insight into disease processes. Historically, a complete understanding of the biological roles of these lipids has been limited by a lack of sensitive, discriminating, high-throughput analytical techniques. To address this knowledge gap, we utilized the latest mass spectrometry techniques to perform a lipidomics evaluation of over 100 molecularly distinct SLs in the plasma of 2,302 ethnically Chinese Singaporeans. These lipid profiles were compared to 445 matched clinical and demographic characteristics. We identified a number of significant associations with age, sex, body mass index, lipoproteins, insulin, and glycated hemoglobin. Notably, we found that these associations were not uniformly positive, which would be expected if global SP metabolism was elevated by age, obesity, and/or type 2 diabetes (T2DM). Instead, SP subclasses were elevated or depleted selectively, suggesting that the balance of SP metabolism, rather than overall SP accumulation, contributes to pathologies such as obesity. Furthermore, we identify specific SP molecules that are associated with T2DM incidence. Cumulatively, we report the first large-scale cross-sectional cohort of an Asian population, and identify putative biomarkers for obesity/diabetes risk.

**Sub-Code-1536**

Ref No: VDp59vKQ

**Title:** Toxicological Studies Of Indian Toad (Bufo melanostictus) Skin Extract

**Author Name:** Sangeethkumar Munigadapa

**Co-Author Name:** Prasad Neerati*

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Abstract:

Animal venoms and toxins have been selected over millions of years of evolution to act quickly and effectively on the victim body, which results in a massive repertoire of molecules able to bind to specific targets. Dose selection is a very important parameter for new compounds with potential biological activity like toxins. The toxins at low doses exert therapeutically beneficial effects and can lead to drug candidates. Still now limited research was done with the Indian Toad (Bufo melanostictus) toxins have more affinity and efficacy to biological systems. Natural toxins acts on essential vital mechanisms of living organisms and their alterations may lead to beneficial effects. They can attack components of the protein synthesis machinery, act in polymerization, signal transduction pathways, intracellular trafficking of vesicles as well as immune and inflammatory responses. For this reason, toxins have increasingly being used as valuable tools for analysis of cellular physiology. Toxicity studies did using female rats (Sprague Dawley) with Toad Skin Extract (TSE) using haemolytic activity by using human blood and counting the time for haemolysis. TSE has shown haemolytic activity (less than 2 min) compare with control. LD50 studies were done according to latest OECD 423 guidelines. After doing the experiment according to OECD 423 guidelines, found that the mortality observed in one animal among 3 at the dose of 2000 mg/kg so that it will categorized under 5 (Category-5) and it is concluded that the LD50 of TSE is 2500 mg/kg. So the experimental dose can be given 1/10th of LD50. That is 250 mg/kg per body weight. It is further concluded that the toxic reactions of TSE begins with hemolytic reaction and may leads to cardiovascular failures.

Sub-Code-1537

Ref No: swBAjhSj

Title: Isolation of endophytic fungi from Dendrobium nobile and its role on the biosynthesis of dendrobine

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Abstract:

Plant cellulose resources have the potential to become a source of various endophytic fungi and their chemicals by exploring the novel endophytic fungal strains. Realizing this potential, an investigation was done to isolated, identified and evaluate the potential species of endophytic fungi and coculturing with Dendrobium nobile for the evaluation of high yield of industrial important product (Dendrobine). For this purpose, the wild type endophytes like Trichoderma longibrachiatum, Fusarium oxysporum, Colletotrichum tropicum, Fusarium keratoplasticum, Ascochobolus sp., Fusarium solani, and Acremonium cavareaeum were recovered and identified on the basis of molecular mean by ITS4/ITS5 regions sequencing from the plant segments. Furthermore, the potential fungus (Trichoderma longibrachiatum) was inoculated on the seedling of Dendrobium nobile for the estimation of dendrobine concentration. After the coculturing experiment, the results of LC-MS analysis revealed to
identity the dendrobine concentration in coculturing test seedlings higher (4118 ng/ml dendrobine by using Trichoderma longibrachiatum) as compared to control seedlings (1682 ng/ml dendrobine). The mass spectrum of the dendrobine and standard reference dendrobine obtained showed characteristic ions at m/e 264.195 which contained dendrobine in coculturing seedlings, control seedlings and dendrobine in standard reference dendrobine. However, further investigations are required to confirm the promising effect of these endophytic fungal on dendrobine concentration at the field level for the advancement of pharmaceutical sciences.

Sub-Code-1538

Ref No: d7HvvF3Q

Title: Natural Foods and their Nutritional Retention: Study on Utilization of Infrared Heating as an alternative Thermal Source

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Abstract:

The drying or dehydration of foods is highly important method for the food industry and offers many possibilities for ingredient development with lesser water activity and products with longer shelf life to consumers. Drying is one of the oldest preservation processes available and in present food market scenario dried foods play a crucial role in the food supply chain. As for fruits and vegetables it can be estimated that they constitute about 1% of the total drying in the food industry. The principle of this process is reducing the water content in order to avoid or slow down food spoilage by microorganisms. But foods being biological in composition the content are more sensitive to heating, as conventional drying methods (conduction /convection) takes longer duration for drying, probability of losing some nutrients is very high. Using an alternative thermal source like infrared heating (radiation) we can reduce the losses during drying by reducing the process time. Infrared heating provides significant advantages over conventional heating, including reduced heating time, uniform heating, reduced quality losses, absence of solute migration in food material, versatile, simple, and compact equipment, and significant energy saving. Infrared heating can be applied to various food processing operations, namely, drying, baking, roasting, blanching, pasteurization, and sterilization. This present study emphasizes on aspects of infrared heating and its higher drying rates or lesser drying times of food products and possibilities of reducing the nutrient losses using a graphical representation for heat processing of different portions of plant like Purslane leaves, Green chillies, Potato and Onion bulbs in comparison with conventional tray drying method.

Key words: Infrared Heating, Drying, Drying time, green chillies, Potato, Purslane leaves, Onion bulbs

Sub-Code-1539

Ref No: SbJrsIZ2
Title: HERBAL EDIBLE COATING OF SELECTED CUT FRUITS

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Abstract:

Fruits are an important supplement to the human diet as they provide the essential minerals, vitamins and fiber required for maintaining health. However, cutting, slicing, chopping or peeling fruits reduces some of their nutritional value. Coating fruits with wax have become a common practice to improve post-harvest consumer appeal which may appear fresh, but can also have harmful effects on the human health. Natural extracts as coating material are non-toxic in nature and cost effective as compared to other synthetic coating, and one of the most useful innovations for extending the shelf life of fresh fruits. Fresh-cut Papaya (Carica papaya) and Muskmelon (Cucumis melo L.) represents a great snack alternative due to its low caloric content. Tulasi and Tamarind seeds have many medicinal and anti-microbial effects. The current study was carried out to coat sliced Papaya and Muskmelon with natural extracts such as Tulasi and Tamarind at different proportions of 10, 20 and 30 grams. Quality of the cut fruit samples TUP (Tulasi leaf extract coated Papaya), TAP (Tamarind leaf extract coated Papaya), TUM (Tulasi leaf extract coated Muskmelon) and TAM (Tamarind leaf extract coated Muskmelon) were evaluated by assessing moisture content, pH values, total soluble solids, titratable acidity, ascorbic acid content, Beta carotene content, total sugars, Color, Texture, sensory and microbial examination. Based on the observations it was found that Less moisture loss, high vitamin-C retention was observed in TUP-30. High pH, TSS, Beta carotene, good colour retention and texture, with less microbial load was observed in TUP-30. High total sugars and high overall acceptability was observed in TAP-30. Lowest titratable acidity was observed in TAP-10 in the Papaya samples. Less moisture loss, high TSS, high total sugars, low microbial load was observed in TUM-30. High pH was observed in TUM-20. High vitamin C, high Beta carotene, good colour and Texture, with highest overall acceptability was observed in TAM-30. Lowest Titratable acidity was observed in TAM-20 in the Muskmelon samples.

Sub-Code-1540

Ref No: 9I7vQCJP

Title: Role of Advanced Glycation End Products In Modulating Autophagy and ER Stress In Aging Rat Brain

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Abstract:
Background: Advanced Glycation End-products (AGEs) resulting from hyperglycemia are reactive derivatives formed by the Maillard reaction or during oxidation of lipids and nucleic acids. The Receptor for Advanced Glycation End Products (RAGE) is expressed in multiple cell types in the brain, which leads to the pathogenesis of neurovascular and neurodegenerative disorders, including neurons and glial cells. However, the mechanism of AGEs causing neurodegeneration is unknown.

Objective: To investigate the levels of AGEs (carboxymethyl lysine â€“ CML, Methylglyoxal-MGO) and RAGE in Wistar rats during ageing. The present study was aimed to evaluate the role of AGEs on neuronal, ER stress and autophagy markers in the brain during ageing.

Methodology: Wistar-NIN rats of 3, 6, 12, and 15 months were selected for the study. Brain tissue was dissected out and processed for H&E staining and immunobloting of ER stress, autophagy and neuronal markers. To assess the age-related changes in brain morphology along with Nissl staining to check the neuronal morphology in the brain of ageing rats.

Results: The results showed the higher levels of AGEs and RAGE in the brain as the age of the animal progresses. It was observed that age-related changes in autophagy and ER stress markers along with the rise in neurodegeneration marker, alpha-Synuclein during ageing. H&E and Nissl staining confirmed the structural changes in neurons of the brain with age progression. The increased AGEs in the brain would modulate the autophagy and ER stress markers resulting in neurodegeneration in ageing rat brain.

Conclusion: The findings of the study targeting AGEs and RAGE would be a new therapeutic approach in protecting neuronal injury.

Key words: AGEs, RAGE, ER stress, autophagy, neurodegeneration

Sub-Code-1541

Ref No: Ze9KIgUD

Title: Marine Derived Drug Lurbinectidin-A Potential Anticancer Agent

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Abstract:
With 79% of the earth's surface covered by water, research into the chemistry of marine organisms is relatively unexplored and represents a vast resource for new medicines to combat major diseases such as cancer, AIDS or malaria.

One such example is the development of the antitumor drugs such as Trabectidin and Lurbinectidin. Trabectidin is a multimodal, synthetically produced antitumor agent, derived from the Caribbean sack-like sea squirt, Ecteinascidia turbinata and is FDA approved for the treatment of metastatic Liposarcoma or Leiomyosarcoma. Lurbinectidin is an alkaloid analogue of Trabectidin. US FDA has granted Orphan drug status for Lurbenectidin on August 3rd 2018 for the treatment of Small Cell Lung Cancer (SCLC). SCLC is an aggressive cancer that usually presents with distant metastasis at the time of diagnosis and constitutes 18% of all lung cancers. Apart from platinum based therapies as first line treatment, the therapeutic alternatives are very few, thus requiring discovery of new drugs. Lurbinectidin selectively blocks the elongation of mRNA carried out by RNA polymerase II, indicating its high efficacy in transcription addicted tumors like small cell lung cancer, ovarian cancer and triple negative breast cancer etc.
Developing new techniques to manipulate biosynthetic pathways will lead to alternative ways to find, produce and modify molecules of marine origin, and thus enable the full potential of marine derived therapeutics to be realised.

**KEY WORDS**: Sea squirt, Trabectidin, Lurbenectidin, Small cell lung cancer (SCLC), RNA Polymerase II, Transcription, marine products.

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**Sub-Code-1542**

**Ref No:** jMcUS3pg
**Title:** Isolation, semi-synthesis and biological evaluation of novel limonoids from Trichilia connaroides
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**Abstract:**

Five novel limonoids of which two secophragmalin-type limonoids, secotrichagmalin B-C (1-2) and three mexicanolide-type limonoids, trichanolide F-H (3-5) were isolated from the fruits of Trichilia connaroides. The structures of the new compounds were elucidated by analysis of spectroscopic (IR, MS, and 2D NMR) data, and single crystal X-ray diffraction studies. In addition, semisynthetic derivatives (2a-2l) were efficiently synthesized, and evaluated for their in vitro cytotoxicity along with the isolated limonoids against a panel of human cancer cell lines. The results indicated that new analogues 2a, 2d, and 2e showed cytotoxicity on the DU145 cell line with IC50 values of 3.6, 4.2, and 5.2 µM, respectively. Flow cytometric analysis revealed that these analogues arrested the cell cycle in the G0/G1 phase, and markedly induced apoptosis. In addition, all the compounds were tested for their antifeedancy against tobacco cutworm Spodoptera litura as the limonoids are well known for both cytotoxic and insecticidal potentials. The parent compound secotrichagmalin C (2) lacked significant antifeedancy, however the analogues were effective in causing growth inhibition of S. litura. Notably, trichanolide F (3) and methyl ester of secotrichagmalin C (2b) displayed highest antifeedant index (AFI) and caused larval mortality at 24 h. Few compounds formed malformed pupae, leading to pupal mortality and few others caused prolonged molting and adult deformity. The results indicated that T. connaroides fruit extract is a rich source of potential cytotoxic and antifeedant candidates, whose activity can be enhanced by derivatisation.

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**Sub-Code-1543**

**Ref No:** rqNrCLY1
**Title:** Isolation, Synthesis And Cytotoxicity Evaluation of Schizandrin Derivatives From Schisandra chinensis
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**Abstract:**

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As part of pharmacological-phytochemical integrated studies on medicinal flora, Schizandrin (1) was isolated as major phytochemical lead from Schisandra chinensis. Schizandrin (1) was converted to active Schizandrinone (2). A series of oxime esters were efficiently synthesized by oxime conversion and standard esterification (acid chlorides, Et3N, CH2Cl2) at the keto position of the Schizandrinone (2) core. The synthesized derivatives were evaluated for their cytotoxic activities against A549, DU-145, RKO P3 and HeLa cancer cell lines using MTT assay. Among these, 4a manifested potent activity against DU-145 cell line with IC50 value of 3.42 μM and 4b manifested significant activity against RKO P3 cell line with IC50 value of 3.35 μM respectively. Further, cell cycle analysis clearly indicated that derivatives 4a and 4b stalled DU-145 and RKO P3 cells at G0/G1 phase and Annexin V FITC assay revealed that cell death is by apoptosis. Additionally, several of the other analogues exhibited moderate to promising activity against the tested cancer cell lines.

Key words: Schisandra chinensis, Schizandrin, oxime ester, Cytotoxic activities

Sub-Code-1544

Ref No: VDp59vKQ
Title: TOXICOLOGICAL STUDIES OF INDIAN TOAD (Bufo melanostictus) SKIN EXTRACT
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Abstract:
Animal venoms and toxins have been selected over millions of years of evolution to act quickly and effectively on the victim body, which results in a massive repertoire of molecules able to bind to specific targets. Dose selection is very important parameter for new compounds with potential biological activity like toxins. The toxins at low doses exert therapeutically beneficial effects and can lead to drug candidates. Still now limited research was done with the Indian Toad (Bufo melanostictus) toxins have more affinity and efficacy to biological systems. Natural toxins acts on essential vital mechanisms of living organisms and their alterations may lead to beneficial effects. They can attack components of the protein synthesis machinery, act in polymerization, signal transduction pathways, intracellular trafficking of vesicles as well as immune and inflammatory responses. For this reason, toxins have increasingly being used as valuable tools for analysis of cellular physiology. Toxicity studies did using female rats (Sprague Dawley) with Toad Skin Extract (TSE) using haemolytic activity by using human blood and counting the time for haemolysis. TSE has shown haemolytic activity (less than 2min) compare with control. LD50 studies were done according to latest OECD 423 guidelines. After doing the experiment according to OECD
423 guidelines found that the mortality observed in one animal among 3 at the dose of 2000mg/kg so that it will categorized under 5 (Category-5) and it is concluded that the LD 50 of TSE is 2500 mg/kg. So the experimental dose can be given 1/10th of LD50. That is 250mg/kg per body weight. It is further concluded that the toxic reactions of TSE begins with hemolytic reaction and may leads to cardiovascular failures.

**Sub-Code-1545**

**Refno:** dZjPX96i

**Title:** Control of dietary Advanced Glycation End Products with natural anti-AGE inhibitors for diabetes

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**Abstract:**

**Background:** Advanced glycation end products (AGEs) are formed by the Maillard process, a non-enzymatic reaction between ketone group of the glucose molecule or aldehydes and the amino groups of proteins that contributes to the aging of proteins. Due to food preparation methods, modern diets contain large amounts of AGEs. Dietary advanced glycation end products (dAGEs) are known to contribute to increased oxidant stress and inflammation, which are linked to the recent epidemics of diabetes and cardiovascular disease.

**Objective:** To estimate the Dietary Advanced Glycation End Products in different foods and to control them in the diet using natural inhibitors.

**Methodology:** The food samples were collected from the local market of twin cities of Hyderabad and Secundrabad. The solid samples were homogenized and extracted with a buffer; however the liquid samples were used after dilution as such. A competitive ELISA with a specific anti-CML monoclonal antibody (4G9) was used to measure CML in foods and developed with an alkaline phosphatase-conjugated sheep anti-rabbit IgG using p-nitrophenyl phosphate as the colorimetric substrate and measured at 405nm. The anti-AGE inhibitors were extracted from different medicinal plants such as Neem, Tulasi, Blackberry etc and spices such as Cinnaman, cardmom etc using different solvent methods and their anti-glycating capabilities were estimated by protein glycation.

**Results:** Different samples were estimated for AGEs content, which includes both the solid and liquid samples. Among the samples the AGE content of the milk products ranged from 0.5-3.9 ng/ml, biscuits ranged from 0.8-1.2 ng/ml, chicken and chicken products ranged from 3.9-4.6 ng/ml, fast foods ranged from 0.1-6.2 ng/ml and beverages ranged from 0.2-0.1 ng/ml. Some of the products did not show any AGEs. The anti-AGE inhibitors were extracted from natural sources like neem, tulasi, back berry, cinnamon, cardamom, red grape, pomegranate etc and treated to the AGE rich diet. The selected anti-AGE inhibitor shall be further used for the development of a nutraceutical.

**Conclusion:** This study will be useful in development of a nutraceutical from a natural source for the control of post diabetic and age related complications.

**Sub-Code-1546**

**RefNo:** CcJW3jht
Title: Intestinal absorption kinetics of lutein and zeaxanthin in humans

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Abstract:

Background: Lutein and zeaxanthin are oxycarotenoids associated with lowering the risk of age-related macular degeneration by acting as antioxidants and are known to selectively accumulate in the retina protecting it from photooxidative damage. The pharmacokinetic properties of these xanthophylls when studied can provide adequate information on developing dosing regimens which help in the reduction of several age related diseases in the elderly.

Objectives: To investigate the kinetics of oxycarotenoids, lutein and zeaxanthin in chylomicrons after ingestion of single oral dose of xanthophylls from cooked spinach and maize.

Methodology: A pilot study was conducted in eighteen healthy volunteers in the age group of 21-35 years. The subjects were grouped into control, lutein and zeaxanthin. The control group received food devoid of xanthophylls while the lutein and zeaxanthin received cooked spinach (lutein) and maize (zeaxanthin). Blood was drawn at 0h, 2h, 4h, 6h and 8h, serum was separated, chylomicrons isolated and xanthophylls were determined using HPLC. Anthropometric and lipid profile were determined.

Results: The comparison of the response of lutein and zeaxanthin postprandial in the chylomicrons after the consumption of cooked spinach and cooked maize indicated a significantly higher area under curve (AUC) in the spinach group as compared to the maize group indicating the absorption rate of lutein to be higher as compared to zeaxanthin and thereby the bioavailability. The chylomicron response in the spinach group with lutein as the major component was significantly higher after consumption as assessed by the lutein concentrations, its AUC response and Cmax peak concentration which depended on the dose of lutein which was 5.64mg per subject in the spinach group and 0.99mg of zeaxanthin from maize. The maximal concentration (Cmax) of lutein in the chylomicrons was observed at 6h (tmax) after intake of cooked spinach and dropped slowly at 8h while the zeaxanthin peak reached maximum (Cmax) at 4h and declined thereafter.

Conclusion: The absorption efficiency and bioavailability of xanthophylls lutein from cooked spinach is higher than zeaxanthin from cooked maize but lower compared to the pure supplements indicating long term consumption of cooked foods rich in lutein and zeaxanthin produces health implications for management of eye diseases and age related macular degeneration.

Key words: Bioavailability, xanthophylls, chylomicrons, kinetics
SECTION 2
51st Annual Conference of IPSCON-2019
Title: Evaluation of cognition enhancing ability of aldose reductase inhibitor, Epalrestat against Scopolamine induced amnesia in diabetic rats and its comparison with Donepezil

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Abstract:

Background: Chronic hyperglycaemia causes metabolic impairment and oxidative stress leading to cognitive impairment. Epalrestat, an aldose reductase inhibitor is known to have anti-oxidant, anti-inflammatory properties and can improve the reduced cognitive function.

Objective: To evaluate cognition enhancing ability of epalrestat in diabetic albino Wistar rats

Methods: Fifty six male rats - 7 groups of 8 rats each with group 1 as control. Type 2 DM was induced in groups 2 to 7 by feeding high fat diet for 30 days followed by single dose 35mg/kg streptozotocin intraperitoneally(i.p). Hyperglycemic rats were given epalrestat orally(57mg/kg) in group 4 and 5 and donepezil orally(0.5mg/kg) in group 6 and 7 for 28 days. Group 3, 5 and 7 were given i.p scopolamine (0.5mg/kg) 30-60 mins before behavioural assessment using morris water maze and passive avoidance. Hippocampal tissue was taken for histopathological evaluation. Results were analysed by one way analysis of variance [ANOVA] followed by post hoc Tukeyâ€™s test.

Results: Morris water maze: time spent in target zone (%) by diabetic rats treated with epalrestat (49.03 Â± 1.12) significantly (p<0.01) increased as compared to the group not treated with epalrestat (18.43Â±3.44). Acquisition trial day 4 latency (sec) decreased significantly (p<0.01) for treated group (29.03 Â± 2.88) as compared to non-treated group (50.39 Â± 2.4)

Passive avoidance (retention trial): Time spent in dark compartment (sec) by treated group (24.25 Â± 2.83) decreased significantly (p<0.0001) as compared to non -treated group (112.4 Â± 8.91). Latency to dark compartment (sec) increased significantly (p<0.001) in treated group.

Histopathological changes like enlarged apoptotic cells with marked darkened nuclei with vacuolation and clumping of processes seen in non-treated group were reverted in the group treated with epalrestat.
Conclusion: Epalrestat corrected the cognitive dysfunction seen in diabetic rats. Key-words: Cognitive impairment, epalrestat, diabetes

Sub-code-2102

Name- Shravanti Rupali P.K.Mishra
Ref No: u1GLEAwT
Title: To compare the efficacy and safety of patients with recurrent erythema nodosum leprosum treated using Thalidomide with Steroid & Clofazimine with steroid in a Tertiary Care Hospital
Author Name: Dr. Shravanti Rupali P.K.Mishra, Samal R., Behera. B.*, Mohapatra S, Das P, Pradhan R.
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Abstract:
Background and Objectives: Leprosy is a public health problem. Erythema Nodosum Leprosum (ENL) is a serious, relapsing, remitting, difficult to manage, immune mediated complications that occur before, during and after polychemotherapy. The incidence of ENL varies worldwide from 5% to 49%. Although steroids are the first-line treatment, they hold risks of recurrence and complications. Thalidomide, an immunomodulatory agent, has been reintroduced for treatment of ENL in Leprosy. The objective of this study was to assess the effectiveness & safety profile of Thalidomide and Steroid in comparison to Clofazimine and Steroid in management of patients with recurrent ENL.

Method: This prospective, observational study was conducted over a period of 6 months on leprotic patients attending Dept. of Dermatology for treatment of Erythema Nodosum Leprosum. The demographic and clinical data about duration of leprosy, recurrence of ENL, severity of disease, drug(s) administered, dose, frequency and side effects were collected in a preformed proforma. The patients were followed up weekly for the first month and monthly for 6 months. The documented data was analysed and safety & efficacy were compared using appropriate statistical methods (SPSS 19).

Results: Thalidomide and Steroid though having a few tolerable side effects, was found to be highly effective in reducing the severity in the steroid refractory recurrent ENL patients as compared to Clofazimine and Steroid.

Conclusion: Thalidomide is highly effective in management of steroid refractory ENL, especially in recurrent cases.

Sub-code-2103

Name - POOJA SHANKAR PUALSA
Ref No: Wk1B5vFc
Title: Pharmacological evaluation of Novel Chemical Entity against Alzheimerâ€™s disease in experimental animals.

Author Name: Pooja Pualsa,

Co-Author Name: Pallav Gandhi, Dushyant Patel, Dr.Kirti.V.Patel

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Abstract:

Novel Chemical Entities (NCE) were synthesized in Medicinal chemistry Lab, designed by the molecular hybridization of an N-substituted Triazinoindole derivative with Carbazole/thiazole salt and Stilbene derivatives. These NCEâ€™s were anticipated to possess the Anti-cholinesterase, Anti-AÎ² aggregation, Anti-oxidant and Neuroprotective effects. In-vitro screening of 40 NCEâ€™s by (Ellmanâ€™s Assay (EA), Thioflavine T Assay, DPPH Assay) revealed lowest IC50 with KD25. Thus it was evaluated in experimental animal models, in Scopolamine induced amnesia in mice (Model-1) and AÎ² induced Alzheimerâ€™s disease (AD) in rat (Model-2). In Model-1, Male Balb/C mice were divided in 5 groups. Animals of Group-1 received Saline (0.9% NaCl.p.o). Scopolamine hydrobromide (1mg/kg,i.p.) was injected in Group 2-5 for 14 days. 30min before the administration of Scopolamine hydrobromide, Group 3, 4, 5 received Donepezil hydrochloride (5mg/kg,p.o.), KD25 (5mg/kg,p.o) and KD25 (10mg/kg,p.o) once daily respectively. In Model-2, Sprague Dawley rats were divided in 6 groups. Animals of Group-1 & 2 received Saline (0.9% NaCl.p.o) and WFI (4μl,i.c.v) for 14 days respectively. Group-2 served as Sham control. Animal of Groups-4, 5, 6 received Donapezil hydrochloride (5mg/kg,p.o) and KD25 in 2 doses (5mg/kg,p.o & 10mg/kg,p.o) respectively for 15 days. On 7th day the above administered animals of Group 3, 4, 5, 6 received AÎ²-42 (2Î¼M, 4Î¼l,i.c.v.) through stereotaxic apparatus. The behavioral parameters (Escape latency time and Spontaneous alteration performance) by Morris water maze & Y-maze test respectively. The biochemical parameters (EA, Brain TBARS, GSH, SOD, Catalase, Total protein, dopamine, Glycine) were evaluated. KD25 significantly improved AÎ² and Scopolamine induced changes in behavioral parameters, improved memory Neurotransmitter levels and decreased AChE and BuChE level. Histopathological evaluation by Congo Red Staining showed decreased accumulation of Neurofibrillary tangles and AÎ² Fibrils in Brain and Spleen. KD25 also provided protection against Scopolamine and AÎ² induced oxidative stress as seen by increased GSH, SOD & Catalase. Toxicity was not observed till (2000mg/kg,p.o), Thus KD25 can serve as a potential candidate for treatment of AD with anti-Cholinesterase, inhibition of AÎ² aggregation and decrease in oxidative stress.

Sub-code-2104

Name- Madhura Dixit

Ref No: Ib4EXpom

Title: Agmatine inhibits neuro-inflammatory cascade to improve cognitive functioning in beta amyloid induced Alzheimerâ€™s disease.

Author Name: Madhura P. Dixit
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Abstract:
Neuroinflammation aggravates the progression of Alzheimer’s disease (AD) and the associated inflammatory pathways may provide a new therapeutic window for the treatment of AD. The present study investigated the role of agmatine within hippocampus on ß-Amyloid (Aβ) induced AD in mice. Aβ injected mice demonstrated progressive impairment of cognitive abilities evaluated as reference memory error and working memory error in radial arm maze (RAM) and decreased recognition index in novel object recognition (NOR) test along with substantial elevated levels of BACE 1, microtubule associated protein tau (MAPt), IL-6, TNF-Î± and reduced levels of neprilysin and BDNF. Importantly, this was associated with gradual and progressive reduction in the agmatine levels following Aβ administration. Chronic administration of agmatine from day 8-27, significantly prevented the memory impairment in RAM and NOR evaluated on 28th day. Further, it normalized the neurochemical alteration in MAPt, IL-6, TNF-Î± and neprilysin within PFC and hippocampus induced by Aβ peptide. However, it did not modulate the APP and BACE expression. Histological analysis revealed increased spine density in the hippocampal region of agmatine treated AD mice. Together, this study clearly suggests that agmatine improves learning and memory impairment possibly through down regulation of neuroinflammatory pathways in AD. This investigation, provide a visible correlation supporting the protection of agmatine against AD associated learning and memory deficits via reducing pro-inflammatory cytokine production.

Key words: Agmatine; ß-Amyloid (Aβ); Alzheimer’s disease; neuro-inflammation

Sub-code-2105

Name- Gayatri Veersing Shivsingwale
Ref No: 9igtr0QM
Title: Evaluation of intranasal administered INDCA on chronic unpredictable mild stress induced depression and cognitive deficit in rats.
Author Name: Gayatri Shivsingwale

Co-Author Name: Aswar Urmilaa, Prasad Thakurdesaib

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Abstract:

Introduction: Previously we have reported INDCA is asiaticoside based standardized aqueous extract of Centella asiatica for anti-depressant and anti-migraine effect.

Aim: Evaluation of intra-nasal administration of INDCA on chronic unpredictable mild stress (CUMS) induced depression, cognition, anxiety and aggression.

Method: Sprague-Dawley rats of either sex were divided into 6 groups as group 1: Vehicle control (10 µl, i.n. twice daily), group 2: Stress control (10 µl, i.n. twice daily), group 3: Standard group: Buspirone (0.25mg/kg/nostril, i.n.), group 4: INDCA (5 µg, i.n. twice a day), group 5: INDCA (15 µg, i.n. twice a day) and group 6: INDCA (50 µg, i.n. twice a day). The overall duration of study was of 7 weeks (49 days), with initial 35 days included exposure to various stressors followed by treatment from day 36th to day 49th. Percent sucrose preference was carried out before induction of stress, post stress and post treatments. Behavioural parameters (marble burying test, sucrose preference test, Morris water maze, Y-maze, resident intruder test) were conducted on day 0, 35, 42 and 49. At the end of the treatment, blood was withdrawn followed by isolation of brain for estimation of cortisol and brain derived neurotrophic factor (BDNF).

Results: INDCA, dose dependently improved spatial, working and recognition memory (p<0.001). It significantly attenuated anxiety and aggression and improved sucrose preference as compared to stress control group (p<0.0001). INDCA significantly reduced cortisol concentration in serum and brain homogenate (p<0.001). BDNF was non-significantly increased in stress control group might be due to adaptation to CUMS while treatment with INDCA (30 and 100) non-significantly decreased BDNF concentration.

Conclusion: Intransal INDCA was effective in attenuating CUMS induced depression, cognitive decline, anxiety and aggression in rats which might be attributed to its 5HT1A/B agonist property. It ameliorates HPA axis and also exhibit nootropic and neurotropic effects.

Sub-code-2106

Name- PATHAKALA NAVEEN
Ref No: sLF9npsJ
Title: Neuroprotective Effect of Microspheres Containing Nevirapine on Cerebral Ischemic Stroke by Middle Cerebral Artery Occlusion in Wistar Rats
Author Name: Naveen Pathakala
Affiliation: Osmania University
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Abstract:

Objective: To assess the neuroprotective effect of microspheres containing Nevirapine on cerebral ischemia stroke by middle cerebral artery occlusion in wistar rats.

Methods: The rats were pre and post treated with Nevirapine microspheres (NVP) at selective doses (5, 10 mg/kg/g, p.o) for a period of 14 days followed by middle cerebral artery occlusion
(MCAO). Neurobehavioral changes were evaluated by using Y-maze and open field habituation. Biochemical markers such as acetyl cholinesterase (AChE), glutamate, differential leukocyte count (DLC), lactate dehydrogenase (LDH), antioxidants such as superoxide dismutase (SOD), glutathione peroxidase (GPX) and catalase were estimated.

Results: The accomplished results revealed that 14 days of treatment with NVP microspheres was effective in averting neurotoxicity. NVP microsphere treatment significantly reduced AChE, glutamate, DLC, LDH and elevated levels of antioxidant parameters such as SOD, catalase and GPX..

Conclusion: These results clearly revealed that Nevirapine microspheres exhibited cognitive improvement which is related to its antioxidant and neuroprotective activity.

Key words: Microspheres, Nevirapine, Neuroprotection, Middle cerebral artery occlusion, cerebral ischemia.

Sub-code-2107

Name - Arpita Mishra

Ref No: amqjW0wo

Title: Central Histaminergic Transmission Attenuates Post Stress Induced Behavioral Despair in Mice.

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Abstract:

An enhanced brain histaminergic transmission and content was evident after subjecting the rodent to acute and chronic restrain stress and it could play a cardinal role in stress induced behavioral changes. Therefore, present study explored the modulatory role of histaminergic transmission via its receptors in the brain that are involved in development of stress induced depression like behavior. The results demonstrates that 24 h restraint stress followed by 48 h lag period produced manifestations of behavioral despair which was evident from increased duration of immobility on tail suspension test (TST) in mice. Treatment with agents capable of elevating central histaminergic transmission like on central administration (i.c.v.) of histamine (0.1, 10 Âµg/mouse, i.c.v) or histamine neuronal releaser, histamine H3 receptor antagonist, thioperamide (2,10 Âµg/mouse, i.c.v) and on i.p. treatment with histamine precursor, L-histidine (250, 500 mg/kg, i.p) during the induction period of stress i.e. at 1 h and 23rd h of restrain stress, significantly attenuated the expression of stress induced enhanced immobility time in TST in stressed mice. Moreover, similar central administration of histamine H1 receptor agonist, FMPH (2, 6.5Âµg/mouse, i.c.v) or H2 receptor agonist, amthamine (0.1, 0.5Âµg/mouse, i.c.v) during induction of stress also obliterated the behavioral depression evident in stressed mice. Thus, it is hypothesized that elevation of brain histamine transmission might be a novel approach in the management of and reversal of stress induced behavioral despair probably via post synaptic H1 and H2 receptor stimulation.
Sub-code-2108

Name- Praveen Kumar S E

Ref No: nqTvVjjb

Title: Neuroprotective Effect of Artesunate In Amyloid Beta 1-42 Peptide Induced Alzheimerâ€™s Disease in Albino Wistar Rats

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Abstract:

Background: Alzheimerâ€™s disease (AD), a neurodegenerative disorder, is a common cause of dementia among older adults. Artemisinin and its derivatives (artesunate) have proved to have an anti-neuroinflammatory effect in degenerative disorders. There is lack of information on the effect of artemisinin derivatives in dementia.

Objectives: To decipher the neuroprotective effect of artesunate in amyloid beta 1-42 induced AD in albino Wistar rats.

Materials and Method: Sixty albino Wistar rats were divided into five groups (n=12). Rats of first group were stereotaxically injected with Dimethyl sulfoxide(10% DMSO) and other four groups with intracerebroventricular(ICV) amyloid beta 1-42 peptide 5μg/5μl. After ICV injection, the groups received saline, distilled water, Artesunate , rivastigmine and artesunate with rivastigmine combination, respectively by oral route for 30days. The animals were then tested in the Morris water Maze(MWM) , and at the end of the experiment, animals were sacrificed. Tissues were used for biochemical ( TNF-α, IL-1β) and histological analysis (Cresyl violet staining). and all the data was statistically analysed by one way anova using Graphpad prism 5.

Results: Artesunate (30.17±3.66s) alone as well as in combination with rivastigmine (32.55±4.15s) showed significant difference in time spent in target quadrant (MWM) test, when compared to control (31.63±6.12s) and lesion group(13.40±3.21s) with significance value of p<0.001. These changes were correlated with proinflammatory markers expression( TNF-α, IL-1β) and neuronal count in cresyl violet staining.

Conclusion: Artesunate alone and in combination has shown to have a neuroprotective effect in the amyloid beta 1-42 petide induced AD.

Key-words: Alzheimerâ€™s disease, Intra cerebroventricular injection, Dimethyl sulfoxide, Morris water maze.
Title: Innovative Approach to Target Type 2 Diabetes Mellitus Cannabinoid Receptor 2 Agonist Combined with L Arginine

Abstract:
Beta-caryophyllene (BCP) is cannabinoid receptor 2 (CB2) agonist with insulinotropic and L-arginine (LA) shows and beta cells regeneration activity. Individually both drugs show anti-inflammatory and anti-oxidant activity also. The combination of BCP and LA could work as a potential treatment of type 2 diabetes mellitus (T2DM). The aim of the present study was to evaluate the anti-diabetic potential of BCP and LA in low dose streptozotocin and high-fat diet-induced T2DM in rats. T2DM was induced by a single low dose of Streptozotocin (35mg/kg i.p. after 15 days of dietary manipulation using a high-fat diet. Group I and II was normal and HFD control whereas group III was diabetic control. Group IV Standard (Glipizide 5 mg/kg oral) and group V (BCP 200 mg/kg oral), group VI (LA 150 mg/kg oral) and group VI treated with the combination of both (BCP 200 mg/kg and LA 150 mg/kg oral) once daily. At the end of 42 days, plasma was analyzed for glucose, cholesterol, triglycerides, Insulin, TNF-α, adiponectin. Anti-oxidant parameters, western blotting (Nf-κB) and immunohistochemistry (SIRT-1) of the pancreas were also done. Oral treatment of Standard and combination of BCP and LA showed a significant decrease in the glucose (p<0.001), significantly decreased in cholesterol (p<0.001) and TG (p<0.01) levels, also a significant increase in HDL levels. Inflammatory markers also significantly decrease in the combination of BCP with LA as compared to disease group. Combination of BCP with LA shows significant oxidative defence against diabetes. Standard treatment and combination of BCP and LA showed significant (p<0.001) increase in the expression of SIRT-1. Nf-κB expression in the pancreas was also decreased in combination of BCP and LA treated group. In conclusion, the combination of BCP with LA shows the potential anti-diabetic activity and also shows a significant reduction in diabetic induced inflammation.
Title: A Randomized Controlled Study to Evaluate the Effects of Yogic Intervention as an Adjunct to Conventional Pharmacotherapy in COPD and the Possible Cellular and Molecular Mechanisms

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Abstract:

Background: Yoga is a traditional therapy, shown to be beneficial in chronic airway inflammatory disorders; therefore the study was conducted to validate its use in COPD by evaluating pulmonary functions, markers of inflammation and oxidative stress and quality of life in patients of COPD.

Materials and Methods: Patients with clinical diagnosis of COPD were recruited as per inclusion/exclusion criteria and allocated randomly to either Group I, administered conventional pharmacotherapy or Group II, given yoga + conventional pharmacotherapy. Pulmonary functions viz. FEV1, FVC, FEV1/FVC and quality of life were evaluated at baseline and after 12 weeks of treatments. To delineate the possible dynamics of yogic intervention, various cellular and molecular markers of inflammations viz. fractional exhaled nitric oxide (FeNO), clara cell 16 (CC16) and oxidative stress viz. superoxide dismutase (SOD), 8-isoprostane were measured.

Results: The results showed a significant improvement in pulmonary functions after 12 weeks of treatment in both the groups. The level of FeNO was found to be reduced significantly only in Group II (by 31.29%) as compared to that in Group I (by 7.82%). CC16 in Group I was increased by 42.68% whereas in Group II, its level increased by 93.74% after 12 weeks. Interestingly, Group II showed a significant improvement in SOD by 43.07%. Although, the level of SOD was also increased by 14.5% in Group I, it was not significant. 8-isoprostane levels in Group I was decreased significantly by 11%. In Group II also, the levels decreased significantly by 24% as compared to its baseline value. The improvement in total score of quality of life was 14.59% in Group I and 59.44% in Group II.

Conclusion: The results suggested that introducing yoga as an adjunct therapy in COPD patients can enhance the efficacy of conventional pharmacotherapy possibly by maintaining a homeostasis between the pro-oxidant and anti-oxidant.
Title: To evaluate the efficacy and safety of topical 1% Luliconazole versus topical 1% Terbinafine in Pediatric Dermatophytosis.

Abstract:

Introduction: Topical antifungals that are currently used comprises of azoles, allylamines, we conduct a comparative study of use of Luliconazole 1% cream and Terbinafine 1% cream in pediatric age group.

Aims and Objectives: To compare efficacy and safety of Luliconazole 1% and Terbinafine 1% in pediatric patients attending the dermatology OPD.

Materials and Methods: 100 patients of suspected dermatophytic infections were enrolled in this observational, randomized comparative study. Mycological assessment was done by KOH mount.

Results: Of the 100 patients, 79 completed the study, Luliconazole (n = 41) and Terbinafine (n = 38). The primary efficacy variables including change in pruritus, erythema, desquamation and mycological cure were significantly improved in both the groups, as compared to baseline, in the treatment and follow-up phase. Greater proportion of patients in Luliconazole group (73.17%) showed resolution of pruritus as compared to Terbinafine (63.15%) at the end of treatment (p=0.329 Luliconazole vs Terbinafine) and at the end of the followup phase the resolution of pruritus to Luliconazole (97.56%) and Terbinafine (71.05%) (p=0.001 Luliconazole vs Terbinafine). There was a greater reduction in mean total composite score (pruritus, erythema, and desquamation) in Luliconazole group (98.09%) as compared to Terbinafine (90.06%). Both groups showed equal negative mycological assessment suggesting of no recurrence of the disease. Both the study drugs were well tolerated.

Conclusion: Luliconazole was better than Terbinafine and in relieving signs and symptoms during treatment and follow up period. At the end of "Treatment Phase" and "Follow-up Phase", all patients showed negative mycological assessment in both the treatment groups suggesting no recurrence of the disease. Both the drugs showed good tolerability with no adverse effects.

Keywords: Dermatophytosis, Luliconazole, Terbinafine
**Sub-code -2203**

Name- Dr. Archana Rathore

Ref No: leZuvViR

Title: Comparative evaluation of Olanzapine with Aripiprazole Vs Olanzapine with Amisulpiride in Schizophrenic patients partially responding to Olanzapine alone

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**Abstract:**

Aims & Objective: schizophrenia is one of the most commonly encountered psychiatric disorders. Now a days mainstay of treatment of schizophrenia is by using atypical antipsychotics. No study have directly compared the efficacy & tolerability of combinations of atypical antipsychotics.

Material & Method: Randomized , open label prospective parallel group observational study compared the efficacy & tolerability of olanzapine(10 mg) combination with aripiprazole(5-10mg) versus olanzapine(10mg) with amisulpiride(100mg) in patient already treated with olanzapine alone & partially responded. 90 patient of either sex were randomized to receive standard doses of two combination of drugs orally for 8 week with follow up at every 4 week. Effectiveness was assessed by change in score of Positive Negative Symptom Scale (PANSS) total score from baseline & Clinical Global Impression score during treatment period.

Result: Ninety patients were evaluated by dividing into two groups , 45 patients in each group . At week 8 , mean change in PANSS total score (olanzapine + aripiprazole â€“ 52 , olanzapine + amisulpiride â€“ 40 ) showed a treatment difference of 12 points , difference was statically significant (<0.05) .Olanzapine with aripiprazole proved to be superior to olanzapine with amisulpiride. Olanzapine with aripiprazole showed significant improvement in CGI-I scale

Conclusion: Both groups showed improvement in PANSS score & both groups are statistically significant. Olanzapine + aripiprazole had efficacy advantage over olanzapine + amisulpiride. Whereas amisulpiride was associated with significantly improvement in negative symptoms .

Keywords: Aripiprazole , Amisulpiride , PANSS , CGI-I score .

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**Sub-code-2204**

Name- Aakash Dhruva

Ref No: vyuHYvgv

Title: A study to determine the serum trough concentration of Vancomycin achieved with doses used in the current practice in patients undergoing intermittent hemodialysis.

Author Name: Aakash Dhruva, Binu S Mathew1, Sumith K Mathew1, Vinoi David2, Ratna Prabha1, Blessed Winston1
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Abstract:

Background: Infection is the second most cause of mortality among patients undergoing hemodialysis. Vancomycin is a last-resort antibiotic empirically recommended and routinely administered among such patients. Pharmacokinetic profile of vancomycin is complex and warrants serial monitoring of blood samples. However, there are no clear guidelines about the timing and frequency. This study seeks to improve the existing literature about serum vancomycin concentrations in hemodialysis patients.

Methods: 40 patients were recruited after obtaining informed consent. Vancomycin was administered at a fixed dose of 1 gram intravenous infusion every 96 hours. Patients underwent hemodialysis as decided by the clinician. Multiple samples were taken at predetermined time points (24-36 hours, 48-72 hours and 72-100 hours) in a 4 ml tube. Blood samples were transferred to Clinical Pharmacology Unit and analysed using High-Performance Liquid Chromatography.

Results: The vancomycin concentrations followed normal distribution after performing Shapiro-Wilk test. Mean concentration at an average of 34.12 hours was 17.14 ± 6.36 mg/l. were in therapeutic range. Mean concentration at average of 71.17 hours was 15.37 ± 7.39 gm/l. Mean concentration at an average of 95.16 hours was 13.05 gm/l ± 8.13 gm/l. Repeated measures Analysis of Variance (ANOVA) was performed with a p value of 0.313 (>0.05). 14 out of 40 patients were in therapeutic range over this duration. 32 out of 40 patients (80%) showed clinical resolution at the end of 96 hours.

Conclusions: The average serum vancomycin concentration across the 96 hours duration was within therapeutic range as decided by Infectious Diseases Society of America (10-20 mg/L). There was no significant difference in vancomycin concentration across multiple time-points. There was no significant change in serum creatinine. There is need for further evaluation of clinical and pharmacokinetic discordance of vancomycin.

Sub-code-2205

Name- Mehdi Ali Mirza

Ref No: MxKys1SY

Title: Effect of Tablet Solifenacin 10mg on Oro-caecal Transit Time by Sulfasalazine Method in Healthy Human Subjects

Author Name: Mehdi Ali Mirza,

Co-author name: D Aruna, P Usharani

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Abstract:

Introduction: Solifenacin is a selective muscarinic(M3) receptor blocker indicated for overactive urinary bladder. Constipation is the commonly reported side effect with this drug. Literature of its activity on bowel function and orocaecal transit time(OCTT) in healthy human is few and inconclusive. The transit of sulfasalazine/sulfapyridine is the standard and validated non-invasive method to estimate OCTT. This study was planned to evaluate the effect of solifenacin on OCTT in healthy subjects.

Methods: This is a randomized, open label, placebo controlled, crossover study. After IEC approval and informed consent, 12 subjects were enrolled. The subjects were administered either tablet solifenacin 10mg or an identical placebo in fasting state as per prior randomization schedule under supervision with 240ml of water. The study medications were administered one hour before administering 2g sulfasalazine. Salivary samples were collected at -1, 0, 2, 3, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 9, 10, 11, 12, 13, 14 and 24 hours of sulfasalazine administration. After 15 days of washout period, subjects were crossed over to receive the other treatment and the same procedure was repeated. ADRâ€™s were recorded in CRF. The salivary samples were analyzed by Bratton and Marshall Method (diazotization). Statistical analysis was done using SPSS20.0.

Results: 12 male volunteers with mean age of 33±7(20-44) years and BMI of 22.2±2.1(18.6-24.6)kg/m2 participated. There was a significant (p<0.001) increase in the mean OCTT with solifenacin 10ml (565±113 minutes) compared to placebo (408±82 minutes). No adverse effects were observed.

Conclusions: Solifenacin 10mg significantly increased OCTT in healthy male subjects compared with placebo suggesting that it may delay gastric emptying. This may impair absorption or augment gastrointestinal inhibitory effect of other concomitantly administered medications. Moreover it may cause symptoms related to delayed gastric emptying like constipation. Further studies are warranted in larger population to confirm this effect and aid the clinician on drug interactions with solifenacin.

Sub-Code-2206

Name- PRIYA GUPTA

Ref No: uHkKIOXG

Title: RARE ADVERSE EVENTS OF DRUGS- CASE REPORTS

Author Name: Priya Gupta, Seema Baishnab, Priynka Ranga

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Abstract:

"Introduction: Adverse drug reactions are one of the main causes of mortality and a major financial burden on world’s economy. Although some ADRs present as minor symptoms, others are serious and cause mortality.
Case 1- A Polycystic ovarian disease patient with impaired blood sugar on treatment with tablet Thyroxine(25µg) presented with headache and blurring of vision, was diagnosed as idiopathic intracranial hypertension.

Case 2- A female patient with retained placenta treated with Methotrexate for 3 days presents with peculiar features of Steven Johnson syndrome.

Case 3- An Epileptic patient on Phenytoin for 15 years developing Type 2 diabetes and Phenytoin toxicity.

**Conclusion** - We consider that these cases are important in bringing these rare side-effects to the attention of both pharmacologists and physicians in our clinics.

Sub-code-2207

Name- Sarita

Ref No: kdYs2eRL

Title: Health-related quality of life with Ulipristalacetate And Letrozole for treatment of uterine Leiomyomas

Author Name: Sarita Goyal

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**Abstract:**

**Introduction:** Uterine leiomyomas, are the most common benign pelvic tumors, with a lifetime prevalence of 30% to 70% in women of reproductive age. Abnormal uterine bleeding, pelvic pain and abdominal pressure are the main symptoms which interfere with daily physical and social activities, and negatively affect women’s well-being and health-related quality of life (HRQOL). Ulipristal acetate and letrozole have important role in the treatment of leiomyomas. In spite of advances in the treatment of leiomyoma, one area that has been relatively neglected is the assessment of health related QOL resulting from the presence of uterine fibroids.

**Objectives:** To investigate effects of ulipristal acetate and letrozole on health-related quality of life and symptom severity in women with symptomatic uterine leiomyomas and abnormal uterine bleeding.

**Material and methods:** Sixty four premenopausal women aged 20-50 years, diagnosed with symptomatic fibroids and abnormal uterine bleeding was divided into two groups of 32 each. They were prescribed 3 months of daily therapy with either Tab. Ulipristal acetate 5mg or Tab. Letrozole 2.5 mg. Health Related QOL and Symptom Severity were assessed at baseline and at 12 weeks post-treatment course using the Uterine Fibroid Symptom Health Related Quality of Life Questionnaire.

**Results:** Uterine fibroid symptom severity score reduced from baseline 45.00 Â± 2.62 to 19.04 Â± 2.51 (57.67%) at 12 weeks with ulipristal acetate and from 46.14 Â± 2.83 to 23.80 Â± 2.24
(48.40%) with letrozole. Health related quality of life score at baseline was 52.97 ± 3.17 which increased to 77.28 ± 3.43 (45.89%) at 12 weeks with ulipristal acetate and from 51.64 ± 3.49 increased to 74.04 ± 2.58 (43.37%) at 12 weeks with letrozole.

Conclusion: Both the drugs showed significant improvement in Symptom Severity and Health Related Quality of Life for women with uterine leiomyomas.

Sub-code-2208

Name- Dr. Jalpa Vashishth Suthar
Ref No: WxJPGuup
Title: Assessment of Inhalation Techniques in COPD and Asthma Patients using Metered Dose Inhaler and Rota-haler
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Abstract:

Background: Inhaler dosage forms are cornerstone therapy in respiratory disease. Inhalers are principle vehicles for effective administration of medication. The effectiveness of inhalation drugs can affect by factors including age, gender, education status, duration of disease, type of inhaler used and correct inhalation technique.

Objectives: To assess Inhalation Technique in the patients of COPD and Asthma using MDI and Rota-haler. Study prescribing trend of patient of COPD and Asthma.

Methods: A prospective, interventional study conducted in Medical Outpatient Department of Sheth HJ Mahagujarat Hospital, Nadiad. Patients were diagnosed with asthma and COPD using MDI and Rota-haler inhalers. Total 60 patients were included in the study; Patients’s history was recorded and after explanation of procedure for inhalers; assessments of inhalation technique were evaluated in inhaler specific checklist described by Dutch Asthma Foundation.

Results: Total 53.39% (Asthma) and 58.35% (COPD) users used inhaler incorrectly. In Asthma MDI; it shows clinical significance but statistically non-significant (p=0.10) and Rota-haler; shows both clinical and statistical significance (p=0.01). In COPD MDI (p=0.02) and Rota-haler (0.04); shows both clinical and statistical significance (p=0.02). It shows improvement in patients’s performance after providing information on use of inhaler. The most commonly prescribed drugs with MDI and Rota-haler were Short acting β₂-agonist, Corticosteroids and Combination of Bronchodilator and Corticosteroids.

Conclusion: Majority of patients in Asthma (53.39%) and COPD (58.35%) used inhaler incorrectly which leads to decrease in efficacy and drug delivery, increased side effects and economic burden with non-compliance. Post Intervention use on inhalation technique showed improvement.
Name- Dr Radhika Soanker
Ref No: e1Lw1jRU
Title: Significant case based insights provided by drug information services - Interpretation of drug levels in low dose methotrexate regimens
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Abstract:
Introduction: Therapeutic drug monitoring is increasingly being used when there is lack of response or toxicity. This presentation highlights, how pharmacokinetic and pharmacodynamic knowledge was used to guide the management of three selected cases by drug information services at a tertiary care hospital.
Case 1 was a 60-year-old female patient with rheumatoid arthritis, on treatment with methotrexate, who presented to OPD with complaint of oral ulcers and dysphagia. Suspecting it as methotrexate induced mucocutaneous toxicity, methotrexate was stopped and estimation of methotrexate reported undetectable levels.
Case 2 was a 20-year-old female patient with takayasu arteritis, on treatment with methotrexate, who presented with high grade fever. Investigations revealed TLC to be 2000/cu.mm and platelet count 1.8 lakhs/cu mm. Suspecting it as methotrexate induced cytopenia, history was elicited which revealed that patient took last dose of methotrexate three weeks back. In such cases, should methotrexate level be estimated?
Case 3 was a 31-year-old lactating mother with rheumatoid arthritis on sulphasalazine and hydroxychloroquine, who presented to OPD with complaints of increased severity of joint pains. On evaluation, methotrexate was prescribed with an advice that she needs to avoid breast-feeding when taking that medication. As she wished to continue breast-feeding, she was referred for opinion on continuation of breast-feeding, while taking methotrexate.
Discussion: As half-life of methotrexate is 3-10 hours in low-dose methotrexate regimens, the serum levels become undetectable after 24 hrs of dose. However, as methotrexate gets converted to polyglutamates, which act as dihydrofolate reductase inhibitors, toxicity may occur despite undetectable levels of methotrexate. As serum methotrexate level in mother after 24 hours is negligible in low dose regimens, with an abstinence of breast-feeding for a period of 24-30 hrs after dose, the exposure to breast-feeding infant would be negligible.
Conclusion: Knowledge of pharmacokinetics and pharmacodynamics is indispensable for interpretation of serum drug levels. Drug information services aid in effective patient care.
Title: A study to evaluate prevalence of TPMT polymorphism and determine Clinical, Pharmacogenomic and metabolomic predictors of efficacy and safety of Azathioprine therapy in patients with IBD.

Author: Phulen Sarma

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Abstract:

Introduction: In this study, we want to evaluate clinical, pharmacogenomic (TPMT genotype) and metabolomic (Intraerythrocytic 6-thioguanine level) parameters as a biomarker of azathioprine safety and efficacy in Indian population.

Materials and methods: The primary objective was evaluation of prevalence of TPMT gene polymorphism among Indian patients with IBD and effect of TPMT polymorphism on hematological toxicity of azathioprine. Secondary objectives were evaluation of clinical, pharmacogenomic (TPMT polymorphism) and metabolomic (intra-erythrocytic 6-TGN level) as predictors of azathioprine efficacy and toxicity. A prospective observational study was carried out after ethical committee approval. Participants were recruited after fulfilling inclusion exclusion criteria. Clinical, genomic (5 polymorphisms of TPMT, evaluated by TaqMan probes using real time PCR) data and metabolomic data (intraerythrocytic 6-TGN level, measured using reverse phase HPLC) was collected. Statistical analysis was done by SPSS (version 22) software as per data type and distribution.

Results: A total of 193 participants were recruited. Common ADRs were myelosuppression (13.9%), hepatotoxicity (3.48%) and pancreatotoxicity (1.16%). The most common polymorphism found was TPMT*3C (n=193, Wild type 93.2%, *1/3C type 6.73%, allelic frequency TPMT*3C was 3.73%). TPMT*3B was associated with occurrence of myelotoxicity (n=82). Regarding other ADRs, no association was seen with any of the polymorphisms. Among metabolomic predictors, 6-TGN level was significantly associated with myelotoxicity. A cut of 6-TGN level of 400pmol/8×10⁸ RBC had 100% specificity, 100% positive predictive value and 95.45% negative predictive value for predicting myelotoxicity. Again, regarding remission, 6-TGN level was significantly higher in patients on remission. 6-TGN level >200 pmol/8×10⁸ RBC had a sensitivity of 73.33% and specificity of 73.58% for predicting remission.

Conclusion: TPMT*3B was associated with myelotoxicity. 6-TGN is a better biomarker for azathioprine safety and efficacy. The therapeutic range of 6-TGN level for Indian patients ranges from 200-400 pmol/8×10⁸ RBC, which is little low than western values.
Title: Diosmin, a citrus flavonoid ameliorates the neurobehavioral changes and neurotoxicity caused by arsenic via inhibition of NOX 4 and its subunits

Abstract:
Arsenic contaminated water affected millions of people across the world. Epidemiological studies indicated an association of chronic arsenicism with various neurological disorders. In this study, we have investigated the neuroprotective efficacy of diosmin, a citrus flavonoid against arsenic induced neurotoxicity. The neuroprotective activity of diosmin was preliminarily evaluated in neuro 2A cell line and then the female rat model was selected to carry out in vivo studies. Sodium arsenite was administered at a dose of 13 mg/kg orally as an inducer of neurotoxicity and diosmin was co-administered at doses of 50 and 100 mg/kg of body weight, for 21 days. The behavioral changes were monitored at regular intervals, which revealed arsenic induced suppression of exploratory behavior and motor in-coordination in rats whereas; diosmin co-administration recovered those changes to normal. An induction of oxidative stress was also observed in arsenic treatment which was evaluated by TBARS and antioxidant enzyme levels. Diosmin co-treatment with arsenic has significantly suppressed the oxidative stress generated by arsenic. Interestingly, diosmin also decreased the arsenic levels in the brain and restored the depleted levels of neurotransmitters. The histopathological changes brought by arsenic treatment, including pyknosis of the neuronal cells were subsided upon diosmin supplementation. Immunohistochemistry of brain sections evidenced that arsenic has augmented the expression of NOX 4 and its P47phox and gp91phox subunits. Diosmin treated groups were found to have less expression of NOX 4, P47phox and gp91phox compared to the disease/arsenic control group. The efficacy of diosmin shown in the in vivo studies was in correlation with the in vitro study results conducted on neuro 2A cell line.

Keywords: Arsenic, neurotoxicity, diosmin, NOX 4
Title: A study to evaluate anti-oxidant and anti-inflammatory activity of turmeric and fenugreek in osteoarthritis – a randomized, triple blind, placebo controlled clinical trial

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Abstract:

Background: OA (osteoarthritis) is a major source of disability owing to pain and loss of function. Allopathic medicines provide relief but are associated with a number of side effects. Ayurveda offers “safe and effective treatment alternatives” for OA. Fenugreek have been used in centuries for this disorder with no side effects and good result.

Aims and Objective: To evaluate efficacy of fenugreek in patients of KOA (knee osteoarthritis) using Visual Analogue Scale (VAS) & Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) in placebo group, Fenugreek (FE) group and also to see change in IL-1β marker in blood sample of selected patients, at 0, 60 & 120 days.

Method: Patients were randomised into two groups. After allotment of groups, every patient will receive either placebo 500 mg capsule (glucose) or FE extract 500 mg twice a day daily in form of capsules. Along with this each patient will take Aceclofenac 100 mg twice a day during the treatment. IL-1β ELISA kit which is available commercially was used.

Result: WOMAC scores and IL-1β level are significantly reduced in fenugreek group as compared to placebo at 0, 60 and 120 days. Though effect in FE group is not significant, but better intragroup result is seen as compared to placebo.

Conclusion: Fenugreek is effective in reducing progression and pain of OA, and is better than NSAIDS alone. It doesn’t produce any side effect and hence has better tolerability.

Sub-code-2303

Name- Saurabh Maru

Ref No: hNvDAacx

Title: Control of oncogenic expression of Human Papilloma Virus in cervical cancer cell HeLa by an evidence based tribal medicine

Author Name: Saurabh Maru

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Abstract:

Bryophyllum pinnata is consider to be promising antimicrobial and wound healer in tribal area of Jhabua, M.P. For the treatment of wounds and infection, the paste of the plant is applied locally. Some cases reveled the effectiveness of plant in healing bleeding wounds of reproductive tract of women. It was found to be the wounds like cervical intraepithelial neoplasia (CIN, pre-cancerous development) or cancerous development while discussion
with patients. In current studies, attempt was made to systematically analyze it. The extract was prepared and screened to observe the growth modulation of Human Papilloma Virus (HPV) in HPV-18 transformed cell line, HeLa. The expression of various oncogene in presence and absence of the plant extract were studied. Based on cytotoxicity (MTT assay) and preliminary phytochemical analysis, fractionation was done to afford semi pure fractions. It is further studied for HPV and oncogene inhibitory activity. The IC 50 of crude extract was found at 552 micro liter/ml which was resolved to 91 micro liter/ml by fractionation. The study of molecular events post extract treatment revealed dose dependent inhibition of HPV-18 RNA and expression of transcription factor AP-1. It inhibited DNA binding activity of AP-1 with expression of family proteins of AP-1 i.e. Fos and Jun. In presence of extract, dimerization pattern of AP-1 was modulated. The oncogenic AP-1 dimer developed in to a tumor suppressor transcription factor. To check, if the cause of cell death is apoptosis or necrosis, various molecular markers of apoptosis were analyzed. The expression of markers like Bax, Bcl-2, poly (ADP-ribose) polymerase-1 (PARP-1), caspase-3 were analyzed in time kinetic. The study indicated that Bryophyllum pinnata leaf can inhibit HPV-18 by inhibition of URR directed gene expression.

Sub-code-2304
Ref No: WUBIxXPI
Name- Dr. MOHAMMED ABID ALI
Title- Evaluation of the effect of Neem extract on glycemic control, endothelial dysfunction and biomarkers and platelet-aggregation in subject with type 2 diabetes mellitus.
Author Name: Mohammed Abid Ali
Co-Author Name: Pingali U, Nutalapati C
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Abstract:
Objective: To study the effect of neem-extract(NE) on fasting blood sugar(FBS), postprandial blood sugar(PPBS), glycosylated haemoglobin(HbA1c), HOMA-IR, biomarkers of oxidative-stress, IL-6, TNF-alpha and hsCRP in patients with type-2DM on metformin.

Methodology: In this randomized, double-blind, parallel-group study 94 subjects were enrolled after EC approval and informed-consent. Total 80 eligible subjects were randomized to receive: groupA(Placebo BD), groupB(NE-125mgBD), groupC(NE-250mgBD) and groupD(NE-500mgBD) for 12-weeks as per prior randomization schedule. FBS, PPBS, biomarkers(MDA, NO, GSH, hsCRP), reflection index(RI) were estimated at baseline, and each visit. HOMA-IR, IL-6, and TNF-alpha were evaluated at baseline, 4, and 12-weeks. HbA1c and platelet-aggregation were estimated at baseline and 12-weeks of treatment. Any ADR reported was recorded. Compliance assessed by pill count method. Statistical analysis evaluated using GraphPad-Prism8.

Results: Significant effect on FBS and PPBS was observed at 4(p â‰¥ 0.01), 8, and 12-weeks(p â‰¥ 0.0001) in groupB(NE-125mgBD), groupC(NE-250mgBD) and groupD(NE-500mgBD) compared to baseline. At 12-weeks Groups C and D have shown highly significant effect on
HOMA-IR, HbA1c levels, RI and biomarkers level, however the best response was observed in all parameters with groupD. No effect on platelet-aggregation was seen. All safety haematological and biochemical parameters were within normal limits in all the four treatment groups at baseline and end of the treatment. One patient in groupB(NE-125mgBD) and one in groupD(NE-500mgBD) reported mild GI disturbance, which subsided with symptomatic treatment. None of the subject in either group discontinued the study due to adverse events.

Conclusion: In this study, we observed that neem-extract significantly decreased FBS, PPBS, HOMA-IR, HbA1c and also improved the biomarkers of stress MDA, NO, GSH and endothelial function (improvement in RI) in all groups with maximal response in groupD. Neem-extract showed good efficacy and safety profile. Further studies are warranted to explore the therapeutic potential of neem-extract in diabetics and pre-diabetics.

Sub-code-2305

Name: Dr. G. L. Gupta
Ref No: vpvZ5AU9

Title: Centella asiatica abrogates alcohol abstinence-impelled depression-like behavior by regulating biochemical and GRIN2B gene expression of glutamate receptor signaling in rats

Author Name: Girdhari Lal Gupta

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Abstract:

Centella asiatica Lin. (Apiaceae family) is a perennial creeping herb with enormous medicinal uses and traditionally being used in the management of alcohol use disorders. However, its underlying mechanism of action has not been adequately addressed. Therefore, we evaluated the influences of dried whole plant Centella asiatica ethanolic extract (ECA) in alcohol abstinence-induced depression like behaviour which is evoked subsequent to chronic voluntary alcohol consumption in rats. ECA was first standardized for the existence of asiatic acid (2.2 % w/w), asiaticoside (6.3% w/w), and madecassoside plus asiaticoside B (6.1% w/w) by high-performance liquid chromatography. Acute and sub-acute toxicity studies were also carried out with EOS. Further, healthy Wistar rats were permitted to voluntary drinking of 4.5%, 7.5% and 9% v/v alcohol for fifteen days and influences of ECA were checked in ethanol abstinence syndrome. The behavior studies were conducted by using tail suspension test and forced swim test on post alcohol abstinence days and peak withdrawal depression level was determined. ECA (100, 200, and 500 mg/kg) and standard drug fluoxetine were administered orally during abstinence period. Alcohol biomarkers like ALT, AST, ALP, GGT, and MCV were estimated by using commercially available kits. Serotonin concentrations were measured in the plasma, hippocampus and prefrontal cortex using the rat ELISA kit. The gene expression analysis of GRIN1, GRIN2A, and GRIN2B of N-methyl-D-aspartate receptors (NMDAR) subunits in the hippocampus and the prefrontal cortex were also examined by real time PCR. The results displayed that no-observed-adverse -effect level for ECA in the subacute toxicity study resulted to be 2000 mg/kg, orally. ECA (200 and 500 mg/kg, p.o.) also reversed the
deregulated alcohol markers and serotonin levels following ethanol abstinence in the plasma, hippocampus, and prefrontal cortex. ECA also showed effects in alcohol abstinence-induced depression in both FST and TST. The increased expression of GRIN2B level in ethanol abstinence was only reversed with a higher dose of ECA (500 mg/kg, p.o.) treatment. Thus, the results demonstrate that ECA has notable caring role in ethanol abstinence-induced depression like behaviour by modulating alcohol indicators, serotonin levels, and GRIN2B gene expression of NMDAR signaling in rats.

Sub-code-2306

Name- Dr. Rajkumar Tuslawani

Ref No: w4SIdnQo

Title: Role of Ganoderma lucidum in management of performance loss under hypobaric hypoxia

Author Name: Rajkumar Tuslawani

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Abstract:

Background: Low barometric pressure at high altitude results in loss of performance and absence of target drugs emphasizes need for the development of herbal agents.

Purpose: To study performance enhancing potential of aqueous extract from fruiting body of Ganoderma lucidum against simulated hypobaric hypoxia.

Study design and methods: Rats were exposed to hypobaric hypoxia at 25,000 fts for 7 days with or without extract (0, 25, 50 and 100 mg/kg) and ascorbic acid used as positive control. Post exposure, exhaustion time was examined using rodent tread mill and forced swim test along with hematology and blood gas parameters, bio-energetic, inflammatory markers and oxidative stress. The protein expression studies of hypoxia related markers such as HIF1Î±, Nrf2, VEGF, HO1 and EPO were conducted.

Results: Ganoderma extract significantly delayed exhaustion time in treadmill and forced swim test by 20-30 % and 70-80% under hypobaric hypoxia, respectively. Extract treatment improved redox status (MDA, GSH, NAD/NADH) and prevented bioenergetic losses (ATP, glucose, creatinine, lactate) as well as electrolyte imbalance (Na, K, Cl, iCa). Further, extract prevented surge in pro-inflammatory makers (TNFÎ±, IL6 and NFKÎ®). Moreover, blood gas parameters (pH, pCO2, pO2, BE, HCO3, TCO2, sO2) indicated severely compromised blood homeostasis status in stressed animals that improved with extract treatment. Persistence, extract treatment stabilized HIF1Î± and enhanced Nrf2, VEGF, HO1 and EPO thus indicating overall improvement in oxygen sensing mechanism. Conclusion: Aqueous extract of Ganoderma lucidum prevented physical performance loss under hypobaric hypoxia. The study provide rational for its use to enhance exercise and sports performance along with improvement in physical performance of mountaineers and soldiers posted at adverse environment of high altitude.
Abstract:

Background: The consumption of diets rich in both Fat and carbohydrate is shown to cause weight gain leading to increased adiposity and development of type2diabetes. Basil seed (Ocimum basilicum L.), very often referred as “Functional Food” or “Super Food” is a neglected aromatic herb, more common in Middle Eastern and Asiatic regions and studies have reported that sweet basil oil; sweet basil seed extracts have beneficial effects.

Aims and Objectives: Sweets basil seed consumption modulates the body metabolism may have the effect on Glucose Homeostasis

1. Evaluate the ability of wholegrain Sweets basil seed given in diets on modulation of physical and metabolic profile
2. To study the effect of Sweets basil seed on oxidative stress in diet induced obesity

Method: To mimic the most common form of diabetes, the current study uses a Diet Induced Obese (DIO) rat model to evaluate the effect of whole seed supplementation of sweet basil which is the most common form of basil seed consumption. After the Inducing obesity by 55% HFD, both the control and HFD group animals were supplemented with Basil seed powder in their diet at various percentages. After the obtaining of the IAEC approval experiment was executed.

Result: The WNIN rats were fed with HFD for 12 weeks to induce obesity. The diet induced obese rats showed increased adiposity, fasting glucose, altered lipid profile and oxidative stress (significantly higher TBARS and lower TAC) when compared to controls. High fat diet supplemented with Basil seed did not alter the body weight gain, and fat percentage but improved the lipid profile. Fasting glucose was significantly lower in HFD groups but not in controls supplemented with Basil seed. Basil seed supplementation improved insulin sensitivity of HFD animals.

Conclusion: Basil seed supplementation has not shown an effect on the body weight gain and adiposity, but it has improved the glucose homeostasis and rescued the animals from oxidative stress in diet induced obese WNIN rats.
Title: Anti-rheumatoid activity of sesamin complex in Freund's complete adjuvant induced arthritis in Wistar albino rats.

Author Name: Tanuja Lella

Co-Author Name: Ruckmani. A, T. Sobita Devi

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Abstract:

Objective: To evaluate the anti-rheumatoid activity of Sesamin complex in Freund's Complete Adjuvant (FCA) induced arthritis in Wistar albino rats.

Methodology: A total of 36 female Wistar albino rats weighing 150-200 g were selected and allocated to 6 groups with 6 rats in each. Group 1 served as normal control (NC). The animals in group 2 to 6 were injected with single dose of 0.1 ml of FCA intradermally into the hind paw on day 0. All the animals developed arthritis by day 7. From day 8 to 28, the animals were treated with the following. Group 1 & 2 normal saline 10 ml/kg, Group 3, Diclofenac 25 mg/kg, Group 4, Methotrexate 50 μg/kg/week, Group 5, Sesamin complex (SC) 15 mg/kg and Group 6, SC 30 mg/kg per oral once daily. Body weight, temperature, spontaneous activity and paw volume (PV) were measured once in 7 days for all the groups. ESR, CRP, Hb%, WBC count, RBC count, IL-6 and TNF-α were estimated on day 8 and 28. Radiological and histopathological examination of the ankle joint was done on day 28. All the results were analyzed using One way ANOVA followed by post hoc (Tukey’s) test.

Results: All the animals injected with FCA developed arthritis. Animals treated with SC, diclofenac and methotrexate showed a significant decrease in PV, body temperature, WBC count, ESR, CRP, IL-6 and TNF-α and significant increase in body weight, spontaneous activity, Hb%, RBC count when compared with RA control (P < 0.01). Histopathological and radiological examination showed increase in joint space and reduction in joint swelling in SC treated as well as the groups treated with diclofenac and methotrexate. Both SC 15 mg/kg and 30 mg/kg produced significant anti-inflammatory effect. SC 30 mg/kg produced an effect equivalent to diclofenac and methotrexate.

Conclusion: Sesamin complex has anti-rheumatoid activity. The effect of 30 mg/kg of Sesamin complex was comparable to diclofenac and methotrexate.

Sub-code-2309

Name- Arti Ralta

Ref No: ntUwcR8W

Title: Neuroprotective effect of Celastrus paniculatus seed extract in cognitive deficits rats following pentylenetetrazol induced chronic epilepsy: An in-vivo and in-silico study.

Author Name: Arti Ralta

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Abstract:

Background: Epilepsy is most deliberating neurological disorder of brain affecting one million people worldwide. Cognitive deficits are major comorbidty with epilepsy finding an
herbal medication with effective control over seizure, improving cognition and low adverse effect profile is an unmet need for this field. Therefore, aim of study was to evaluate the neuroprotective effect of Celastrus paniculatus seed extract in cognitive deficits rats following Pentylenetetrazole induced epilepsy.

Methodology: Chronic seizure model was developed with sub-convulsive dose of PTZ 30mg/kg daily administration for 28days or till kindling. The treatment was allocated as following ;vehicle control CMC (0.5%), PTZ control(30mg/kg), sodium valproate (200mg/kg), Celastrus paniculatus (500 mg/Kg) and pergolide (2mg/Kg), pergolide + CP (250mg/kg+1mg/kg) and VPA+CP (100mg/kg+250mg/kg) for 14 days. The parameters, Morris water maze test under ethovision tracking system (XT 11.5), brain SOD, Catalase, GSH and dopamine level, further H&E staining of hippocampal CA1, CA2, CA3, DG and cortex was assessed. The in - silico study was performed to check the viability of in- vivo study and D1R and D2R were selected through PubChem for docking with active constituents of CP taken from PubChem to figure out the binding energy and its susceptibility for dopaminergic receptor in term of cognition and epilepsy.

Results: showed the decrease in seizure score, improved learning and memory at day 42 of treatment. Whereas, brain dopamine level and antioxidant marker SOD, catalase, Reduced glutathione were also increased and ameliorate the seizure induced neuronal loss in hippocampal DG, CA1, CA2, CA3 and cortex assessed by electron microscope. Furthermore, drug docking of the active constituent of CP (malkanguniol) was found lowest and Celastrine B having highest binding energy to D1 and D2 receptor.

Conclusion: Therefore, present study suggested that Celastrus paniculatus may have potential to treat epilepsy associated cognitive deficits by modulation of dopaminergic activity.

Keywords: Cognition; Pentylenetetrazole; D1R; D2R; Celastrus paniculatus; docking.
Code 2400

Sub-code-2401

Name- Farhana Rahman
Ref No: x2ykrXhm

Title: Salt sensitivity gene and its association with hypertension and anti-hypertensive drugs among hypertensive population visiting a tertiary care hospital

Author Name: Farhana Rahman

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Abstract:

Background: Renin angiotensin aldosterone system (RAAS) plays a crucial role in the regulation of sodium excretion and is sensitive to changes in sodium intake. Studies say that dietary sodium is an important contributor to hypertension and salt sensitivity and response to blood pressure is heterogenous to individuals

Objective â€“ (i) to determine the association of I/D polymorphism of the ACE gene in south Indian hypertensive subjects, (ii) to analyse the ACE I/D gene polymorphism and anti-hypertensive drug interaction clinically. A cross-sectional study was done in Sree Balaji Medical College and Hospital, Chennai, Tamilnadu. 32 hypertensive patients (case) who are on anti-hypertensive drugs (calcium channel blocker, amlodipine and angiotensin receptor blocker, telmisartan) and 32 (control) healthy subjects (BP < 140/90 mm of Hg) were recruited for the study. Blood samples were collected from both the groups and DNA was extracted. PCR amplification for the ACE I/D gene was done. Distribution and allelic frequency of Insertion (I) and Deletion (D) polymorphism of the ACE gene were analysed

Results: The distribution of II, DD, ID genotypes of the ACE gene was 50%, 18.7% and 31.2% respectively in hypertensive patients and to 31.2%, 31.2% and 37.5% in controls. The allele frequency for I allele is 0.55 in hypertension patients as compared to 0.50 of control subjects. The genotype and allele frequency of ACE II gene polymorphism has significantly differed in patients when compared to controls. Clinically it was seen that patients with ACE II gene polymorphism respond well with calcium channel blocker, amlodipine.

Conclusion: ACE II polymorphism is associated with hypertension in south Indian population. Calcium channel blocker, amlodipine responds well in patients with ACE II gene polymorphism patients. Most of the hypertensive patients agreed that they take high salt content in their diet.
Title: To study the effect of Cilnidipine on the contraction of isolated caprine detrusor muscle.

Author Name: M.Steffi Aswini Maria

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Abstract:

Background: Cilnidipine is an N/L type calcium blocker, used for the treatment of hypertension. Its effect on causing relaxation on urinary bladder is not yet studied to our knowledge. Since it acts on N/L type channels it is expected to have significant relaxing effect on contraction. If proved they can be used in the treatment of urinary bladder dysfunction.

Aim: To study the effect of Cilnidipine on the contraction of isolated caprine detrusor muscle.

Materials and Methods: The inhibitory effect of three concentrations (20µM, 40µM, 80µM) of cilnidipine on 80 mM KCl-induced contractility of isolated caprine detrusor muscle was studied using studentâ€™s physiograph. The ability of FPL 64176 (L type calcium channel agonist) and GV-58 (N type calcium channel agonist) to reverse the inhibition of cilnidipine on KCl-induced contraction was also studied.

Results: Cilnidipine produced a concentration-dependent inhibition of KCl-induced contraction that was statistically significant for 40µM and 80 µM concentrations of cilnidipine used. The inhibition by cilnidipine on KCl-induced contraction was reversed significantly by both FPL 64176 (L type calcium channel agonist) and GV-58 (N type calcium channel agonist).

Conclusion: Cilnidipine effectively relaxes isolated caprine detrusor muscle by acting on the calcium channels.

Subcode-2403

Name- Pavan Thapak

Ref No: 9cQYOf0L

Title: Elucidation of the role of Transient Receptor Potential M2 Channel in Diabetes-Induced Cognitive Impairment using Pharmacological Approach

Author Name: Pavan Thapak

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Abstract:

Objective: To elucidate the role of transient receptor potential M2 (TRPM2) channel in diabetes-induced cognitive impairment using 2-APB, TRPM2 inhibitor.

Material and methods: Type 1 Diabetes was induced by single dose of streptozotocin (50 mg/kg, i.p.). After 10th week of diabetic induction, cognitive parameters were assessed by using Y-maze, passive avoidance and Morris waster maze (MWM) test. Protein expression of
TRPM2, PSD-95, CaMKII and CREB were measured in hippocampus by the Western blotting. AchE activity was measured in the cortex. 2-APB was administered at 3 and 10 mg/kg, i.p. for the three-weeks and both behavioural and protein expression was measured.

Results: 10th-week diabetic animals showed significant decrease in the cognitive parameter which was assessed by the Y-maze, passive avoidance and MWM task. Moreover, diabetic animals showed increase in the TRPM2 expression in the hippocampus as well as AchE activity was also increased in the cortex of diabetic animals compared with control animals. Three weeks treatment with 2-APB improved the cognitive parameter and downregulated the expression of TRPM2 in the hippocampus compared with diabetic animals. However, it increased the PSD-95, CaMKII and p-CREB (Ser-133) protein expression in the hippocampus.

Conclusion: This study confirms the ameliorative effect of TRPM2 channel inhibitor in the diabetes-induced cognitive deficits. Inhibition of TRPM2 channels reduces the calcium associated downstream signalling and showed neuroprotective effect of TRPM2 channels in diabetes-induced cognitive impairment.

Sub-code-2404

Name- Somesh Agrawal

Ref No: si0n0tvJ

Title: Epigallocatechin-3-gallate Prevents Alcohol-induced Cognitive Deficits by Attenuating Neuroinflammatory Signaling.

Author Name: Somesh Agrawal

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Abstract:

Alcoholic encephalopathy is one of the hallmarks of neuroinflammation which results from chronic and excessive consumption of alcohol. Chronic alcohol intake is known to induce the selective neuronal damage associated with increase oxidative-nitrosative stress and activation of inflammatory cascade finally resulting in neuronal apoptosis and dementia. In the present study, we investigated the protective effect of epigallocatechin-3-gallate (EGCG), a potent natural anti-oxidant against chronic alcohol induced cognitive deficits and neuroinflammatory cascade leading to neuronal apoptosis in adult rat brain. Male Wistar rats were given ethanol (10 g/kg; oral gavage) for ten weeks, and treated with EGCG (25, 50 and 100 mg/kg) for the same duration. Ethanol-exposed rats showed impaired spatial navigation in the Morris water maze test and poor retention in the elevated plus maze task which was coupled with enhanced acetylcholinesterase activity, increased oxidative-nitrosative stress, cytokines (TNF-alpha and IL-1beta), NF-kappa B and caspase -3 levels in both the cortex and hippocampus of ethanol-treated rats. Co -administration with EGCG significantly prevented all the behavioral, biochemical and molecular alterations in the different brain regions of ethanol-treated rats in a dose-dependent manner. Collectively the findings from the current study demonstrates the possible involvement of oxidative-nitrosative stress mediated activation of inflammatory cascade and neuronal apoptosis in chronic alcohol-induced cognitive dysfunction and also
suggests the effectiveness of EGCG in mitigating the cognitive deficits associated with chronic alcohol consumption.

Keywords: Alcohol; Apoptosis; Caspase-3; Dementia; Epigallocatechin -3-gallate; Nuclear Factor kappa Î²; Oxidativeâ€’nitrosative stress; Tumor Necrosis Factor-Î±

**Sub-code-2405**

**Name- Harish Kumar**

**Ref No: 6j1Y5muo**

**Title: Therapeutic role of metformin in preclinical AÎ²(1-42) induced rat models of Alzheimers disease**

**Author Name: Harish Kumar**

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**Abstract:**

**Background:** Alzheimersâ€™s disease progressive is a neurodegenerative disease. Insulin resistance plays an important role in the pathogenesis of AD. Metformin is an insulin sensitizer and is indicated in the treatment of type 2 diabetes mellitus. In this current study, we have evaluated the therapeutic efficacy of metformin and its possible mechanism of action in bilateral ICV AÎ²(1-42) induced rat models of Alzheimerâ€™s disease.

**Methods:** We have used AÎ² (1-42) induced rat model (male) for the mechanistic evaluation. AD was induced by ICV injection of Amyloid beta 10Î¼gm/2Âµl(ICV) using stereotaxic apparatus bilaterally. Animals were divided into 6 groups: Sham, disease control group (model inducing agent only), Metformin (inducing agent + metformin 50mg/kg, 100mg/kg or 150 mg/kg) and positive control (memantine 1.8mg/kg). After 21 days of treatment, animals were subjected to a battery of behavioral tests (EPM, MWM), followed by sacrifice and estimation of amyloid beta, hyperphosphorylated tau, Bax, Bcl2. SPSS (Version 22) was used for analysis of data. â€œpâ‰¤0.05 was considered significant.

**Results:** The disease control group showed significantly (pâ‰¤0.05) higher transfer latency (indicator of spatial memory), higher level of AÎ² (1-42), hyper-phosphorylated tau and Bax expression and lower Bcl-2 expression in the disease control group as compared to sham. Treatment with metformin resulted in improvement in memory (decrease in transfer latency), and protected against alzheimers associated molecular derangements [reduced AÎ² (1-42) level, hyper-phosphorylated tau, Bax expression and increased the Bcl-2 expression in brain] as compared to disease control group. Treatment with memantine improved memory (decrease in transfer latency), reduced the AÎ²(1-42)hyper-phosphorylated tau,Bax expression and increased the Bcl-2 expression when compared to disease control group.

**Conclusion:** In and increased the anti-apoptotic Bcl-2 level in AÎ²(1-42) model of Alzheimerâ€™s disease the current study, metformin has shown favorable therapeutic efficacy in alzheimers disease as evidenced by decreased level of neurotoxic amyloid beta, hyperphosphorylated tau, pro-apoptotic protein Bax.
Title: Calcium homeostasis in skeletal muscle pain: Role of ATP2B1 gene variants

Abstract:

Introduction: The ATP2B1 gene regulates calcium homeostasis in skeletal muscle through ATPase 1 enzyme. Dysregulated calcium levels in the skeletal muscle cell is cited as one of the reason for muscle pain through cell apoptosis. Therefore, this study is aimed to explore the role of SNPs of ATP2B1 gene in skeletal myopathy.

Methodology: 400 normal subjects without any chronic disorders and infections were enrolled after ethical approvals and informed consent. The diagnosis of muscle pain was based on MRC (Medical research council) scale adapted from British council for muscle pain determination and graded using Lafayette manual muscle tester. Blood samples were collected and DNA extraction was carried out using QIAamp DNA Mini and Blood kit. Single nucleotide polymorphisms of ATP2B1 gene (rs17381194) were evaluated by allelic discrimination in real-time PCR using predesigned Taqman probes (Applied biosystems, USA). Statistical analyses were performed using SPSS version 20.0.

Results: Among 400 subjects, 60% were females and 40% were males of age range 35-55 years. 91% of subjects were wild type homozygous (TT), 8% were heterozygous (CT) and 1% were homozygous recessive (CC). Among the allele groups, 29% of wild type homozygous, 42% of heterozygous and 50% of homozygous recessive are myalgic. There is a tendency for recessive allele ATP2B1-C to be risk allele for myalgia. However, the results are not confirmative due to less number of homozygous recessive group (n=4) and p value >0.05.

Conclusion: This study suggests the role of recessive allele ATP2B1-C to be risk allele for myalgia.
Title: Evaluation of effect of Promethazine on seizure activity and its interactions with antiepileptic drugs Sodium Valproate and Lorazepam in rats.

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Affiliation: Department of Pharmacology, Smt. Kashibai Navale Medical College and General Hospital, Narhe, Pune, Maharashtra, India-411041

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Abstract:

Background: Currently used antiepileptic drugs (AEDs) are effective in controlling seizures in about 70% patients but their use is often limited by adverse effects. Promethazine, H1 receptor antagonist, has a controversial status in patients of epilepsy. Both pro and antiepileptic effect has been documented in various animal studies. Hence, this study was designed to see the effect of promethazine, an H1 antihistaminic drug and its interactions with antiepileptic drugs sodium valproate and lorazepam in rats.

Methods: The effect of promethazine (10mg/kg) and its interactions with antiepileptic drugs sodium valproate and lorazepam was assessed by using maximal electroshock seizures (MES) and chemoshock (PTZ) method.

Results: Promethazine along with lorazepam and sodium valproate in subtherapeutic doses exerted significant (p<0.05) protection against MES induced seizures whereas no such protection was observed with PTZ method.

Conclusions: Subtherapeutic doses of Promethazine alone and in combination with lorazepam and sodium valproate showed protection against seizures in MES method.

Keywords: Lorazepam, MES, Pentylenetetrazol, Sodium valproate, Promethazine

Title: Evaluation of fracture healing property of methanolic and aqueous extract of lepidium sativum seeds on charles foster rats

Author Name: Dr. Vinti Dixit

Co-Author Name: 1Dr Kiran Giri,2 Dr Amit Singh
Affiliation: 1, associate Professor , 2 Head of pharmacology dept Institute of Medical Sciences , BHU.

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Abstract:

Introduction: Lepidium sativum, commonly known as garden cress, is known to human civilization from ancient times. It was native to Egypt, but is now cultivated worldwide. The plant belongs to Brassicaceae family. The plant is used as an anti-inflammatory, analgesic, hepatoprotective, prokinetic, fracture healing etc.

Aim of the study: Evaluation of the fracture healing property of methanolic and aqueous extract of Lepidium sativum seeds in Charles foster rats.

Material and methods:The study was conducted as per CPCSEA guidelines, the approval was taken from Animal Ethical Committee vide letter no. Dean/2017/CAEC/249.21Charles foster rats, were divided into three groups for the study-

1. Control group- Received normal saline
2. Methanolic group- Received methanolic extract of the seeds
3. Aqueous group- Received aqueous extract seeds of the with diet throughout the study period.

Methanolic and Aqueous extracts were prepared from the seeds using Maceration and Soxhlet method respectively. Fractures in anaesthetized animals were induced by hand held three- point bending method. The study was carried out for 2 months.

Observations: The results were evaluated both Radiologically and Biochemically.X rays of the bone were done on day 0, 2 weeks and 4 weeks post fracture.

Serum alkaline phosphatases, calcium and phosphorus levels were measured on day 0, 1week, 2week, 4week, 6week and 8weeks post fracture.

Results and conclusions: The callus formation in the methanolic group was significant.

1. For methanolic extract group, significantly higher values of S. Calcium at 4th (9.25±0.2),6th (9.20±0.3),8th (9.40±0.19) and 10th (9.52±0.13) week post fracture.
2. Significant mean values for serum phosphorus with values as 6.30±0.45 in 2nd week, 5.95±0.74 in the 4th week, 5.43±0.42 in the 6th week were found in methanolic group.
3. Mean values of serum ALP observed, were raised with peak values of 185.48±9.82 in the methanolic group.

Sub-code-2503

Name- Trupti Dubey
Ref No: 8MU0BFOR

Title: Evaluating the efficacy of Nigella sativa seed in a validated experimental animal model of RA and its complications

Author Name: Trupti Dubey
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Abstract:

Rheumatoid arthritis is a long-term, progressive, disabling autoimmune disease and the third leading cause of disability among chronic diseases associated with the mortality and morbidity in all age groups. In present scenario RA is an open field for research and numerous advances have been done in management of but none of them find to comply/abide the disease. Failure in designing a set regimen of therapy for treatment of RA can be attributed to numerous factors viz; complex involvement of metabolic, inflammatory and immune factors. Prominent reason of this defeat is flawed preclinical data which fails to bridges the gap between disease pathophysiology and drug discoveries. Present study was designed to develop an experimental model which gives complete insights into etiology, progression, maximum human resemblance and associated long term co-morbid conditions. Further efficacy of Nigella sativa seed was done against Methotrexate0.6mg/kg. Ten experimental models were selected for comparison from different sensitizing agent and test compounds. Here group I received CFA0.1ml, group II received CFA0.1ml+HFD, group III received CFA0.1ml+HFD+LPS 10Âµg/ml, group IV received CFA0.1ml+HFD+LPS 10Âµg/ml +MTX0.6mg/kg, group V received CFA0.1ml+HFD+LPS 10Âµg/ml+ NSAE 200mg/kg (Nigella sativa aqueous extract), group VI received Collagen(CIA) 0.1ml with normal pellet diet, group VII received CIA0.1ml+HFD, group VIII received CIA0.1ml+HFD+LPS10Âµg/ml, group IX received CIA0.1ml+HFD+LPS10Âµg/ml+MTX0.6mg/kg and group X received CIA0.1ml+HFD+LPS10Âµg/ml +NSAE 200mg/kg. Comparison of experimental models with four different inducing agents alone and in combination followed by ELUAR and Rheumatology guidelines validation scoring systems containing three criteria; predictive validity (graded for pharmacological parameters Neutrophil count, CRP, ESR, Anti-CCP, IL-6, TNF-Î±, RF Factor), face validity (graded for core symptoms; Pawvolume, Arthriticscore, Arthriticindex, XRay, histopathology) and constrict validity (graded for disease similarities and human resemblance (Pain, symmetrical secondary lesions, digestion of digits, steatosis, Homocysteine levels and comorbidities). The that CIA0.1ml+HFD+LPS10Âµg/ml induced model closely fit for preclinical events of RA with co-morbid conditions in experimental model and amelioration of Nigella sativa in group V and X suggests its effects in RA alone and in RA with cardiovascular progression.

Sub-code-2504

Name- Lokesh Kumar Bhatt

Ref No: x7TvmsfY

Title: Antiarrhythmic activity of combination of Polymyxin B and Dantrolene in rats via dual inhibition of Ryanodine receptor and Calmodulin

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Abstract:
Present study investigated antiarrhythmic activity of combination of Ryanodine receptor antagonist Dantrolene sodium and calmodulin antagonist Polymyxin B in CaCl2 induced arrhythmia in rats. Arrhythmia was induced by intravenous infusion of CaCl2 (90 mg/kg) in wistar rats. Lead II electrocardiogram was monitored. Calcium, sodium and potassium levels in blood and CaMKII enzyme levels in heart homogenate were measured. Arrhythmia score was evaluated for 30 minutes duration after CaCl2 administration to assess the severity of arrhythmia. Negative control group showed severe arrhythmia with presence of ectopic beats, flutters and ventricular fibrillations. In addition, elevated CaMKII enzyme level were observed in negative control group. In blood analysis, calcium and sodium levels found to be increased with decrease in potassium levels in negative control group. Treatment with combination of Dantrolene and Polymyxin B attenuated incidences of ectopic beats, flutter, ventricular fibrillation, total arrhythmia duration, arrhythmia score significantly compared to negative control group. Further combination of Dantrolene and Polymyxin B decreased Calcium and sodium levels with increased potassium levels and CaMKII level significantly compared to negative control. Efficacy of combination was better than per se treatment. In conclusion, results of this study suggest potential of Dantrolene and Polymyxin B combination in the treatment of arrhythmia.

Sub-code-2505

Name- Dr. Sameer H. Sawant

Ref No: 2QdVYIii

Title: Study Of 18 β-Glycyrrhetinic Acid Obtained from Liquorice Roots for The Prevention of Progression of Diabetes Induced Neuropathy and Cardiomyopathy in Laboratory Animals

Author Name: Dr. Sameer H. Sawant

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Abstract:

The study was designed to evaluate the protective effect of 18β-Glycyrrhetinic acid in diabetes-induced neuropathy and cardiomyopathy in laboratory animals. Diabetes was induced in male Wistar rats (200-260 g) by streptozotocin (55 mg/kg intraperitoneally) injected 15 min after nicotinamide (110 mg/kg, intraperitoneally). Rats were divided into the following groups-normal control, diabetic control, pregabalin (10 mg/kg) and 18β-Glycyrrhetinic acid (50, 100 and 200 mg/kg). The rats were allowed to develop diabetic neuropathy and cardiomyopathy for four weeks. Diabetic rats showed an increase of plasma glucose and glycosylated hemoglobin (HbA1c) and a decrease in tail withdrawal latency and paw withdrawal threshold. Modification of electrocardiographic parameters and reduction in systolic, diastolic and mean arterial blood pressure were also observed. Furthermore, lipid profile, hepatic markers, serum cardiac markers, antioxidant status, and histological abnormalities were altered. Oral administration of 18β-Glycyrrhetinic acid for the next four weeks prevented the above changes and decreased the severity of diabetic neuropathy and cardiomyopathy. 18β-Glycyrrhetinic acid (100 and 200μg%mg/kg) showed significant (p< 0.01, p < 0.001) anti-neuropathic activity by increasing the tail withdrawal latency and paw withdrawal threshold. 18β-Glycyrrhetinic acid at
200 mg/kg of body weight showed the anti-neuropathic potential that is comparable with pregabalin (10 mg/kg). Results also showed that 18β-Glycyrrhetinic acid (100 and 200 mg/kg) significantly prevented diabetic cardiomyopathy in rats. A low dose of 18β-Glycyrrhetinic acid (50 mg/kg) was not enough to show the protective action against diabetic complications. It is suggested that 18β-Glycyrrhetinic acid prevents the progression of diabetes-induced neuropathy and cardiomyopathy in rats.

Sub-code- 2506

Name- T Ramasamy

Ref No: OEna17fm

Title: Vitamin D improves the in-vitro antibacterial effect of ampicillin against resistant Staphylococcus spp and E.coli isolated from bovine mastitis

Author Name: T Ramasamy

Co-Author Name: Sriraam Sankar1, Sriram Padmanaban1, Porteen Kannan2, Srinivasan M R1, Arunaman C S4

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Abstract:

The colossal rise in antimicrobial resistance has led to treatment failures and so mastitis has become cumbersome to treat. The objective of this study was to evaluate the antibacterial effect of non-antibiotic drug, vitamin D in combination with antimicrobial, ampicillin against two commonly isolated bacterial species Staphylococcus spp and E. coli from bovine mastitis. Milk samples were collected from mastitis cows, visiting Veterinary Clinical Complex. Bacterial isolation was performed using Eosin Methylene Blue (EMB) agar and Mannitol Salt Agar (MSA), followed by characterization and identification by biochemical tests and gram staining. Genotypic confirmation was done by Polymerase Chain Reaction (PCR) with subsequent screening for resistant genes- mec A, blaTEM. Antibiotic Sensitivity Test (ABST) of the isolates against 12 different antimicrobials, vitamin D only, and combination of vitamin D with ampicillin were performed using Kirby-Bauer disc diffusion method. Minimum Inhibitory Concentration (MIC) of ampicillin alone and ampicillin in combination with vitamin D were determined by modified microdilution method. Staphylococcus spp (77.5%) and E. coli (35%) were the two major pathogens isolated in the current study and multi-drug resistance was observed. Among the antimicrobials, the ampicillin showed 100% resistance against Staphylococcus spp and 85.71% resistance against E. coli. Vitamin D did not display antibacterial effect as a sole agent but displayed synergistic antibacterial activity with ampicillin. There was an average increase in Minimum Inhibitory Concentration of ampicillin alone and ampicillin in combination with vitamin D were determined by modified microdilution method. Staphylococcus spp (77.5%) and E. coli (35%) were the two major pathogens isolated in the current study and multi-drug resistance was observed. Among the antimicrobials, the ampicillin showed 100% resistance against Staphylococcus spp and 85.71% resistance against E. coli. Vitamin D did not display antibacterial effect as a sole agent but displayed synergistic antibacterial activity with ampicillin. There was an average increase in Minimum Inhibitory Concentration of ampicillin for E.coli and Staphylococcus spp isolates and vitamin D decreased the Minimum Inhibitory Concentration of ampicillin in combination. The ampicillin shows more resistance against both Staphylococcus spp and E.coli, while vitamin D improves the effect of ampicillin in-vitro. However, further studies are required to ascertain the exact mechanism of action of vitamin D with respect to their antibacterial effect for them to be redeployed as an antimicrobial drug in the future.
Title: Protective effect of resveratrol in the high fat diet and low dose of streptozotocin induced cognitive impairments in the albino rats

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Abstract:

Various studies indicated that type 2 diabetes mellitus (T2DM) is accelerating the aging process and play an important risk factor in the age-related disorders like Alzheimerâ€™s disease (AD). Different preclinical studies indicated that high fat diet induced animal model, impair the insulin signaling, responsible for the impaired cognitive function. A therapeutic treatment that rescues the cognitive impairments in T2DM cases has not yet been investigated.

In the present study, we investigated the role of resveratrol (RSV) in the cognitive impairments in T2DM animal models. Sprague- Dawley albino rats (12-14 weeks, 180-200 g.) were fed with the 60 % HFD for the 18 weeks, and animals were injected once at week 6 with a low dose of streptozotocin (45 mg/kg, i.p, dissolved in the 0.1 M citrate buffer of pH 4.5). After 14 weeks animals were divided into the different treatments group (n=6). Animals of normal group administered with the vehicle, HFD group fed with 60% kcal fat diet, standard group (HFD + metformin, 200 mg/kg, i.p) treated with metformin, and treatment group administered with the two dose level of RSV (HFD + RSV1, 50 mg/kg and HFD + RSV2, 100 mg/kg, i.p, respectively) for 4 weeks. During the experimental protocol blood glucose level was checked weekly, and behavior study related to the learning and memory (elevated plus maze, novel object recognition, and morris water maze test) were performed before sacrificing the animals. After completion of the protocol various biochemical parameters like serum total cholesterol, TG, LDL, HDL, and oxidative stress markers (SOD and GSH, CAT and GPx both in brain and serum) were checked.

Results indicated that RSV at the high dose remarkably recover the impaired insulin resistance and treat the cognitive impairments in the T2DM animals. From the present study, it was concluded that RSV might have a potential pharmacological treatment for the cognitive impairments and associated dementia in the presence of diabetes.

Key words: Diabetes, resveratrol, cognition, oxidative stress, Alzheimerâ€™s disease.
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Category: 51st Annual Conference of IPS Oral Presentation

Abstract:

Objectives: To evaluate antitumor activity of ethanolic leaves extract of Moringa oleifera Lam (ELMO), in Ehrlich Ascites Carcinoma (EAC) Bearing Mice. Materials and methods: After obtaining ethical clearance from IAEC, male albino mice were taken randomly into four groups i.e., Normal (Non EAC induced), Control (3x10^6 EAC tumor cells were injected i.p. into healthy mice), Protective –ELMO (500mg/kg) were treated for a period of 15 days, first 4 days in normal mice, on the 5thday EAC tumor cells were injected i.p. Curative - EAC tumor cells were injected on first day, for a period of 4 days we are not given any treatment , on the 5th day onwards ELMO (500mg/kg) were treated for a period of 15 days. All animals were scarificed, collected livers and performed histopathalogical study. Results: On histopathological study shown, Normal group blood vessels, nucleuses are normal. Hepatocytes are radiating outward from a central vein in the center. Control group cellular inflammatory infiltration, congestion in blood vessels, hyperchromatine, and nuclear hypertrophy, debris in the central Vein, hemorrhage and wide sinusoids. Protective group Normal array of the hepatic cords radiating from the central vein, there is no appearance of cellular inflammatory infiltration ,the cytoplasm is intact with normal eosinophilia and the nuclei is similar to control ones with usual chromatinophilia. Curative group cytoplasmic degeneration has been reduced, mild cellular inflammatory infiltration and the nuclei of hepatic cells are better. Conclusion: Ethanolic leaves extract of Moringa oleifera shown antitumor activity on Protective and Curative group animals, when we compare with Control group protective group is having more antitumor activity than curative group it is almost similar to normal group. Present study shown anti tumor activity of ethanolic leaves extract of Moringa oleifera in EAC bearing mice but further experimental studies and clinical trials are required to confirm its antitumor activity.

Sub-code-2509

Ref No: BXiPhlXN

Title: Evaluation of Antibacterial Potential of Centaurea Behen Plant Against Mdr Bacterial Strains: Remedy to Combat Microbial Resistance

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Abstract:

Natural herbal flora has been a source of protective force for thousands of years. Natural products play an important role today for many pharmaceuticals and modern medicine. Natural herbal/medicinal agents have been tried remarkbly in concern of renewed global interest to find the novel lead molecules which are free from side effects. It is a common belief that natural/herbal medicines are safer than the synthetic pharmaceutical drugs which are toxic and possess several adverse effects. According to WHO report, 70-80% of the
worldâ€™s population rely on non-conventional medicine mainly from herbal sources in their primary health care. Moreover, the use of herbal drugs is increasing day-by-day. The chemotherapy of the infectious diseases has been proved to be a continuous struggle for many years and the control of various diseases was confined to symptomatic cure which included personal hygiene, isolation of patient and good health. Therefore, it is necessary to establish the scientific basis for the therapeutic uses of traditional natural herbal/plant products. Thus, in an attempt to find and evaluate the antimicrobial potential of medicinal plants/herbs to fight against infectious diseases, evaluation of antibacterial activity of traditional medicinal plant/herb Centaurea behen against very strong MDR strains(obtained from tertiary care hospital lab) of four different bacteria Klebsiella pneumoniae, Acinetobacter baumannii, Staphylococcus aureus and Enterococcus faecalis has recently been carried out in the present study. Remarkable findings were recorded in terms of antimicrobial(antibacterial) activity and MIC of the herbal plant extracts under study. It has confirmed from the research data that this traditional medicinal/herbal plant has great antimicrobial potential against the MDR bacterial strains( which were in general resistant to many classes of antibiotics). Therefore, it is necessary to establish the scientific basis for other therapeutic uses of traditional plant/herbal products which will in turn help to improve the health care system in the world.

Sub-code-2510

Ref No: L57xSuVy

Title: Evaluation of bronchodilator activity of aqueous extract of flower bud of Syzygium Aromaticum L. in histamine induced bronchospasm in Guinea pigs.

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Abstract:

Introduction: 300 million are affected by asthma worldwide with increased prevalence in developing countries. Asthmatics use herbal therapies to manage asthma, often without proven efficacy or mechanisms of action. So, evaluation of therapeutic basis of such herbs became important. Syzygium aromaticum L. has antibacterial, antispasmodic and carminative action. Flower bud contains essential oil, eugenol as an active ingredient.

Objective: To evaluate bronchodilator activity of Aqueous Extract of Flower bud of Syzygium aromaticum L. in Histamine Induced Bronchospasm in Guinea pigs by means of pre-convulsion time and percentage protection.

Methods: 36 Guinea pigs were randomly divided into 6 groups.

1) Normal Control: Distilled water orally, 14 days.
2) Active Control: 1.55 Âµg/kg Formoterol + 0.02 mg/kg Budesonide Inhalation, 14 days.
3) High Dose Extract: 306 mg/kg (Clove) orally,14 days.
4) Low Dose Extract: 153 mg/kg (Clove) orally,14 days.
5) High Dose Extract + Active control: 306 mg/kg (Clove) orally + 1.55 µg/kg Formoterol and 0.02 mg/kg Budesonide Inhalation, 14 days.

6) Low Dose Extract + Active control: 153 mg/kg (Clove) orally + 1.55 µg/kg Formoterol and 0.02 mg/kg Budesonide Inhalation, 14 days.

Pre-convulsion time was noted, after administration of 0.5 % Histamine aerosol, in Histamine Chamber on Day 0 and Day 14,

Percentage protection = \( \frac{T2 - T1}{T2} \times 100 \)

\( T1; T2 = \) mean (pre; post)-convulsion time (before; after) administration of test drugs.

Results: Statistically significant improvement in pre-convulsion time and percentage protection in Active Control (\( p < 0.001 \)), Low dose Extract (\( p < 0.01 \)) and High dose Extract (\( p < 0.001 \)), Low dose Extract + Formoterol and budesonide control (\( p < 0.01 \)) and High dose Extract+ Formoterol and budesonide control (\( p < 0.001 \)) as compared to normal control group.

Conclusion: Aqueous extract of Syzygium aromaticum L. shows significant protection with the promising result as a potential bronchodilator.

Sub-Code-2511

Ref No: sVO9NK7B

Title: Pharmacodynamic and pharmacokinetic interactions of hydroalcoholic leaf extract Centella asiatica with valproate and phenytoin in experimental models of epilepsy in rats

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Abstract:

Objective: Centella asiatica, a commonly used herbal medicine for epilepsy and reported to exhibit anticonvulsant effect and CYP enzymes inhibition property. So, the present study was aimed to evaluate interactions of hydroalcoholic extract Centella asiatica (HECA) with antiepileptic drugs in experimental models of epilepsy in rats.

Materials & Methods: Wistar rats (175 -200 g) were used. In the pharmacodynamic interaction study, seizures were induced using pentylenetetrazole (PTZ) and maximal-electroshock (MES). The therapeutic and sub-therapeutic doses of valproate (VPA) and phenytoin (PHT) were co-
administrated with HECA in PTZ and MES model of seizures respectively. Behavioral parameters were assessed using elevated plus maze test and passive avoidance paradigm. Rat brain oxidative stress parameters were also assessed. In the pharmacokinetic interaction study, the serum levels of the VPA and PHT were estimated at different time intervals by HPLC and pharmacokinetics parameters were analyzed by WinNonlin software.

Result: The VPA and PHT produced complete protection against seizures in their therapeutic doses but not with sub-therapeutic doses. However, co-administration of HECA with sub-therapeutic dose of VPA and PHT enhanced the percentage protection of seizures by 60% and significantly (p<0.001) attenuated the seizure induced oxidative stress and cognitive impairment. The serum levels of VPA and PHT were significantly (p<0.001) increased with co-administration of HECA. Alteration in pharmacokinetic parameters (Cmax, AUC, Cl) were also found with co-administration.

Conclusion: The results suggest that co-administration of HECA could improve the effectiveness of VPA and PHT due to the increased bioavailability of the latter. However, this also needs critical medical supervision to avoid any toxic reactions.

Key words: Centella asiatica, phenytoin, valproate, seizures

Sub-Code-2512
Ref No: c0IZUP2H
Title: Preclinical evaluation of anxiolytic activity of Adhatoda Vasica Methanolic leaf extract in Swiss Albino mice.
Author Name: Kumar Gourav
Co-Author Name: Dr Prabhakar Adake , Dr Nagapati P Bhat, Roopa P Nayak
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Abstract:
Objectives: To evaluate the possible anxiolytic activity of Adhatoda vasica methanolic leaf extract (AVMLE) in Swiss albino mice.

Methods: A total of 60 mice were used in the study. They were divided into 10 groups of 6 mice in each. The dose of 200, 400 and 600 mg/kg AVMLE were chosen after acute toxicity study. First 5 groups of mice were evaluated by Elevated Plus Maze (EPM) and rest 5 groups were evaluated by Light and Dark Arena (LDA) model. First group of mice (control) received 0.05ml/10g of Normal Saline, second group (standard) received 1.0 mg/kg Diazepam, third, fourth and fifth group received 200, 400 and 600 mg/kg of AVMLE p.o. respectively. Anti anxiety effect was evaluated 60 minutes after the oral drug administration.

Results: One-way ANOVA followed by Tukey- Kramer multiple comparison tests were used to compare between groups. All the results were expressed in mean Â± SD. In LDA, the numbers of entries in dark compartment were 12.17±1.47, 13.17±2.92, 12.33±3.01, 7.17±1.94 and 10.50±3.08 respectively for Normal saline, Diazepam, 200, 400 and 600 mg/kg of AVMLE. This result clearly showed that AVMLE of 400 mg has anxiolytic property as evidenced by decrease in the number of entries in dark compartment in LDA model when compared to control and standard groups (p <0.05). In EPM, AVMLE showed
increase in the time spent in open arm and decrease in the time spent in closed arm, as well as increase in the number of entries in the open arm but it was not statistically significant (p >0.05) when compared to control and standard groups.

Conclusion: The current study has demonstrated an anxiolytic effect of AVMLE at the dose of 400mg/kg in LDA model.

Keywords: Adhatoda vasica methanolic leaf extract, Elevated Plus Maze, Light and Dark Arena

Sub-Code-2513

Ref No: qvrnAHCN

Title: Evaluating the role of REM sleep deprivation in inducing neuroinflammatory response, behavioural cognitive dysfunction and oxidative stress in chronic insomniac rat model

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Category: 51st Annual Conference of IPS Orations - Col. Ram Nath Chopra

Abstract:

Objectives: To establish a strong association between chronic insomnia leading to neuro inflammation, oxidative stress and cognition dysfunction using REM sleep deprivation model.

Methods: A total 18 rats were divided into 3 groups (n=6), treated with control, REM sleep deprived and aspirin. Except the control Gr I, REM sleep deprivation was induced in Gr. II and III daily for 30 days. Oxidative stress was evaluated by measuring reduced glutathione and malondialdehyde levels. All the rats were subjected to Morris water maze (MWM) to test the navigation memory dysfunction after 30 days of chronic insomnia. Results were analyzed by One way Anova followed by post hoc Tukey’s test. The rat brain samples were used to correlate with neuro inflammatory response and cognitive dysfunction by relative mRNA genes coding for inflammasome complex (NLRP3, Caspase 1 and IL-1β). Gradient PCR was carried out for target genes encoding NLRP3 inflammasome complex. Semiquantitative analysis was done using, Graph Pad Prism software v7.1 and one-way ANOVA.

Results: In MWM, REM sleep deprived rats treated with aspirin showed least latency time reaching the target quadrant and maximum time spent in probe quadrant (P<0.05) Vs sleep deprivation rats. Paradoxically, aspirin treated rats showed increased mRNA expression for NLRP3 gene (p<0.001). In contrast, the mRNA expression for caspase 1 and IL-1β were significantly lower (P<0.05) versus control and sleep deprived rats. The reference gene, GAPDH was stably expressed across all conditions in the chronic sleep deprivation. REM sleep deprivation rats showed significant increase in oxidative stress by increasing MDA and decreasing glutathione plasma levels (P<0.05).

Conclusion: We demonstrated that NLRP3 inflammasome complex is associated with the inflammatory process in chronic sleep deprivation and cognition. Blockade of prostaglandin synthesis probably results in reinforcement of NLRP3 inflammasome dependent
inflammation. Aspirin showed potent cognitive-enhancing ability which may be attributed to its anti-inflammatory and antioxidant activities.

Key words: REM sleep deprivation, Oxidative stress, Aspirin, NLRP3 inflammasome complex

Sub-Code-2514

Ref No: ajN4KlcE

Title: The effect of ethological approach in assessment of pharmacological validation of animal model for anxiety disorders based on predator encounter.

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Abstract:

The experiment was designed to develop a predator based animal model for anxiety disorders. In first experiment, the burrows formed by laboratory rodents were compared with wild rats. It was observed that identical burrows were made by both. The wild rat burrow architecture depends upon the soil, vegetation, duration of stay and their size usually in the range of 2-3 inch with multiple entrances and exit. The laboratory rats, if reared in cages satisfying their ethological requirements, like appropriate bedding material, also constructed burrows with same pattern and in same range as like wild rats. In the second experiment, the rats that formed burrows (experiment-1) were chosen and in them, anxiety -like state was induced by predator encounter using live cat for a period of 5 minutes followed by re -exposure to the same place of predator encounter with audio of recorded cat sound, on the day of experiment, to reinforce the contextual cue and their subsequent behaviour was studied in open enclosed maze for a period of 5 minutes. It was observed the behavioural pattern displayed by the cat encountered rats was identical to wild rats. In the newly developed model for anxiety induction based on predator encounter, different drugs of benzodiazepine and non-benzodiazepines (Control, induced anxiety, alprazolam, diazepam, clonazepam, chlordiazepoxide, buspirone, fluoxetine, escitalopram, and propranolol) were given to analyze the anxiolytic and panicolytic effect. The different behavioural pattern and the locomotory measures (including transits, rearing, freezing, and risk assessment patterns) were analyzed for different drug treatments and the results revealed that the newly developed anxiety animal model not only gives results for both benzodiazepine and the non-benzodiazepines but also differentiates the panicolytic action of benzodiazepines with the anxiolytic action of non-benzodiazepine. In conclusion, rearing environment of lab rats, if identical to wild rats, modulates the behavioural response in open enclosed maze induced by live predator and enhance the predictive validity.

Sub-Code-2515

Ref No: vMya6HV9

Title: Role of NLRP3 inflammasome complex genes in neuroinflammatory response and cognitive dysfunction in REM sleep deprived rats

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Abstract:

Objectives: To investigate the role and association of NACHT, LRR, and PYD domains containing protein3 (NLRP3) inflammasome complex coding genes as neuroinflammatory response in acute insomnia with cognitive dysfunction using REM (rapid eye movement) sleep deprivation model in Wistar rats.

Methods: The rat brain samples (control, test and Aspirin group) were used for the molecular analysis of the inflammatory pathway involved in sleep deprived rats. The rats underwent REM sleep control and REM sleep deprivation for 7 days followed by cognition evaluation studies namely Morris water maze (MWM). Oxidative stress was evaluated by measuring reduced glutathione and malondialdehyde levels. Results were analyzed by ANOVA followed by post hoc Tukey’s test. Total RNA extracted from prepared brain samples. The purity and integrity of extracted total RNA was checked for expression of NLRP3 gene, Caspase 1 and IL-1β (Interleukin-1 beta). Gradient PCR (polymerase chain reaction) was carried out for target genes encoding NLRP3 inflammasome complex. Semiquantitative analysis was done using Graph Pad Prism software v7.1 and one-way ANOVA.

Results: Neurological improvements were assessed using MWM. mRNA expression for NLRP3 gene in aspirin treated rats with acute sleep deprivation was observed to be significantly (p<0.001) higher compared to control and sleep deprived rats. In contrast, the mRNA expression for Caspase 1 and IL-1β was significantly lower. The reference gene, GAPDH was stably expressed across all conditions in the acute sleep deprivation. Increase in oxidative stress following REM sleep deprivation was observed.

Conclusion: As per our knowledge we demonstrated for the first time that NLRP3 inflammasome complex is associated with the inflammatory process in acute sleep deprivation and cognition. Moreover, blockade of prostaglandin synthesis pathway probably results in reinforcement of NLRP3 inflammasome complex dependent inflammation that might affect cognition after acute sleep deprivation. Aspirin also improved cognition which may be attributed to its antioxidant properties.

Key words: sleep deprivation, Oxidative stress, Aspirin, inflammasome

Ref no- 4MWqo9bl

Title: Study of analgesic effect of Centella asiatica in experimentally induced pain models in Swiss albino mice.

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Co-Author: Dr. N.P. Burte (MD), professor & HOD of pharmacology, M.N.R Medical college

Affiliation: M.N.R Medical College, Department of Pharmacology,
Abstract:

**Introduction:** Centella asiatica is a Medicinal herb mostly found in all the parts of India. It is also known as saraswati, Indian pennywort and gotu kola of the family Umbelliferae. It is believed to have beneficial effects in improving memory & healing mental fatigue, anxiety and eczema. Ayurvedic medicine has effectively used Centella asiatica in the treatment of inflammation, anemia, asthma, blood disorders, bronchitis fever and splenomegaly. The aqueous extract of Centella asiatica possesses antioxidant, cognitive enhancing and anti-epileptic properties. The other folk medicinal uses are for headache, hypertension, rheumatism, tuberculosis and as a diuretic.

In view of this the present study was conducted to evaluate analgesic properties of aqueous extract of Centella asiatica in experimentally induced pain models in Swiss albino mice.

**Materials & Methods:** Experimental animals of Swiss albino mice of either sex (6-18 weeks old) and weighing around 20-25 gms were procured from disease free animal house, M.N.R. Medical College, Nagareddy, Telangana India. The animals had free access to food and water and were housed in an animal room with alternate light dark cycle for 12 hrs each. The institutional animal ethics committee approved the experimental protocol.

Mice were individually removed from home cage and acclimatized for 1hr to the testing room. Drugs that are used for testing are pentazocine, Diclofenac sodium and centella asiatica is obtained from Chemiloids, Vijayawada and all the drugs were dissolved in normal saline.

The experiment was carried out by using four screening methods –

1. Eddy’s hot plate
2. Radiant heat method
3. Tail clip Method
4. Acetic acid induced writhing.

In each screening method, there are 6 groups. Each group is having 6 Swiss albino mice. Route of drug administration is Intraperitoneal.

**Group 1 – Control** - Normal saline (100ml/kg)
**Group 2 – Standard** - pentazocine (10mg/kg) - Eddys hot plate, Radiant heat and tail clip method

Diclofenac sodium (5mg/kg) – acetic acid induced writhing

**Group 3 – Test** - Aqueous extract of centella asiatica (10mg/kg)
**Group 4 – Test** - Aqueous extract of centella asiatica (30mg/kg)
**Group 5 – Test** - Aqueous extract of centella asiatica (100mg/kg)
**Group 6 – Test** - Aqueous extract of centella asiatica (300mg/kg)

**Eddy hot Plate method:** It is a hot surface of metal (10*10) heated electrically to maintain a temperature of about 55c (preferably 55c +_0.1c) and covered from all the sides by perplex material. Swiss Albino mice are gently placed on the hot plate and time required to lick the hind paw is noted. The cut off time is 20sec to avoid damage to the nerve endings of the paw. i.e the experiment is terminated at 20 seconds and analgesia is considered as 100%.
The discomfort reaction of the animals (licking paws or jumping) was recorded at 30, 60, 120 and 150 min after administration of extract (10, 30, 100 and 300 mg/kg).

**Radiant heat method**: Swiss Albino mice are placed in a mouse holder, leaving the tail exposed. In radiant heat method, a nichrome wire is surrounded by water jacket is heated electrically. The tail of the animal is placed on the platform and time required to flick the tail is noted. The cut off time is 30 sec. The discomfort reaction of the animals (flicking of the tail) was recorded at 30, 60, 120 and 150 min after administration of extract (10, 30, 100 and 300 mg/kg).

**Tail clip method**: A bull dog clamp is applied 2 cm away from the base of the tail of the mouse to apply noxious stimulus. A quick attempt is made by the animal to remove the clamp applied to the tail. The time between application of the clamp and an attempt to remove the clamp (reaction time) is noted. The experiment is stopped at 30 sec to avoid damage to the tail. The discomfort reaction of the animals was recorded at 30, 60, 120 and 150 min after administration of extract (10, 30, 100 and 300 mg/kg).

**Acetic acid Induced writhing**: Acetic acid injection was injected intraperitoneal and contraction of abdominal muscles together with stretching of hind limbs were counted over a period of 30 min beginning 5 min after acetic acid injection. The extract was administered (10, 30, 100 and 300 mg/kg).

**Statistical analysis**: Results are expressed as mean +/- SEM. One way analysis of variance was used for statistical comparison, p<0.05 being criteria for statistically significant.

**Result**: This result suggest that the intra peritoneal injection of aqueous extract of *Centella asiatica* is showed significant increase in analgesic activity showing maximum analgesia at 300 mg/kg.

Aqueous extract of *Centella asiatica* (300 mg/kg) showed maximum increase in analgesic effect in our study but with the same dose contact dermatitis developed in 8 out of 12 mice at the end of 14 days of our study. However other doses (10, 30 and 100 mg/kg of CA) contact dermatitis is not observed.

**Sub-Code-2517**

**Ref No**: yHwbMteW

**Title**: Effect of animal strain on imiquimod-induced psoriasis disease

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**Abstract**:

Psoriasis is auto immune, inflammatory disease characterized by hyperproliferation of epidermal keratinocytes. Due to the complexity of the disease and the non-availability of the animal model that mimics clinical scenario makes the development of new drugs more difficult. Currently Imiquimod (IMQ) - induced psoriasis model is a widely used preclinical tool for psoriasis research. However, this model is sensitive to the genetic variation of mice. The present study explores the effect of animal strain on disease stability and severity. We have used three distinct strains of mice (C57BL/6, BALB/c, and Swiss albino). The dorsal skin of the mice was depilated...
two days before the application of drugs. The animals were divided into four different groups – a) Petroleum jelly b) IMQ c) IMQ + Cloetasol d) IMQ + Curcumin. The disease severity was evaluated by measuring PASI score, % change in body weight, and histopathology. Changes in the spleen index and spleen size reflects the systemic effect of IMQ. Further, measuring the activity of SOD, catalase, and levels of GSH, the role of oxidative stress was investigated. Increased PASI score, decreased body weight and histopathological changes confirmed disease development in all the strains of mice. These changes were more severe in the Swiss model as compared to the C57BL/6 and BALB/C model. IMQ + curcumin treatment to the mice showed another increment in splenomegaly in C57BL/6 mice compare to Swiss and BALB/C mice, indicating the systemic effect of IMQ and Curcumin. Alteration in the activity of SOD, catalase, and levels of GSH further confirms the involvement of redox status. Our results demonstrate the strain-dependent effect on the development of the disease and its severity. Comparatively, the Swiss mice model is better and more stable than the C57BL/6 and BALB/C model. However, the detailed mechanistic study may be essential to conclude it further.

Sub-Code-2518

RefNo: 6N2watIR

Title: NEUROPROTECTIVE EFFECT OF DEXTROMETHORPHAN IN VALPROIC ACID INDUCED EXPERIMENTAL MODEL OF AUTISM SPECTRUM DISORDER (ASD) IN RATS

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Abstract:

**Introduction** Autism is a heterogeneous neurodevelopmental and neurobehavioral disorder of unknown etiology which manifests difficulties in social interaction, communication and behavioral deficits like stereotypy and repetitive behavior. Increasing evidence indicates that dysfunction of NMDA receptors (NMDARs) at excitatory synapses is associated with ASDs. In support of this, human ASD-associated genetic variations are found in genes encoding NMDAR subunit Dextromethorphan hydrobromide is an NMDA receptor antagonist and acts as a non competitor channel blocker. Literature suggest that DM modulates glutamate signaling by acting as an uncompetitive NMDA receptor antagonist. Based on previous literature glutamate and GABA-related abnormalities are found in the autistic brain. The present study is designed to investigate the role dextromethorphan in VPA induced autistic rat.

**Method** Animals were divided into six groups. Group 1 [Control, received only Normal saline 0.9%], Group 2 [VPA 600mg/kg on PND (Post natal day)12.5], Group 3 [Pups, Risperidone 2.5 mg/kg, PND 23 to 43] and group 4-6 [Dextromethorphan 10, 15, 30 mg/kg PND 23 to 43]. All the groups were subjected to different behaviour [Three chamber sociability test, Morris water maze], histopathology [0.1% H&E, Cresyl violet] and expression of NMDAR by immunohistochemistry (IHC) in different brain regions.
**Result** Significant improvement in the behavioral parameters were seen at 30 mg/kg dose of dextromethorphan. Histopathological scores was found to be significantly improved in dextromethorphan group [30mg/kg] in comparison to the VPA group. IHC staining of brain sections indicated the dextromethorphan treated rats exhibited significantly higher expression of NMDAR in prefrontal cortex and hippocampus.

**Conclusion** It has been concluded that dextromethorphan, a NMDAR antagonist has attenuated prenatal valproic acid-induced developmental, behavioural and histopathological processes related to autism symptoms in rats. However, further research should be directed to explore the full therapeutic potential of this drug.

**Key words:** Autism, Valproic acid, Dextromethorphan, NMDAR

**Sub-Code-2519**

**Ref No:** vRegoqF5

**Title: Potential Antioxidant, Anti-inflammatory and Enzyme modulatory effects of Parotoid glandular secretion of Indian Toad (Bufo melanostictus)**

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**Abstract:** Biomolecules from natural sources especially from animal kingdom (Amphibian) plays an important role in providing us information to have therapeutic potential for different ailments. If new molecules derived from these secretions can become new chemical entities and helpful in the new drug discovery. Among amphibians toad skin glands proved to have wide variety of chemical substances those may become potential drug candidates in the future. Particularly from Indian Toads (Bufo melanostictus) parotoid glandular secretions showed some potential activities like anti diabetic and cardiotonic properties. Till now there is limited literature available on Indian Toad Parotoid Glandular Secretions (TPGS), and it may contribute new chemical entities to the scientific field. Our present work aims in finding out the activity with unexplored biologically potential activities like anti oxidant and anti inflammatory effects and also influence on the metabolizing enzymes in rats. Acute toxicity study was done at 5, 50,300 and 2000 mg/kg and LD50 determined was 300 mg/kg because at 2000mg/kg mortality was observed, significant change is observed in body weights, food intake, water intake and locomotor activity of rats at 300 mg/kg.In this study TPGS shown antioxidant activity which was examined by 2, 2-diphenyl-1-picrylhydrazyl (DPPH) assay, and showed significant scavenging effect and IC 50 of TPGS found to be 33.53Âµg/ml. Further it has also decreased rat paw edema from 49.6±0.9 to 33.6±1.8 with the combination of naproxen (NPX) and TPGS. Only with TPGS treated group rat paw edema decreased from 47.6Â±1.3
to 32.1±1.9. shows TPGS has inflammatory potential both in single and in combination groups. Pharmacokinetic interaction between naproxen and TPGS resulted in significant decrease (p<0.05) in mean Cmax, AUC, T1/2 and increase in Cl and Vd values indicate the increasing of elimination and induction of metabolism of NPX because of decreased serum concentration of naproxen in inflammation induced rats.

Sub-Code-2520

Ref No: pxKrwpbP

Title: A Comparative Study on The Neuro-Protective Effects of DHA, Vitamin-E And Memantine in the Neonatal Rat Model of LPS Induced Cerebral Palsy

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Abstract:
Cerebral palsy is the most common childhood physical disability. There is no known cure for cerebral palsy. Prenatal treatment with energy-rich neuronal supplementation will be the choice for preventing CP (Cerebral palsy). In the present study we have selected Sprague dawley (SD) rats, and were allowed to mate at 22±1Âºc under a 12hour light and 12 hour dark cycle. After confirming pregnancy by vaginal smear test, drug treatment is initiated for the respective treatment arms. From day 5 of gestation period, treatment is initiated with DHA (Docosa Hexanoic Acid) -2.5mg/kg, Memantine - 20 mg/kg and Î±- tocopherol -150mg/day. Treatment was continued up to 20th day of Gestation. On 19th day of gestation LPS (Lipopolysaccharide) 500 Âµg/kg (intra peritoneal) was administered. Once the pups were born, they follow weaning period of up to 21 to 23 days. After which they were separated for analyzing their motor, sensory and cognitive functions. The present study has revealed the neuroprotective effect of DHA, Memantine and Î±- tocopherol on LPS-induced cerebral palsy in SD neonates. From the study results it can be hypothesized that n-3 fatty acids, specifically DHA, will prove to be a â€œnovelâ€• and important therapy to treat various neuro-degenerative disorders and could decrease mortality and increase long-term functional recovery.

Key Words: Cerebral palsy; Docosa Hexanoic Acid; Lipopolysaccharide
Oral Clinical Presentation

Code-2600

Sub-Code- 2601

Name- Dr. Jaykaran Charan
Ref No: CJTQTZAM
Title: Mismatch between disease burden and clinical trials in India
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Abstract:
Background: Research output/efforts in a country should address the national disease burden. India is a site for several national and multinational clinical trials. However, whether clinical trials performed in India address the disease burden is not well known.
Objectives: The aim was to evaluate the relationship between disease burden and clinical trials performed in India.
Methods: We performed a cross-sectional study. We extracted data on the disease burden from the World Health Organization (WHO) website and on characteristics of clinical trials performed in India from the Clinical Trial Registry of India. Categorical data were summarized as frequency and percentages using descriptive statistics.
Results: Only 18% of clinical trials addressed top 10 diseases associated with 68.3% of overall mortality and 8% of clinical trials addressed top 10 diseases associated with 52.3% of disease adjusted life years. Majority of clinical trials were conducted for diabetes mellitus (11.2%), followed by blood and immune disorders (5.3%), skin diseases (2.7%), hypertensive heart diseases (2.7%) and asthma (2.6%).
Conclusion: Clinical trials performed in India do not address the disease burden of India. Further research is need to understand the reasons behind this mismatch.

Sub-code-2602

Name- Jasmine
Ref No: g7fZKA0k
Title: Prospective randomised open label study to evaluate the effect of Sitagliptin on lipid profile in patients with type 2 diabetes mellitus with dyslipidemia
Author Name: Jasmine John Ponvelil
Co-Author Name: H.A.Krishnamurthy2,B.M.Parashivamurthy3
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Abstract:

Introduction: The growing incidence of type 2 diabetes mellitus is a major problem and may be associated with a variety of lipid abnormalities that pose cardiovascular disease risk factors. The results of recent studies have suggested that GLP-1 signaling decreases the levels of TGs, cholesterol and apoB48 produced by the small intestine. Sitagliptin is a DPP-4 inhibitor administered either as monotherapy or in combination with other oral antidiabetes agents. Although some data suggesting the beneficial effects of GLP-1 agonists on dyslipidemia have been cited in the literature, very few studies have been done with respect to DPP-4 inhibitors in this area. Therefore, this study aims to evaluate the effect of Sitagliptin (DPP-4 inhibitor) on lipid profile in Type 2 diabetes mellitus with dyslipidemia.

Methodology: The study was conducted on type 2 diabetic dyslipidemics, whose sugar levels were inadequately controlled on Metformin. A total of 120 subjects were recruited for the study and randomized into Group I and Group II as controls and cases respectively, with 60 subjects each. Patients in Group I were given T.Glibenclamide 5 mg OD, titrated as per need and patients in Group II were given T.Sitagliptin 50 mg OD, both for 3 months.

Results: The mean change in HbA1c at the end of 3 months showed a difference of 1.01% in Glibenclamide treatment group, compared to 0.58% in Sitagliptin treated group. The mean change in Total cholesterol showed 0.3mg/dL change in subjects on glibenclamide, compared to 6.1mg/dL in subjects on Sitagliptin. The mean change in Triglyceride level showed 1.6mg/dL in subjects on Glibenclamide as compared to 6.7mg/dL in sitagliptin group. The mean change of LDL cholesterol showed a difference of 0.06mg/dL in subjects on Glibenclamide as compared to 3.1mg/dL on sitagliptin group, over a period of 3 months.

Conclusion: There is a significant reduction in total cholesterol, triglyceride levels and LDL levels with sitagliptin and no significant change in lipid profile in patients treated with glibenclamide. Sitagliptin proves to be a more useful drug in Type 2 diabetes mellitus with dyslipidemia among other antidiabetic drugs.

Key words: Dyslipidemia, Sitagliptin, Glibenclamide

Abbreviations: CM-chylomicron, LDL-low density lipoprotein, HDL-High density lipoprotein, GLP-1-Gluagon like peptide 1, DPP-4-Dipeptidyl peptidase-4

Sub-code-2603

Name- Jeena M Joy

Ref No: CKsHoUFV

Title: Drug utilization study and adverse drug reaction of anti retroviral drugs among HIV infected patients in an ART center.

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Abstract:

Objective: To i) Evaluate the drug utilization pattern of antiretroviral drugs in HIV infected patients and ii) Monitor adverse drug reactions associated with anti-retroviral drugs.

Materials and Methods: A retrospective observational study was carried out by collecting the data of HIV infected patients visiting ART center of Civil Hospital, Belagavi for a period of six months. The detailed data from case file was collected and noted in a proforma. Simple descriptive statistics was used for analysis.

Results: The total numbers of patients were 230. Of which majority were males 122(53.04%). Most common age group affected were 30-45years 92(40%) and common risk factor being heterosexual group 197(85.65%). Occurrence of HIV was more among illiterates (33.91%) and agricultural laborers (13.4%). Tuberculosis was the common opportunistic infection among the patients. CD4 count was done prior to ART, most of the patients 93(40.43%) showed less than 200 cells/µL. The most commonly prescribed ART regimen was a combination of Tenofovir+Lamivudine+Efavirenz 177(76.96%) and among NRTI of 460(45.9%), Lamivudine was commonly used 230(22.95%). The concomitant medication prescribed was antibacterial agents 251(25.05%) and others were haematinics (3%).The most common adverse drug reaction was anemia due to drug Zidovudine.

Conclusion: Anti retroviral drugs utilized in our study was in accordance with national guidelines and rational approach to prescribing pattern. Incidence of ART associated ADRs are reduced as the patients were periodically monitored. Occurrence of ADR was more frequent only in patients with prolonged treatment.

Keywords: Drug utilization, antiretroviral drugs, adverse drug reaction

Sub-Code-2604

Name- Dr.Srinivasa.B

Ref No: cfKIa7YX

Title: Drug utilization of analgesics in post-operative orthopaedic inpatients in tertiary care centre: A prospective observational study

Author Name: Dr Srinivasa B, Dr Aruna Bhushan, Dr Basavaraj C Kotinatot

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Abstract:

Objectives: The aim of this study is to evaluate the prescribing pattern of analgesics and analyze the rational use of analgesics in orthopaedic post operative in-patient department of tertiary care teaching hospital, BIMS Belagavi.

Materials and Methods: An observational and cross-sectional prospective study was conducted from April to June 2019, prior permission from institutional ethics committee was taken.

Detailed data of the inpatients including demographic, diagnosis, treatment and adverse effects was collected and entered in a proforma and expressed statistically. The prescribed drugs was assessed using National Model List of Essential Medicines(NLEM) 2015 and the rationality of prescriptions was determined using the WHO indicators of drug utilization.
Results: Out of 300 orthopaedic post operative inpatients, 192 (64%) were males and 108 (36%) were females. Patients of age group ≥51 years were more prone for fractures. The common indication for operative procedures was road traffic accidents inflicted fractures. The average no of analgesics per prescription was 1.126. In this study, 87.3% of patients had received single analgesic and tramadol (53%) was commonly prescribed drug. Majority (86.6%) of patients received parenteral preparation. Antibiotics (32.7%) were most frequently prescribed concomitant drugs. 338 analgesics used were from NLEM. 245 (72.5%) analgesics were prescribed by generic name.

Conclusions: Tramadol was the commonly prescribed analgesic. Most of the analgesics prescribed was rationally from NLEM and were by generic name.

Key words: Drug utilization, Analgesics, Orthopaedics, postoperative inpatients.

Sub-code-2605

Name-Elisha Paikray

Ref No: qtPlt7fX

Title: Ephedrine versus phenylephrine in spinal anaesthesia induced hypotension during cesarean section.

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Abstract:

Background and Objectives: â€“ Maternal hemodynamic changes are common after spinal anaesthesia during caesarean delivery. Vasopressors like ephedrine, phenylephrine and mephentermine are used for treating spinal anaesthesia induced hypotension. The aim of study was to compare efficacy of ephedrine and phenylephrine in treatment of hypotension secondary to spinal anaesthesia for caesarean section and their effects on fetal outcome.

Method: â€“ This observational, cross-sectional study was conducted in Dept.of Pharmacology in collaboration with Depts.of Anaesthesiology and Obs & Gyn over a period of four months. Parturients attending the Obs & Gyn Dept, with ASA Grade I, undergoing caesarean section under spinal anaesthesia and presenting with hypotension were assigned to two groups; Group E (n=25) received Ephedrine 6mg/ml bolus increments and Group P (n=25) received Phenylephrine 100 Âµg/ml bolus increments for treatment of their hypotension during caesarean section. Assessment was done in terms of maternal blood pressure and heart rate (recorded every 2 minutes for 20 minutes and then every 5 minutes till end of surgery), neonatal Apgar score (at 1 and 5 minutes of delivery) and side effects. All data was tabulated as mean Â± SD and analyzed statistically. P value <0.05 considered significant.

Results: â€“ Both drugs effectively caused normalization of blood pressure in hypotension induced due to spinal anaesthesia. However incidence of maternal tachycardia was more in...
ephedrine & bradycardia was more in phenylephrine treated groups. Both drugs have similar effects on Apgar score.

Conclusion: “Ephedrine and phenylephrine are equiefficacious in treating spinal hypotension during caesarean section without any adverse effects of neonates.

Sub-Code-2606

Name- Upinderkaur

Ref No: OW52HBry

Title: Translating the observations of geriatric pharmacovigilance services to clinical practice

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Abstract:
Paracelsus’ famous quote “Dose decides a drug or a poison” holds true in general healthcare but when it comes to geriatric health practice, the right drug given at right dose to the right patient can bring with it undesired consequences. Vulnerability of geriatric patients to adverse drug reactions (ADRs) is a known fact and is attributed to their altered pharmacokinetics & pharmacodynamics. It is not uncommon to see elderly patients displaying exaggerated or even unexpected pharmacodynamic responses leading to or prolonging hospitalization. Here, we present the salient features of our recently conducted prospective observational study pertaining to the field of geriatric pharmacovigilance in the geriatric ward of a tertiary hospital. Nearly 23% of admitted geriatric patients (n=658) developed ADRs with hypokalemia as the most common individual ADR (13%) and electrolyte and metabolic disturbances being the most common ADR class (27%). Individually, linezolid was involved in maximum ADRs (10%) followed by dextrose normal saline and piperacillin-tazobactam (6.7% each). Drug-category wise, antibiotics were involved in more than 30% ADRs followed by diuretics (11%). More than 60% ADRs were avoidable. Further, interestingly, the Naranjo scale of causality association was not applicable in 12.75% ADRs. The individual atypical cases of ADRs observed in some of our patients during hospitalization are also presented. We summarize the lessons learnt from both the prospective study and individual cases and which we have inculcated in routine geriatric healthcare practice at our center.

Sub-Code-2607

Ref No: 2AujSKjo

Title: Evaluation of drug related medical emergencies: Excluding poisoning, focus on adverse drug reaction, non-compliance, and therapeutic failure

Author Name: Dhiren Patel,
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Abstract:

Introduction: In recent years patient safety has become a major concern for health care providers, and medication management is one of its more relevant aspects.

AIMS AND OBJECTIVE: - To determine the proportion of medical emergency admissions that are secondary to Adverse Drug Reactions (ADRs), Non-compliance and Therapeutic failure. To estimate the frequency of Drug therapeutic failures (DTFs) among cases of adverse drug events referred to the emergency department and to identify drug classes implicated and to analyze the putative causes for all the cases.

Materials and Methods: Total 208 patients above 18 years of age diagnosed with ADRs, Non-compliance and DTFs by clinician were taken up for the study as per inclusion and exclusion criteria. Details of Patient were recorded in case record form and ADR recorded in "ADR Reporting Forms". Paired t-test and ANOVA were used to compare the data between follow up. The collected data was analyzed using Statistical Package for Social Science (SPSS) version 21.0. p<0.05 was considered statistically significant.

Result: Out of 208 patients, 71(34.13%), 93(44.71%), and 44(21.15%) patients were hospitalized due to ADRs, Noncompliance & DTFs respectively. 50.7%, 40.85% & 8.45% of ADRs were in recovering stage, recovered completely and "status not known" respectively. 11%, 28% ,and 61% of the ADRs were preventable, non-preventable and probably preventable respectively. WHO-UMC causality assessment score showed 53.52%, 39.43%, and 7.04% ADRs as possible, probable/likely and certain/likely respectively. Of all reported non compliances, 77.4% were unintentional, whereas 22.6% were intentional. Reasons for noncompliance were adverse effects (77.4%), cost (11.35%), inadequate instruction (6.65%), switch to unconventional medication (3.30%), forgetfulness and dislike to take medicines (1.7%) . According to MMAS-8 questionnaire, 28% and 82% patient showed low and medium level of adherence respectively. Multivariate logistic regression showed that old aged, unemployment, forgetfulness, dissatisfaction with drug treatment, more number of medicine and cost of treatment had statistical significant association with lower incidence of medication adherence. Patient presented at medical emergencies due to noncompliance, had MMAS-8 score between 3 -5. Evaluation of 44 reports of suspected DTFs in study showed that only 7.14% could be actually attributed to a manufacturing quality problem. Inappropriate use of the prescribed drug (i.e. misuse) 38.09% and lack of optimum information, 26.19% accounted for the suspected DTFs.

Conclusion: Our data are useful regarding the severity outcome, preventability which would be further helpful for future study as well as spreading awareness among the physicians and laymen. Therefore hospital based monitoring of ADRs by clinicians should be encouraged. Elderly diabetics, patient who cannot recall their medication regimen, patient who received more number of medications accounted for Non-compliance to medical treatment. Drug therapeutic failures were reported due inappropriate use of drug, inadequate laboratory test and incomplete information. Awareness in the patient related to their regimen is required. Clinicians should also play equal part in DRF cases.
Sub-Code -2608

Name-Sahana M Mogali

Ref No: NP6QJMNV

Title: Study of adverse drug reactions profile in a tertiary care hospital: A retrospective observational study.

Author Name: Dr. Sahana M Mogali

Co authors : Dr. Aruna Bhushan and Md. Ajmat Khan.

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Abstract:

Objective: To study adverse drug reactions (ADRs) profile in a tertiary care hospital and to determine seriousness, predictability, causality, severity and outcome of ADRs.

Materials and Methods: A retrospective observational study was conducted in a tertiary care hospital over a period of five years. Data was collected from both inpatient and outpatient record regarding details of patients, drugs, ADRs and entered in a specially designed proforma. Collected data was evaluated using appropriate scales. Simple descriptive statistics was used for analysis.

Results: Total number of ADRs reported were 330, female patients were 217 (65.76%) and males were 113 (34.24%) with ADRs. Majority of patients were in age group of 21 to 50 years (69.7%). Among these reactions 29 (8.78%) were serious and 301 (91.21%) non-serious. Maximum ADRs reported from medicine department 188 (56.9%). Cutaneous ADRs were most frequent 134 (40.6%). Antiretroviral agents were most common drugs causing 80 (24.2%) ADRs. Overall predictability was 69.7%. When causality assessment of ADRs was done 2 (0.6%) were identified as certain, 121 (36.7%) as probable and 207 (62.7%) as possible. Severity assessment showed 129 (39.1%) reactions were mild, 201 (60.9%) moderate and none in severe grade. Outcome was 256 (77.6%) patients had recovered, 69 (21%) were recovering and 2 (0.6%) had not recovered from ADR.

Conclusion: Most of ADRs in our study was due to polypharmacy. Antiretroviral therapy was the most common cause for ADRs. Due to these ADRs there is prolonged hospitalization and increase in economic burden. Hence there is always a need for prevention and periodical monitoring of ADRs.

Key words: Adverse drug reactions (ADRs), causality assessment, severity.

Sub-Code-2609

Ref No: AhYAAS6q

Title: Evaluation of Polypharmacy and Appropriateness of Prescription in Geriatric Medical In- Patients at A Tertiary Care Hospital: A Prospective Observational Study

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Abstract:
Objectives: To evaluate appropriateness of prescription in geriatric medicine in patients using BEERS criteria and to evaluate the proportion of geriatric patients receiving polypharmacy

Methodology: A cross sectional prospective observational study was conducted on geriatric patients (> 60 years) in medicine wards of a tertiary care hospital for a period of 8 weeks after obtaining approval from the Institutional Ethics Committee. Written informed consent was obtained before including them in the study. All in-patients were visited daily during their hospital stay and interviewed. They were then followed up till he/she is discharged and their case record sheets were reviewed for gathering necessary information in a pre-structured proforma which included patient’s demographic details, diagnosis, common indications for admission and systems involved, comorbidities, hospital stay duration and details of drug therapy. Data were evaluated for appropriateness of prescribing by using BEERS criteria. Polypharmacy was considered if there were five or more drugs per prescription.

RESULTS: Out of 120 patients screened 58% were males and 42% were females. 74.5% were prescribed appropriately according to BEERS criteria. Polypharmacy was noted in 62% of the elderly patients of which 33% had cumulative co-morbidities (> 4 diagnoses). The highest number of drugs used in a patient per prescription was 13.

Conclusion: Polypharmacy and inappropriate prescription that are common in geriatric patients are linked to heightened risk of detrimental health outcome. BEERS criteria is a well-established method for evaluating appropriateness of prescription.

Keywords: geriatric, BEERS criteria, polypharmacy

Sub-Code-2610

Ref No: PZ6nnpyR

Title: Awareness of Drug information centres among healthcare professionals in a teaching hospital in kumaon region.

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Co-Author Name: Gupta A, Srivastava B, Bhardwaj R, Khanchandani R

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Abstract:
Background and aim: Drug information centres (DIC) provide in depth, unbiased source of crucial drug information to meet the needs of the practicing physicians, pharmacists and other healthcare professionals. So the study is conceptualized to assess the drug information seeking behavior and awareness for rational drug use in healthcare professionals.

Methods: A cross sectional study was conducted including the faculty and the postgraduates of Government medical college, Haldwani. The study tool was a questionnaire containing 20 questions of which seven, seven and six questions were of knowledge, attitude and practice
(KAP) respectively. The duration was of 15 â€“ 20 minutes given for responses. The information for drug information centre was given after the interview.

Results: The individual response rates for knowledge, attitude and practice were 61.25%, 67.28% and 50.78% respectively. About 42% knew the role of DIC in rational use of drugs and 85.75% had a strong attitude towards holding continuous medical education (CME) and workshops to educate about current treatment guidelines whereas 82% never sought information from a DIC.

Conclusion: The faculty and the students lacked an adequate knowledge and practice but they had a positive attitude towards drug information seeking behaviour and rational use of drugs. So there is an increasing need for holding CMEs and workshops for decreasing adverse effects, drug interactions and their resistance in the population.

Keywords: Drug information centre, Knowledge attitude practice, Continuous medical Education, postgraduate, Kumaon

Sub-Code-2611
Ref No: slW65WJg
Title: Prescribing Pattern of Antipsychotic Drugs in A Tertiary Care Teaching Hospital, Haldwani
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Abstract:
Introduction- Psychotic disorder is a symptom of mental illness characterised by distorted or non-existence sense of reality. Antipsychotics are the agents used for the treatment of psychotic disorder.

Aim and objective- To develop a baseline data on prescription pattern of Antipsychotic drugs in outpatient and inpatient department of Psychiatry of Dr Susheela Tiwari ,Government Medical College and Hospital, Haldwani, Uttarakhand.

Material and method- In total, 218 patients were recruited, out of which 16 patients were lost during followup. Therefore, the following study was done in 202 patients. Detailed history, gender, demographic data, clinical diagnosis were recorded on the day of patients visit. Details of medication, i.e., the number of drugs used; drug class/ category, dose, route, frequency and duration of administration, and any concomitant drug prescribed were also recorded on the same day.

Result- The majority of the patients were males, and the most commonly affected age group was 18-30years. 90.60% patients are from OPD. Olanzapine (46.5%)was the most commonly prescribed antipsychotic drug . and psychosis was most common indication for prescribing antipsychotic drugs. Monotherapy was given in 90.1% patients with olanzapine being the most common drug prescribed.
Conclusion - olanzapine was the single most commonly prescribed antipsychotic followed by risperidone and amisulpride. Psychosis was most commonly diagnosed psychotic disorder followed by psychosis NOS and BPAD. Monotherapy of antipsychotic drugs was significantly prescribed irrespective of psychotic disorders. Olanzapine is the most common drug prescribed in monotherapy.

Keywords- psychotic disorder, olanzapine, monotherapy,

Sub-Code -2612

Ref No: ecMempJJ

Title: Association of Statin use and progression of diabetic retinopathy in Tertiary Care Hospital in Southern India-A hospital based retrospective study.

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Abstract:

Aim: To evaluate the role of statin therapy on diabetic retinopathy (DR) progression.

Methods: This retrospective cohort analysis was carried out at Kasturba Medical College and Hospital, Manipal after obtaining approval from the Institutional Ethics Committee. The primary outcome measure was diabetic retinopathy progression by two or more steps on the Early Treatment Diabetic Retinopathy Study (ETDRS) scale. Data was collected from the medical records of patients admitted between January 2013-December 2018. Out of 1673 patients of DR enrolled in the study, 171 were included as per the inclusion / exclusion criteria. Patientâ€™s demographic data, drug history, clinical characteristics, and lab investigations were recorded as per proforma with lab values like lipid profile, glycemic index, liver, and renal function tests were recorded at baseline, 6 months and 12 months post-DR diagnosis.

Chi-Square test was carried out to compare the status of diabetic retinopathy progression between the two groups (statin users vs non-users). Independent t-test was done to compare the continuous variables between the two groups. Longitudinal data was analyzed using logistic regression analysis between the dichotomous dependent variable and the independent variables at baseline and 12 months Statistical analysis was done using SPSS version 16 (IBM) and Numbers software (Apple v5.1).

Result: Diabetic retinopathy progressed in 67% of non statin users and 37% of statin users (p<0.001). Clinically significant macular edema was seen in 8 of 79 statin users (10.1%) and 16 of 92 non-users (17.4%) based on optical coherence (OCT) findings during the follow-up period (p =0.173).
Conclusion: Lipid-lowering therapy with statins has the potential to impede diabetic retinopathy progression.

Sub-Code-2613

Ref No: cltVlv5E

Title: Evaluation of drug use in Intensive Care Unit of a Tertiary Care Teaching Hospital â€“ A Prospective Observational Study

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Abstract:

Introduction: Irrational drug use is a common problem worldwide and Intensive Care Unit (ICU). Because most of the patients in the ICUs are critically ill and often suffer from multiple complications, Polypharmacy becomes unavoidable. Hence evaluation of drug use is important in ICU.

Objective: Evaluation of use of various drugs and assessment of the rationality of the drugs used in ICU using Phadkeâ€™s criteria.

Method: After approval from Institutional Review Board (IRB) and written consent from the patients, a total no. of 237 patients above 18 years of age presenting to casualty and admitted to ICU were included in the study during period of one year. The data was collected in the Case Record Forms. The data were analysed for: Demographic pattern, presenting symptoms, diagnoses, Co-morbid conditions, ADRs (Adverse Drug Reactions), Prescription pattern, rationality and cost. Statistical analysis was carried out using IBMÂ® SPSS Version 25.

Result: Out of 237 patients enrolled, 119 were male and 118 were female with the most common age group being 51-60 years. Mean number of drugs were 6.13±1.54 per prescription. Total 44 fixed dose combinations (FDCs) were used. Pantoprazole and Ondansetron were the most commonly prescribed drugs. According to Phadkeâ€™s criteria, 104 rational and 133 irrational prescriptions were identified. There was a statistically significant difference (p<0.05) amongst various parameters like no. of ADRs, cost per patient and numbers of antimicrobial agents used between rational and irrational prescriptions with rational being better than the latter. Average cost per patient was 8,803.93 INR with rational prescription group being cheaper at 7474.72±3126.90 INR and irrational prescription being costlier at 9743.38±3126.90 INR.

Conclusions: Both rational as well as irrational prescribing of drugs was found in our study; although most of the drug utilization was justified. Our study shows that irrational prescribing and polypharmacy is prevalent in ICU setup.

Keywords: Drugs, Intensive Care Unit, Phadkeâ€™s criteria, Rationality
Sub-Code – 2614
Ref No: apImX1jH
Title: Study of Knowledge, Attitude and Practice of Peripheral Intra-Venous Cannulation Among Interns at Mc Gann Teaching District Hospital, Shivamogga, India
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Abstract:
Introduction: Peripheral intravenous cannulation (PIVC) is used as the first choice vascular access device and is a commonly performed clinical skill by junior medical doctors and interns in hospitals. Applying the proper cannula insertion technique is important as multiple needle insertion attempts can lead to pain, stress and increased chances of infection and also affect the patient’s satisfaction and comfort. OBJECTIVES: This study was done to determine and identify the level of understanding and knowledge regarding peripheral intravenous cannulation among interns.

Methodology: A validated structured questionnaire containing 13 questions in knowledge, attitude and practices (KAP) format was distributed among 109 interns affiliated to McGann Teaching District Hospital, Shivamogga to collect data about peripheral intra-venous cannulation. The participants were instructed to answer all the questions. Data were analysed using SPSS 21.

Results: The study indicated that the interns were not well trained in performing peripheral intra-venous cannulation, an important skill in the emergency department. The knowledge about the various complications occurring during the procedure of PIVC is limited. There was poor understanding about the need for hand washing prior to the procedure. There was lack of knowledge regarding the size of cannula gauge for standard insertion and also about whether PIVC is a clean or an aseptic procedure.

Conclusion: Procedural skills such as PIVC should be trained in skill laboratories as practicing on real patients can cause ethical issues. A separate learning module can be established to ensure the interns get proper knowledge about PIVC and other basic procedures. PIVC success insertion rate can also be improved by identifying the clinician and patient factors affecting the first time cannula insertion.

Key words: Peripheral Intravenous cannulation (PIVC), Skill laboratories, Cannula insertion

Sub-Code-2615
Ref No: ymAb86pf
Title: Clinicopharmacological comparision of efficacy and safety of Azilsartan versus Enalapril in patient of hypertension with diabetes
Author Name: Dr Vivek Dwivedi, Kothari S2, Rastogi P3
Abstract:

Introduction: Hypertension is the most common cardiovascular disease defined as sustained increase in blood pressure >140/90mmHg .Hypertension are becoming increasingly common in diabetes as compared non diabetics

Aims and Objectives: To study and compare the efficacy and safety of enalapril and azilsartan in patient of hypertension with diabetes.

Material and Method: This is a longitudinal, prospective , randomized , comparative study between Azilsartan and Enalapril. The study was conducted in department of pharmacology and out patient cardiology of J.A.H group of hospital G.R.M.C. Gwalior. Total 90 hypertension with diabetes patients were enrolled (45 in each group) during february 2018 to march2019.

Result: They were divided in two group randomly as follow group 1{Azilsartan( n=41) 40 - 80 mg once a day} and group 2 {enalapril( n=42) 5-20 mg once a day} Total 7 out of 90 patients were dropped out from my study as follows 4 patients from group1 and 3 patients from group2 Baseline blood pressure was recorded and follows every 4 weeks upto 12 weeks

At the end of 12 weeks blood pressure reduction was shown in both group as follows group 1 (SBP=22.76 and DBP= 11.46) and group2 (SBP= 20.59 and DBP= 10.19) as compared to baseline bloodpressure .Both groups are statistically significant (<0.05) but Azilsartan shown better efficacy than enalapril but statistcalluy not insignificant.

Conclusion: Azilsartan and enalapril are proved to be efficacious in patients of hypertension with type2 diabetes but Azilsartan has shown more efficacy as compared to enalapril.

Keywords: Azilsartan, Enalapril ,Hypertension, Type2 diabetes, bloodpressure

Sub-Code-2616

Ref No: iZdhrCe6

Title: Prescribing pattern of antidepressant drugs in tertiary care teaching hospital, Haldwani

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Abstract:

Background: The objective was to study the prescribing pattern of antidepressants in psychiatric unit of a tertiary care teaching hospital, Haldwani

Methods: An observational study of 205 patients was carried out at psychiatry outpatient and inpatient department. The data collected included information about age, gender, occupation, number of drugs used; drug class, dose and route of administration.

Results: Among 205 patients, 51.2% were females and 48.8% were males. Depression was more commonly seen between patients with age group 18-30 years. Depression was more common among housewives (41.4%). Most commonly prescribed antidepressant as
monotherapy was paroxetine and as combination therapy was fluoxetine and mirtazapine. Among concomitant drugs, clonazepam (74.6%) were most commonly prescribed followed by olanzapine (5.4%) and paracetamol (3.9%).

Conclusions: Depression is more commonly seen in females and housewives. Paroxetine is more commonly used followed by escitalopram. Most common concomitant drug prescribed was clonazepam. Selective serotonin reuptake inhibitors are preferred over other antidepressant because of their relative lesser side effects.

Keywords: Antidepressants, Drug utilization, Fluoxetine, Paroxetine

Sub-Code-2617

Ref No: KayLGrxc

Title: A study to develop an alternate sampling strategy to measure Rifampicin concentration “to facilitate this service in resource limited settings

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Abstract:

Background: Rifampicin, the cornerstone of anti-tuberculosis therapy, is known to have high interindividual variability. The therapeutic range for rifampicin plasma concentration for Cmax is 8-24 ug/ml and in a study done in our department it was reported that 77% of children failed to achieve the recommended concentration with the doses used in the RNTCP. Peripheral clinics which treat TB, do not have the infrastructure for monitoring plasma rifampicin concentrations. We looked into the use of DPS [Dried Plasma Spots] to predict rifampicin concentration, which has the advantage of lesser sample and biohazard, easier storage, transport without the need of cold chain, possibility of guiding patient care even from a distance.

Aim: To develop and validate an alternate sampling strategy using DPS for measurement of rifampicin concentration and to determine whether DPS can predict the plasma rifampicin concentration.

Methods: Patients diagnosed with tuberculosis and on anti TB treatment, were recruited in the study. 2 ml of blood was withdrawn two hours after the administration of rifampicin, plasma separated and stored at -80â„¢C. The plasma was used both to measure rifampicin concentrations by HPLC [High Performance Liquid Chromatography] method and secondly to spot 40 ul on the WhatmanTM filter paper (DPS). A newly developed and validated HPLC method was used to measure DPS rifampicin concentration. Plasma was used to avoid the influence of haematocrit on the accuracy of this assay. The correlation between plasma and DPS rifampicin concentration was estimated and possibility to predict plasma rifampicin concentration using DPS was studied.
Results: With 40 patients, the Pearson’s correlation between the two sampling strategies showed a high correlation of R^2 \ 0.9268 and the Bland Altman Plot showed good agreement between the two methods. 

Conclusion: Dried plasma spot can be an effective alternative to predicting the plasma rifampicin concentration.

Sub-Code-2618

Ref No: 6vs7ArMA

Title: Evaluation of corticosteroid use in outpatient department of dermatology of a tertiarycare teaching hospital: a prospective observational study

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Abstract:

Background: Corticosteroids are widely prescribed drugs in dermatology. Rational prescribing of steroids is important for best therapeutic outcome at lowest possible dose. A study was carried out at a tertiary care teaching hospital in order to evaluate the use of corticosteroids which provided a picture of trends in the usage of corticosteroids in dermatology at that set-up.

Materials and Methods: This prospective, observational study was carried out in department of dermatology for 1 year after ethical approval. Data was analysed for parameters related to corticosteroids, their potency, WHO drug prescribing indicators, effectiveness as well as effects of corticosteroids on quality of life of patients. Statistical analysis was done using SPSS.

Results: In the 223 patients, 44.84% patients belonged to 21-40 years age group. Most common indication was eczema in 29.15% cases. Topical betamethasone (25.11%) and oral prednisolone (20.17%) were most frequently prescribed. 95/140 topical steroids prescribed were super highly potent. Among concomitant drugs, a majority of 38% were antihistaminics. Degree of polypharmacy showed 04 drugs in a majority (43.15%) of prescriptions. Only 6.27% drugs were prescribed by generic name. Conclusion: Corticosteroids were beneficial to a large no. of patients. Initial usage of low potency steroids topically wherever possible can be emphasized. WHO drug prescribing indicators analysis indicated the need to adhere to WHO guidelines as well as prescribing drugs by generic name. To maintain a balance between judicious use and frequent abuse with corticosteroid is important along with physician’s vigilance and patient education.

Key-words: Betamethasone, Corticosteroids, Dermatology, Potency, Topical, WHO drug prescribing indicators.
Objective: To assess the predictors of treatment outcomes of multidrug-resistant tuberculosis cases treated according to Revised National Tuberculosis Control Programme.

Materials and Methods: A retrospective study was carried out in the Department of Pulmonary Medicine of MKCG MCH. All patients enrolled for multidrug-resistant tuberculosis management between January 2013 to December 2014 were included in the study. Demographic details, symptoms, sputum examination findings were collected from the multidrug-resistant tuberculosis register. Besides, resistance pattern, adverse drug reactions, medication adherence and final treatment outcomes were noted in a predesigned case record form. Data were analysed using suitable statistical tests.

Result: Out of 95 patients, males outnumbered females. Most of the cases belonged to rural area (89%). The mean age of study participants was 39.1 years. Most common pattern of resistance (60%) was to both Isoniazid and Rifampicin (HR). Among all, 52% were completely cured. 23% were defaulters and 3% of them had treatment failure. Death was recorded in 21% of cases. Most common Adverse Drug Reaction (ADR) associated with the medications was joint pain. Alcohol and smoking habits, concomitant medications for other co-existing diseases, poor medication adherence, occurrence of ADRs were the independent negative predictors (P< 0.05) of successful outcomes. Sputum conversion within 3 months was the positive predictors of successful treatment outcomes (P< 0.01). Age, gender, geographical area and pattern of anti-tubercular drug resistance did not influence the treatment outcomes.

Conclusion: Our study observations revealed that the treatment outcomes of MDR TB as per PMDT guideline was low. It seems there is a need for conducting more programmes among DOTS care providers regarding the awareness of risk factors of poor outcomes and health education among patients.
Sub-Code-2701

Ref No: Eq4L3mTp

Title: Gynaecomastia in HIV positive patient on highly active antiretroviral therapy (Haart): Case Report

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Abstract:

Gynaecomastia is a benign enlargement of the male breast secondary to stromal proliferation and ductal hyperplasia. Here we report a case of 40-year-old male presented with bilateral enlargement of breast with HAART (Highly Active Antiretroviral Therapy) treatment.

Patient was apparently normal 4 years back and was accidently diagnosed HIV positive during his hospital stay for fever and started on first line ART regimen (TLE regimen Tenofovir600mg+Lamivudine300mg+Efavirenz300mg). Since last 4 months patient had psychological & cosmetic consequences with gynaecomastia. General physical examination of the patient was normal and local examination of both the breast revealed asymmetrical, palpable, elastic, concentric swelling, non tender, mobile subareolar mass. Right breast was measuring 26cmX20cm & left breast 18cmX12cm. There was no skin changes, no discharge from the nipple. Patient underwent mastectomy of right breast and followed up for change of regimen from efaverinz to nevirapine. After the change of regimen, left breast was regressed within 6 months of follow up. Gynaecomastia is rarely noticed side effect of HAART therapy which has cosmetic & psychological consequences. At public health, we advised to include standard pre-ART counseling for gynaecomastia.

Keywords: Gynaecomastia, HIV, HAART, Efavirenz

Sub-Code-2702

Ref No: WdSPo0QA

Title: Prescription Trend of Topical Corticosteroids in Outpatient of Dermatology in a Tertiary Care Hospital in Aurangabad, Maharashtra

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Abstract:

Background: Skin diseases amounts for a large fraction of patients attending the outpatient of dermatology and topical corticosteroids (TCS) are being commonly prescribed, the data related to
drug usage patterns of TCS in skin conditions are particularly lacking. Hence it is vital to study the drug prescribing patterns of TCS in skin diseases. Objective: To study the demographic details and drug prescription pattern of TCS in patients with skin diseases. Materials and Methods: A cross-sectional study conducted in the Dermatology Department, MGM Medical College, and Aurangabad over a period of 6 months. The patients with skin diseases who were prescribed TCS were included. The data was collected by direct observation in a specially designed Performa containing relevant detail such as demography, skin conditions and drug used. The data were analyzed as counts and percentages. Result: Majority of the patients were under the age of less than 20 years (38%) followed by those between the ages of 21 years to 40 years (36%). Female patients (57.4%) were more. Patients from rural and urban areas were almost equal. Most common condition identified was dermatitis (36.2%) followed by Psoriasis (24.5%). Clobetasol propionate (38.8%), mometasone furoate (12%) and betamethasone dipropionate (15.7%) were the commonly prescribed TCS. 38% molecules were of superpotent class while 29% from potent class. Maximum dosage form was cream and ointment. Common concomitant drugs used were Antihistaminics (24%) and Antibiotics (36%). Fixed dose combinations (FDC) of TCS were commonly with fusidic acid and salicylic acid. Average drug per prescription was 2.85. Conclusion: Prescription pattern provides critical feedback to prescribing physician by focusing on rationalizing drug therapy. FDC of TCS with salicylic acid and fusidic acids are rational and approved by CDSCO.

Key words: Prescribing pattern, Topical corticosteroids, Dermatology, Rational, Skin disease.

Sub-Code-2703

Ref No: Ss3L3ufG

Title: Adverse drug reactions monitoring in patients on antitubercular treatment in Tertiary Care Hospital, Mandya.

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Abstract:

Background: Tuberculosis is one of the major public health concerns in India. Treatment of tuberculosis need multidrug combinations, which is associated with increased incidence of adverse drug reactions (ADRs). Hence there is a need of active monitoring for adverse effects in patients who are on antitubercular treatment (ATT).

Objectives: To study the pattern of ADRs caused by antitubercular drugs and to assess causality, severity and predisposing factors.

Methodology: A prospective observational study was conducted for 6 months in tertiary care hospital of Mandya, wherein 74 patients of tuberculosis who experienced ADRs were included in the study after obtaining informed consent. Their demographic, treatment and ADR data were collected and analysed. Causality was assessed using WHO scale and Naranjoâ€™s algorithm whereas severity was assessed by Modified Hartwigâ€™s scale. Statistical analysis was done using descriptive statistics like mean, average and percentage.
Results: Among 74 patients, 55(74.32%) were males and 19 (25.67%) patients were females. A total of 86 ADRs were recorded amongst 74 patients as 11 patients experienced two ADRs. During intensive phase and continuous phase of treatment, 65 (87.63%) and 9 (12.16%) patients experienced ADRs respectively. Gastrointestinal intolerance and hepatotoxicity (Hepatitis and raised enzymes) were most frequently occurred ADRs with 23 (26.7%) each, followed by pruritus and rashes in 18 (20.93%) patients. Most frequent suspected medication was isoniazid, rifampicin, pyrazinamide and ethambutol combination with 47 patients (63.51%). As per WHO- Causality scale majority of ADRs were probable 44 (59.45%) and with Naranjo ImVecs causality algorithm majority of ADRs were probable 58 (78.37%). As per Modified Hartwig and Siegel scale for severity assessment, majority of ADRs belonged to mild (67.56%) category.

Conclusion: ADRs induced by ATT are common. Hence counselling of patients regarding their life style with early detection and management will minimize the occurrence of ADRs and improves the adherence to treatment.

Sub-Code-2704

Ref No: JSWqc2Fv

Title: A study to evaluate drug usage in neonatal intensive care unit in a Teaching Hospital at Mandya

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Co-Author Name: Dr Chandan NG 1 Dr Sridhar PV 2

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Abstract:

Background: Neonates are special group of population for dosing due to immaturity of their body functions. Great care to be taken in drug utility. Drug utilization studies are important for rational drug usage. This study done to evaluate World Health Organization (WHO) prescribing indicators in teaching hospital, MIMS, Mandya.

Materials and Methods: The study was done after approval from Institutional Ethics Committee over a period of 1 year. The data was collected from Inpatient chart of Neonatal Intensive Care Unit (NICU) admissions, regarding gestational age, birth weight, age, gender, diagnosis, duration of hospital stay and medications administered. Data was analysed using descriptive statistics and Chi square test.

Result: A total 627 prescriptions were studied & about 129 drugs were prescribed. Mean gestational age of neonates admitted were 35.7 ± 3.3 weeks. The mean birth weight was about 2.39 ± 0.81 kilograms. First commonest cause for admission was prematurity (35.6%), second was low birth weight (15.2%), followed by perinatal asphyxia (10.04%), respiratory distress syndrome (8.6%), sepsis (6.7%) and others. Mean duration of hospital stay was about 5.1 ± 4.2 days. Average number of drugs per encounter was about 5 drugs. Percentage of drugs prescribed by generic name was 70.99%. Percentage of encounters with an antibiotics and injectables were about 96.45% and 97.92% respectively. Percentage of drugs prescribed in compliance to WHO Essential Medicine Model list (EML children) was 78.29%.
Conclusion: The present study showed NICU prescriptions composed more number of generic drugs compared to non-generics giving impact on necessary drug utilization from the hospital drug supply & also in compliance with EML.

Sub-Code- 2705
Ref No: m2uOMqF9
Title: Knowledge Attitude and Practice about consumption of caffeine containing drinks among medicos of BRIMS Bidar.
Author Name: Naghma Sabiha, Shailendar Singh Associate Professor BRIMS.
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Abstract:
Background: Caffeine, worldâ€™s most widely consumed and legally accepted psychoactive substance which is commonly found ingredient in many drinks like coffee, tea, carbonated drinks and energy drinks. The objective was to explore how much dependent are the students on caffeine containing drinks, reasons and circumstances for the consumption and to know the knowledge and attitude of the consumers about the health effects of the caffeine containing drinks.

Methods: A validated questionnaire was given randomly to about 150 MBBS students of BRIMS teaching hospital bidar.

Results: Out of 150 students in the study, 92% (n=138) of them drink caffeinated beverages in the form of coffee tea (80%), coffee(35%), energy drinks (17%), carbonated drinks (18%) and all of the above (15%). The major reasons for consuming varied, where more than half of them gave the reason as to keep them awake for study purpose (58%), to get refreshed (50%), taste and flavor (50%). About 50% were of an opinion that they do experience different symptoms if they donâ€™t consume their daily caffeine intake. 75% students admitted their caffeine consumption has been increased after joining the university. When knowledge and attitude were questioned, 90% of them think caffeine addiction is a health issue and majority of them were aware of the ingredients.

Conclusions: Drinking caffeine containing drinks by the students are variable from different sources, so monitoring is necessary for the daily intake and there is need for educational program. about the health effects related to high consumption of caffeine.
Keywords: Caffeine, Addiction, Coffee, Tea, Energy drinks, Educational program.

Sub-Code-2706
Ref No: bhU1ZcbB
Title: Potential hazards of antibiotics
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Abstract:

Background: Adverse drug reactions (ADRs) are any unwanted/uncomfortable effects from medications resulting in physical, mental and functional injuries. Antibiotics account for up to 40.9% of ADRs in south Indian population. Out of these 27% are associated with several serious outcomes, and in that 90% required additional medical intervention.

Methods: Observational study of ADRs due to antibiotics. Adverse reactions are collected from various departments in Gandhi Hospital, Secunderabad. The total study period was 12 months and analysed the collected data to find out the pattern of adverse drug reactions due to specific antibiotic drug class. Causality, severity were assessed using standard scales.

Results: During the study period, a total of 80 cases who have reported ADRs due to antibiotic use were reported. Gender-wise distribution showed that females were slightly more affected than males by the ADRs due to antibiotics [43(55%) Vs.37 (45%). Most common age group is 21-40years. Out of the total of 80 cases who have reported ADRs due to antibiotics administered to the patients, cephalosporin antibiotics are associated with more ADRs followed by Penicillins, Quinolones. The most affected organ systems were the skin (82%) followed by gastrointestinal tract (9%). Oral route of administration was causing more ADRs (55%) followed by intravenous and intramuscular routes.

Conclusions: Current study states that ADRs due to antibiotics are common and few of them are severe. The most common organ affected due to antibiotic is skin due to Ceftriaxone.

Sub-Code-2707

Ref No: aL0Dnb8J

Title: Phenobarbital induced Toxic Epidermal Necrolysis - A Case Report

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Abstract:

History: A 41-year-old female presented with complaints of fever, swelling of face and both the upper limbs, excessive peeling of skin over face, neck, trunk, back of trunk to dermatology OPD of Gandhi Hospital. There were acute complications, consisting of wide spread lesions all over the skin, pleural effusion and electrolyte imbalances, hypoproteinaemia, deep vein thrombosis. Investigations revealed Raised ESR, eosinophilia (8.1), leukocytosis (13,540 per cubic millimeter), hyponatremia (serum Na+ 131meq/L) hypoproteinemia (serum proteins 4.20 g/dl, serum albumin 2.07 g/dl). Dermatologist diagnosed the condition as Toxic epidermal necrolysis secondary to phenobarbital (body surface area >40%). She is a known case of epileptic. Few days ago, patient had approached local physician for increased seizure episodes, for which she was advised to start phenobarbital once again. She denied allergy to phenobarbital. The management included immediate withdrawal of phenobarbital and supportive therapy with corticosteroids, antibiotics, antiepileptics, anticoagulants and antihistaminics, human albumin and iv fluids. She was discharged after 25 days on complete recovery.
Conclusion: It can be concluded that reinitiation of a medication with a history of known allergy can result in Toxic epidermal necrolysis which is a serious life-threatening adverse drug reaction.

Key words: Toxic epidermal necrolysis, Phenobarbital, Eosinophilia, adverse drug reaction, antibiotics, corticosteroids, antihistaminics.

Sub-Code-2708

Ref No: sGhvbg9

Title: Evaluation of Antiemetics in Chemotherapy-induced Nausea and Vomiting

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Abstract:

Objective: Chemotherapy-induced nausea and vomiting (CINV) is one of the most feared side effects experienced by patients with cancer. Although chemotherapy improves survival, but its toxicities and side effects have a negative effect on the quality of life. The objectives of this study are to Evaluate of Antiemetics in CINV and to assess the incidence of breakthrough emesis and required the rescue therapy.

Methods: A prospective observational study was carried out in patients undergoing chemotherapy. The study was conducted from January 2019 to Jun 2019. The study sample size was 673 cancer patients admitted in Oncology department in G.R. Medical College, Gwalior (MP). Data about nausea and vomiting were collected using Multinational Association of Supportive Care in Cancer Antiemesis Tool (MAT). The severity of nausea and vomiting was assessed by the MAT and Common Terminology Criteria for Adverse Events (CTCAE) version 4.03, respectively.

Results: The mean age of participants was 52.3 years (SD = 11.65, range = 22 to 74) and were mainly female (54.0%). In the study 673 patients are commonly; tongue carcinoma (19.6%), breast carcinoma (18.8%), carcinoma of cervix (13.2%). Among these patients, 36.25% of patients received highly emetogenic chemotherapy (Cisplatin & Cyclophosphamide), 51.85% received moderate emetogenic chemotherapy (Carboplatin, Epirubicin & Doxorubicin) and 11.88% received low emetogenic chemotherapy (Paclitaxel, Etoposide & Imatinib). All patients received Ondansetron in combination with Dexamethasone and Ranitidine for prophylaxis of CINV and 29% patients developed breakthrough emesis and all required rescue therapy.

Conclusion: The incidence of CINV among the patients was relatively high and it indicates that more attention is needed for the treatment and prophylaxis of CINV. It also gives an idea for implementation of more efficient antiemesis guideline in the clinical practice.

Keywords: Antiemetics, chemotherapy, nausea, vomiting
Objective: To study demographic details, clinical patterns, implicated causative agents and severity of cutaneous adverse drug reactions [CADRs] in patients reporting to a tertiary care hospital of northern India. Methods: It was a prospective observational study carried out in OPD of dermatology, K.G.M.U, Lucknow after the approval of Institutional Ethics Committee. The patients with various CADRs were recorded. The suspected adverse drug reaction reporting form issued by Central Drugs Standard Control Organization [CDSCO], and modified Hartwig and Siegel severity scale were used as study tools. Results: A total of 124 patients were reported with CADRs. Highest incidence was in the age group 21 -30 yrs (36.3% ) followed by 31-40 yrs (25.8% ) with mean age Â± SD 35.88Â±13.87 range (18-78) years. More males (60.5%) were affected than females (39.5%). Fixed Drug Eruption (49.2%) was the most common clinical pattern observed followed by maculopapular rash (36.3%). Severe CADRs accounted for 8.06%. Less commonly observed were urticaria and exfoliative dermatitis 1.61% each. The most common suspected drug group was antimicrobial (50.8%) followed by unknown (17.7%), combinations (14.5%) and anti-epileptics (8.9%). Non steroidal anti-inflammatory drugs and antigouts accounted for 2.4% and 1.6% respectively. Severity assessment categorized most of the CADRs as moderately severe (70.9%) followed by mildly severe (20.9%) and severe (8.06%). Conclusion: Commonly prescribed drugs have been implicated to cause CADRs in majority study population which stimulates the need for reporting ADR that can help in early detection and thus management to improve patient outcome.

Keywords: Cutaneous adverse drug reaction, fixed drug eruption, maculopapular rash, antimicrobial, severity

Title: A study to perform cost analysis of pharmacotherapeutic treatments in acne patients coming to Tertiary Care Hospital of Northern India

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Abstract:

Objective: To perform cost analysis of different treatments prescribed to acne patients in a northern population of India. Methods: Patients with acne coming to dermatology OPD, K.G.M.U, Lucknow were registered. In a total of 60 patients, three groups of twenty each were considered. Each group was prescribed one type of acne treatment which were categorized as treatment A, treatment B and treatment C. Treatment A was topical clindamycin, treatment B was topical clindamycin plus topical adapalene and treatment C was topical adapalene plus topical benzoyl peroxide. The data collected was evaluated for cost analysis. Results: Cost variation (max cost – min cost) per unit dose observed in treatment A was rupees (73 – 187), treatment B was rupees (76 – 254.15) and treatment C was rupees (352.5 – 459.3). The minimum cost per unit dose was observed in treatment A followed by treatment B and then in treatment C. Percent cost variation observed in treatment A was 156.2, treatment B was 234.4 and treatment C was 106.8. Significant percent cost variation was observed in all the three groups with maximum seen in treatment B followed by treatment A and then treatment C. The mean of the total therapy cost for 3 months for treatment A, treatment B, and treatment C was 549, 526.57, and 790.44 respectively. Treatment B provided with minimum cost as compared to treatment A and treatment C. Conclusion: Cost analysis helps in assessing the therapy which provides similar outcome with minimum cost thus a better alternative economically.

Keywords: Acne, cost analysis, cost variation., minimum

Sub-Code-2711

Ref No: wGeYAgxR

Title: An observational Study to assess the prescribing pattern of drugs used in the treatment of hypertension in a tertiary care teaching hospital in North India

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Abstract:

Background -Hypertension is a disease which poses high economic burden. A drug utilization and pharmacoeconomic analysis becomes an unmet need in such situations which can help identify the prescription pattern and rationalize drug usage.

Objectives -To analyse the drug usage in terms of percentage per prescription Defined Daily Dose (DDD) as per WHO Anatomic Therapeutic Chemical (ATC) Classification system. To perform a cost minimization and cost effectiveness analysis for drugs being prescribed to hypertensive patients coming to the OPD of medicine department in a tertiary care hospital of Northern India.
Material and methods - Patients coming to medicine OPD screened with hypertension with base line values > 140/90 mm of Hg. Data were recorded on pre designed case report for a total of 138 patients. Collected data was analysed and statistically evaluated for drug utilization and pharmacoeconomic analysis.

Result - Prescriptions with generic name were 43% and drugs from essential drug list were found to be 78%. Most commonly prescribed drug as monotherapy was calcium channel blocker which was 37% followed by beta blockers which were 17% of the patients. In polytherapy, combination of Calcium Channel Blocker (CCB) and Angiotensin receptor blockers (ARB) were most commonly employed in 24% followed by CCBs and diuretics which were prescribed to 19%. Other frequently prescribed combinations were diuretics + beta blockers. Data from the cost minimization analysis showed to be the cheapest drug in monotherapy was amlodipine, 2.6 rupees per tablet and combination for ARB and diuretics rupees per tablet in polytherapy.

Conclusion â€“ “Prescription pattern and drug utilization was in accordance to recommendations of international hypertensive guidelines. Price indexing showed major variation which emphasizes on changes in pricing and use of medications.

Keywords â€“”Hypertension, prescription pattern, drug utilization, pharmacoeconomic

Sub-Code-2712

Ref No: AXOB8uMn

Title: A prospective, observational study of prescribing pattern and pharmacoeconomic analysis of drugs used in the treatment of bronchial asthma, in patients attending Respiratory Medicine OPD at tertiary care hospital in Northern India

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Abstract:

Background â€“ Prescription pattern and pharmacoeconomic studies are important tool in evaluating the rationality of drug use and the most cost-effective treatment option for better compliance in patient receiving treatment for diseases. Objective â€“ “Study of pattern of prescription of anti-asthmatic drugs and comparison of economic parameters of different treatment alternatives used in the management of asthma. Material and Methods â€“ Prescriptions of 114 patients of asthma were recorded for demographic details, pattern of use of asthmatic drugs and pharmacoeconomic (cost minimization and cost effective) analysis. Patients were assessed and followed up for improvement in clinical symptoms, spirometric parameters and quality of life at baseline and at regular intervals. Results â€“ “Average number of drugs/prescription was 3.22, with 46 % drugs were prescribed with generic names and 50 %, 42.8% of drugs were in accordance with National Essential List of medicines (NELM) ,WHO Essential Drug List(EDL). Most commonly prescribed single group, fixed dose combination (FDCs) of anti-asthmatic drugs was Short acting beta 2 agonist (SABA)-Levosalbutamol (61.4%) and [Steroid (ICS) + Long acting beta 2 agonist (LABA)] (86.8%).
Highest % cost variation was found to be with Montelukast + Levocetrizine (706.25 %) and lowest with Budesonide + Formoterol (13.4%). Conclusion â€“ Asthma is a major economic health problem. Increased cost of treatment not only imposes financial burden on the patient but also decreases patient adherence towards treatment. Keywords - Asthma, Prescribing pattern, Percentage cost variation, Pharmacoeconomic analysis.

Sub-Code-2713
Ref No: 3UpaPi2e

Title: An observational study to find out the therapeutic outcome of major depressive disorder patients coming to Psychiatry Out-Patient Department in a Tertiary Care Hospital

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Abstract:

Background: By 2030, Major depressive disorder is estimated to be the second leading cause of burden of disease. The objective of the study was to find the therapeutic outcome of patients suffering from depression in a tertiary care hospital.

Methods: A prospective observational study was conducted in the department of psychiatry, K.G.M.U., Lucknow for a period of 12 months. The data that were collected included information about the demographic profile and drug prescription pattern at the time of presentation, and efficacy of antidepressants and adherence at 6 months, of 96 outpatients who attended the psychiatry out-patient department.

Results: Among 96 patients with major depression, a higher preponderance is seen in the subgroups of the age range of 21-40 years (55.2%), females (70.8%), married individuals (89.6%), illiterates (50%) and housewives (61.5%). 61.5% belonged to moderate severity according to the 17-item Hamilton depression rating scale (HAM-D) with a mean score of 15.94±3.51. Of all patients, 89.6% were given selective serotonin reuptake inhibitors (SSRIs), of which 43% was sertraline and 57% escitalopram. All of the patients were co-prescribed benzodiazepine. Overall 55.2% responded and 51% underwent remission after a period of 6 months. Adherence rates at 6 months were poor; 46.8% of patients were non-adherent to treatment. 20.8% complained of adverse drug reactions during the course of 6 months.

Conclusions: With the increase in incidence and prevalence of major depressive disorder in India, depression will become a public health problem. Majority of the patients with depression are often non-adherent and not relieved completely of their symptoms which call for a higher degree of patient education, and careful monitoring and follow-up.

Keywords: â€“ escitalopram, sertraline, major depressive disorder, benzodiazepine, HAM-D
Title: An observational Study to assess the prescribing pattern and pharmacoeconomic analysis of oral hypoglycaemics used in the treatment of diabetes in a tertiary care teaching hospital in North India

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Abstract:

Background: The cost of diabetes care is high and is escalating worldwide. The WHO estimate is based on lost productivity due to diabetes, heart diseases, and stroke together show that over the next 10 years, lost national income in billions of USD will amount 336.6 in India

Objectives: To conduct a pharmacoeconomic analysis, drug utilization pattern in Define daily dose (DDD), quality of life of patients before and after treatment with oral hypoglycaemics.

Material and methods: The study was done for a 8 months duration. 89 patients with diabetes were analysed, data was collected on pre designed case report forms for baseline parameters, drugs prescribed. Quality of life of patients was assessed using EQ-5D-5L scale.

Result: As per the core prescribing indicators defined by WHO average drugs prescribed per prescription were 5, average number of hypoglycaemic was 1.88 and satisfied guidelines of rational prescription. Most commonly prescribed drug in monotherapy was Metformin 500 mg and, with utilization in DDD 19.9 and in combination was Glimperide 2 mg + metformin 500 mg. The results obtained from pharmacoeconomic analysis showed a high cost variation of > 100 % in 70% of the drugs within the same class. As per the results of pharmacoeconomic analysis most cost effective drug was metformin 500 mg, with Average cost-effective ratio (ACER) of 4.0 for per unit reduction in fasting blood glucose level and 143.84 for improvement in Hb1 Ac. Teneligilptin 40 mg was the most cost-effective drug when compared to metformin with incremental cost-effective ratio (ICER) of 23.44. The quality of life health index value showed clinical improvement of .07 which was statistically insignificant (p value= 0.781).

Conclusion: Evidence obtained from pharmacoeconomic study is valuable for justifying the money spent in deriving health care resources. Results of this study point towards need of reforms in pricing of drugs and data for use by utilization based on outcome research.

Keywords: Diabetes, Pharmacoeconomic, EQ 5D 5L, Drug utilization, Daily Defined Dose

Title: Analysis of Antifungal Drug Prescriptions for Local Fungal Infections in Skin & Venereal Diseases Outpatient Department of a Rural Tertiary Care Hospital

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Abstract:

Introduction: An estimated 20-25% of the worldâ€™s population has some form of fungal infection, usually an anthropophilic tricophyton infection, making fungal infections the most common type of infection worldwide. Fungal infections of the skin were the 4th most common skin disease in 2010 affecting 984 million people.

Aim: Analysis of Antifungal Drug Prescriptions for Local Fungal Infections in Skin & Venereal Diseases Outpatient Department of a Rural Tertiary Care Hospital

Materials and Methods: This study was an observational study. It was done for 1 year from February 2018 to January 2019. About 1000 prescriptions of patients attending the Dermatology OPD were analysed.

Results: Total 1000 prescriptions were analysed during the study. Male patients were most commonly affected than female patients. Over 47.4% of patients were in 18 to 27 years of age group. Patients most commonly affected tinea cruris (41.50%) followed by tinea corporis (38.20%) fungal infections. Most commonly prescribed individual antifungal was oral Itraconazole (82.3%) and topical ketoconazole (31.10%). Most frequently prescribed antifungal agents were the azoles: amongst which imidazoles (41.10%) were the commonest.

Drug prescribed per prescription were two (66.90%).

Conclusion: The most common oral antifungal used was Itraconazole. Ketoconazole was the most commonly used topical agent. This study will help in understanding antifungal prescription practices and help in directing future studies and also in developing local policies for appropriate use of antifungal drugs.

Sub-Code-2716

Ref No: df5TMyNK

Title: A study of potential drug-drug interactions in HIV positive individuals with comorbidities.

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Abstract:

Background: Potential drug-drug interaction (PDDI) refers to the possibility of a particular medication altering the intensity of the pharmacological effects of another medication, thereby, increasing or decreasing the therapeutic effect, adverse reactions or the responses other than those originally stemming from the medications. Comorbidities like metabolic disorders, cardiovascular disease, etcetera, is widely prevalent in HIV patients results in the prescription of additional medications giving rise to PDDIs.
Methods: In this retrospective observational study, data was collected from medical records of adult HIV positive patients (on ART) with comorbidities who visited the hospital between January, 2015 and June, 2017. Based on the University of Liverpool drug interaction database, the interactions were identified and classified into three categories. The category of PDDI (333 interactions) requiring monitoring, dose adjustment or adjustment to the time of dosing was taken and evaluated for the type of interaction, risk and prevalence. Time of onset and severity was determined using Micromedex drug interaction database. Risk ratio, repeated measures ANOVA and binomial logistic regression were used out for the estimation of risk.

Results: In this study, out of the 244 people enrolled, 162(66.4%) were males whereas 82(33.6%) were females, 109(44.7%) individuals just had one comorbidity whereas 135(55.3%) individuals had multiple comorbid conditions. By analysing risk ratio, it was seen that patients receiving ≥5 drugs, protease inhibitor based antiretroviral regimen, duration of illness (of ≥6 years) were at a higher risk of development of potential drug-drug interactions whereas gender preponderance had no ascertainable risk. Pharmacokinetic PDDIs (85.7%) were higher in comparison to pharmacodynamic PDDIs (14.3%).

Conclusion: Awareness among prescribers of this silent but important occurrence will help in the recognition, prevention and management of PDDI which might otherwise complicate the therapeutic outcome.

Sub-Code-2717
Ref No: t04nQtN1
Title: Self-medication Practice among Undergraduate Medical students in Telangana.
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Abstract:
Introduction: Self-medication is the use of medications without prior medical consultation regarding indication, dosage and duration of treatment. The curiosity and eagerness among medical students to apply knowledge gained during their education in their day to day life may lead to self-medication. This study was conducted to determine prevalence and pattern of self-medication among medical students. The results of this study will help to make informed decisions on including self-medication as a topic in the curriculum for sensitizing them on benefits and risks of self-medication.
Objectives: To assess the pattern of self-medication practice among undergraduate medical students in a Medical college.
Methods: This was a cross-sectional, questionnaire-based study, conducted on 308 Undergraduate medical students of all the semesters in Mediciti institute of Medical Sciences.
Results: The prevalence of self-medication among this study was 64%, of them 96% practiced self-medication in the last one year. Self-medication was more among students of 4th and 8th semester. Fever (88%) followed by common cold (80%) were the most common reasons for self-medication. The most commonly used drugs were antipyretics (92%) and antihistaminics (71%). Majority practiced self-medication considering their condition as a minor ailment (81%). Previous prescription (47%) and family members (43%) were found to be their sources of information. Among the participants 79% were aware of adverse effects of whom 8% experienced them. Almost all students agreed that self-medication is not safe in all age groups, not to be practiced for prolonged period and requires close monitoring for the possible side effects, yet most take self-medication without reading the drug information leaflet.

Conclusion: The practice of self-medication was high in this study. Considering ailments as minor and ease of availability of medications at the pharmacy might have led to this practice.

Sub-Code-2718

Ref No: DJCV71iIN

Title: Study of prescription pattern in pediatric patients of bronchial asthma attending Out Patient Department in a Tertiary Care Teaching Hospital

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Abstract:

Introduction: Pediatric bronchial asthma is a common chronic disorder of airways which requires long term management. Globally, irrational prescribing trends pose a huge problem. It not only increases the cost of treatment but also increases incidence of adverse drug reactions (ADR). This emphasizes dire necessity for monitoring of prescriptions pattern. As such, this study was planned to observe the drug prescription pattern in pediatric bronchial asthma patients attending outpatient department in a tertiary care hospital.

Materials and Methods: An observational, non-interventional, and cross-sectional study was conducted in a tertiary care teaching hospital in Aurangabad. All childhood asthma patients attending outpatient departments were enrolled in the study in accordance with inclusion and exclusion criteria. Patientâ€™s demographic details, details of anti-asthmatic drugs, and all other drugs such as dose, duration, type of dosage form used, frequency of drug administration, etc. were recorded.

Results: Majority of the pediatric patients of asthma were males and belonged to the age group of 6-10 years. 43.67% patients were treated with single anti-asthmatic drug whereas 56.34% patients received multiple drug therapy. Average number of drugs per prescription was found to be 2.89. Inhalational route was preferred and all the drugs were prescribed by their brand names. Short acting beta 2 agonists (85%) was prescribed the most followed by (47.66%) inhalational corticosteroids. Antibiotics were prescribed in 11.33% patients.

Conclusion: Prescribing trends in anti-asthmatic drugs were mainly in accordance with the standard treatment guidelines. However, all the drugs were prescribed by brand names. To overcome this, training should be provided to health care practitioners regarding WHO drug policies and significance of generic prescribing.
Title: Knowledge, Attitude and Practice of Vitamin D among nursing students at a tertiary care hospital in North India.

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Abstract:

Background: Vitamin D deficiency is highly prevalent in North India. Besides its role in calcium homeostasis, it is associated with various disorders like cardiovascular diseases, Alzheimer’s disease, autoimmune diseases like rheumatoid arthritis and psoriasis, diabetes mellitus and skin cancers etc.

Material and methods: This study was planned to assess the knowledge, attitude and practice regarding Vitamin D among nursing students in a tertiary care hospital in North India. 247 subjects were enrolled in study after receiving informed consent. The questionnaire contained open ended questions regarding knowledge and practice and yes/no questions in attitude section. They were handed the correct answers of questionnaire (based on guidelines) at the end of study.

Results: About 98% knew that vitamin D is essential for health and sunrays are the main source of vitamin D but majority did not know the importance of early morning sun exposure. Only 36% knew about animal origin and 26% wrongly believed it to be obtained from strict vegetarian diet. About 82% had no idea regarding the prevalence of vitamin D deficiency in India and 78% did not know about its recommended daily allowance. Only 39% knew two or more risk factors for its deficiency. 45% knew at least two symptoms of its deficiency. 68% did not have any knowledge about hypervitaminosis D. Majority (99.5%) did not have any knowledge about its health benefits other than calcium homeostasis. 80% had never taken any vitamin D supplement. Only 45% knew that vitamin D is assessed by its serum/blood levels. None knew about doses of Vitamin D supplements for the prophylaxis and treatment of its deficiency.

Conclusion: This study shows poor knowledge, attitude and practice of vitamin D among nursing students. They need to be given proper education on Vitamin D as they are the health care providers of society.

Title: Prescription pattern during pregnancy in the tertiary care hospital of Kolar, India: A cross sectional study.

Author Name: Asha Basavareddy

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**Abstract:**

Introduction: Pregnancy is associated with major physiological changes in the body. Recommendation to avoid all drugs during first trimester is an unrealistic situation, a benefit risk has to be analysed before prescribing, as management of various ailments during pregnancy is equally important. This study aimed to assess the pattern of drug prescription during pregnancy.

Materials and methods: Cross sectional study was conducted at tertiary care teaching hospital by department of Pharmacology and Obstetrics and Gynecology from December 2016 to 2018 after obtaining ethical clearance from Institutional Ethics Committee. The drug prescriptions given to the ante natal women were collected after obtaining verbal consent from them and entered in a predesigned proforma.

Results: Total of 615 prescriptions were collected. The most common category of medicine was minerals/vitamins 536(46.28%). Majority of the drugs were prescribed from category A 597(51.55%) and category B 398(34.36%). Most of the prescriptions contained two drugs per prescription 301(48.9%) followed by one drug per prescription 199(32.3%). WHO prescribing indicators were compared with the finding of current studies.

Conclusion: The average number of drugs prescribed, injectables and anti-microbial agents utilized were according to WHO standards. The most commonly prescribed drugs were vitamins and minerals followed by drugs used in vomiting. Category A and B drugs were prescribed to the maximum.

**Sub-Code-2721**

**Ref No:** reOyHdPl

**Title:** Knowledge Attitude and Practice towards Adverse Drug Reactions reporting in post graduate students of a tertiary care hospital.

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**Abstract:**

Background: Adverse Drug Reactions (ADRs) are a major cause of morbidity and mortality. Under reporting of ADRs is a huge problem worldwide. So the present study was planned to assess the knowledge, attitude and practices of post graduate students (PGs) towards ADR reporting and suggest possible ways for improvement.

Methods: It was a cross sectional questionnaire based study conducted among 44 PG students using a questionnaire with questions on knowledge (21) , attitude (13) and practices (15) of ADR reporting. The questionnaire was analysed question wise and the percentage was calculated using Microsoft Excel spreadsheet in Microsoft Office 2010 software.
Results: Most of them were aware of the term Pharmacovigilance (Pv) (95.45%). 54.55% agreed to be trained on how to report an ADR. 89.63% knew about the existence of Pharmacovigilance committee in the institute. 93%of participants knew that Central Drug Standard Control Organisation (CDSCO) is responsible for monitoring of ADRs. 56.82% were aware about Vigibase an online software to report ADR.

81.82% of participants had agreed to witness ADRs in patients but only 38.64% reported them. The main reason behind it was non-availability of ADR forms. 42.55% opine that mobile based app would be the most preferred method to send ADR information to an ADR reporting center.

Conclusion: There exists a huge gap between ADR experienced and ADR reported by PG students. Participants agreed upon necessity of reporting ADR and periodic briefing about Pv.

Keywords: Knowledge, Attitude, Practice, Adverse Drug Reaction, post graduate students, Pharmacovigilance

Sub-Code-2722

Ref No: 6thFvkEa

Title: A study on unused and expired drug disposal practices : Knowledge and behavioural patterns among the rural population

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Abstract:

Introduction: Medicines have vital role in treatment and prevention of disease in both humans and animals. There has been an escalating use of medicines in both human and veterinary population and it is almost in sync with the notion of “a pill for every ill”. Unused and expired drugs in the households constitute a dominating cause of environmental contamination with drugs and other health hazards in addition to Industrial waste of the pharmaceutical companies. There are no proper disposal mechanisms being followed in India even we do not have a legislation to follow and to make health care providers accountable.

Aims & Objectives:

1. To Know the current practicing methods of drug disposal in rural areas.
2. To Evaluate the knowledge and behavioural patterns of rural population.
3. To Educate them about the safe drug disposal.

Methodology: Around 650 households were surveyed to know about their current practicing methods of drug disposal and also their knowledge on impact of improper drug disposal on health and environment.

Results: Our study shown that nearly 85% of the participants discarded leftover medications by throwing them in the Garbage, while 7% burned in open place and few Respondents 1-2% followed returned to Pharmacy/health facility/friends etc.
Conclusions: There is an urgent need for creating awareness among the people regarding proper drug disposal mechanisms and to curb the entry of medicines into the environment.

Key words: Unused medicines, Drug disposal, Environment contamination, Awareness

Sub-Code-2723

Ref No: ID91FYfX

Title: Vancomycin Induced DRESS Syndrome

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Abstract:

Introduction: Adverse reaction affecting skin ranges from 2% to 5% of patients all over the world causing severe morbidity and rare instances of mortality. DRESS (Drug reaction with eosinophilia and systemic symptoms) syndrome is a serious complication which may occur due to use of many drugs including antibiotics. The reports of vancomycin induced DRESS are rare with an incidence of 1 per 1000 to 1 per 10000 and hence we are reporting a case here.

Objective: To report a case of Vancomycin induced DRESS syndrome

Case presentation: We collected information about a case regarding a 61-year-old lady, known case of infective endocarditis on treatment with inj. Vancomycin 2g IV BD for 2 weeks, presented with a rash and generalized swelling all over the body for 3 days. Rash was maculopapular and associated with edema and itching. Fever was 38.6 -degree Celsius and was associated with chills and rigors. Eosinophilia was present (Absolute Eosinophil Count: 3.5 x 103 cells/mm3). Creatinine level was 2mg/dl. Drug induced skin reaction was suspected. Vancomycin was stopped. Patient was diagnosed as Vancomycin induced DRESS syndrome according to RegiSCAR criteria. Histopathology report of skin punch biopsy was consistent with DRESS syndrome. Patient was treated on admission with low dose steroids and discharged on resolution of signs and symptoms.

Result: The causality of the adverse drug reaction was analyzed using WHO causality assessment scale, denoting "probable" causality.

Conclusion: Drug hypersensitivity syndrome is fatal in 8-10% of the cases. This makes it all the more important to report the case. Reporting such cases will improve the overall safety profile of the drug and in turn increase the awareness amongst healthcare professionals.

Keywords: Vancomycin; DRESS syndrome; Hypersensitivity
**Title:** Levofloxacin induced Orofacial Dyskinesia

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**Abstract:**

Objective: To describe a case of orofacial dyskinesia in a patient treated with levofloxacin for Urinary tract Infection.

Case Summary: A 38-year-old female patient came with history of fever and burning micturition since 2 days. Her urine showed 10-15 pus cells with no turbidity or cast cells. She was started on Paracetamol 500mg SOS and Levofloxacin 500mg once a day for five days. She developed involuntary movements at the angle of the mouth suggestive of muscle twitching after 2 days. On consultation with the physician, Levofloxacin was discontinued after 3 doses. The muscle twitching disappeared 3 days after the drug was stopped.

Discussion: Fluoroquinolone-associated central nervous system (CNS) toxicities are infrequently observed. Among the fluoroquinolones, ciprofloxacin is most commonly implicated. Inhibition of γ-aminobutyric acid receptors and activation of N-methyl-d-aspartate receptors is the hypothesized mechanism for the same. Orofacial dyskinesia has previously been reported primarily with second-generation fluoroquinolones like ciprofloxacin. To our knowledge, the incidence of levofloxacin induced orofacial dyskinesia is rare and very few cases have been reported. According to Naranjo adverse drug reaction causality assessment, the orofacial dyskinesia is probably due to Levofloxacin.

Conclusion: Orofacial dyskinesia, which is an indication of CNS toxicity, usually goes unnoticed by the patients and physicians. Reporting such cases will improve the overall safety profile of the drug and therefore increase awareness among the health care professionals.

**Key words:** Levofloxacin, Orofacial dyskinesia, CNS toxicity

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**Title:** Drug Utilization Pattern in Neonatal Intensive Care Unit of Tertiary Care Hospital.

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Abstract:

Background and Objectives: Sick and preterm neonates are admitted in neonatal intensive care units (NICU). Great care needs to be taken for use of drugs in neonates due to immaturity of their body functions. Hence, careful consideration and judicious choice of drugs is the key for rational treatment in them. The objective of this study was to evaluate the drug utilization pattern in NICU of a tertiary care hospital and generate useful information regarding rational use of drugs in this critical age group.

Methods: A cross-sectional, observational study was carried out to assess the drug utilization pattern in neonatal intensive care unit in the Department of Paediatric of S.C.B. Medical College and Hospital for a period of 4 months. Demographic details like age, sex, birth weight, duration of hospitalization, morbid condition, and details of drug treatment was noted. WHO core indicators were used for evaluating drug utilization practices.

Result: Out of total prescriptions of NICU, approximately 60% were males and rest were females. 65.05% were preterm, 75.08% were LBW. The drug used maximally were antibiotics followed by Vit K. Most common antibiotic used were ampicillin and gentamycin. Most common cause of admission were prematurity and LBW.

Conclusion: Antibiotic usage in NICU is high, hence its rationality needs to be assessed.

Sub-Code-2726

Ref No: 6WIIhfOg6

Title: Paclitaxel Induced Pneumonitis

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Abstract:

Objective: To describe a case of Pneumonitis in a patient treated with Paclitaxel for Breast Cancer.

Case Summary: A 68 year old female patient with carcinoma breast came with complaints of fever and difficulty in breathing. She had received 2 cycles of Paclitaxel + Trastuzumab Chemotherapy. CT Scan revealed bilateral pulmonary infiltrates. She was empirically started on antibiotics and later discontinued when the cultures were negative. The clinician suspected pneumonitis secondary to Paclitaxel and the patient was treated with high dose steroids after which the patient improved symptomatically.
Discussion: Paclitaxel-induced pulmonary toxicity is unpredictable. Paclitaxel may injure the lung directly via their cytotoxic effects or indirectly by affecting the immune system. Since the incidence of pneumonitis is higher with Paclitaxel (0.73 to 12 %) than Trastuzumab (0.4 to 0.7%), the clinician reported the reaction as “Paclitaxel-induced Pneumonitis”. According to Naranjo adverse drug reaction causality assessment, Pneumonitis is possibly due to Paclitaxel in the present case.

Conclusion: Although pneumonitis is a rare side effect of paclitaxel administration, it is important to be aware of this specific toxicity. Reporting such cases will improve the overall safety profile of the drug.

Key words: Paclitaxel, Pneumonitis, Breast Cancer.

Sub-Code-2727

Ref No: 625WQxa0

Title: Zolpidem induced complex sleep behaviors: a systematic review of published literature

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Abstract:

Introduction: Zolpidem, an imidazopyridine, is a rapid and short acting hypnotic drug. Being non-benzodiazepine, it is considered to have favorable side-effect profile and hence is nowadays widely used in clinical practice for the management of insomnia. However, in the past few years, numerous cases of neuro-psychiatric adverse reactions to zolpidem have been reported. A majority of these reactions comprise of complex sleep behaviors. In this study, we present a review of cases of zolpidem associated complex sleep behaviours reported in literature.

Methods: A systematic search of published literature was conducted using Medline, EMBASE, Pubmed central and Cochrane database of systematic reviews using keywords “zolpidem™, complex sleep behaviors™, nightmares™, parasomnias™, sleep eating™, sleep talking™, sleep walking™, somnambulism™, sleep terror™ to extract all types of relevant articles until July, 2019.

Results: In the current systematic review, we present summarized data from case reports (9), case series (5 series including 34 patients), literature reviews (2) and clinical studies (3). Various types of complex sleep behaviors associated with zolpidem use have been reported in literature. As observed, majority of such behaviors are reversible in nature and complete resolution occurs once zolpidem is withdrawn.

Conclusion: Zolpidem induced complex sleep behaviors, although not very common, may develop when the drug is used at therapeutic doses for insomnia. Physicians need to be alert to monitor such adverse effects of zolpidem and exercise caution while prescribing it.
Sub-Code-2728

Ref No: Zi6sntok

Title: WHO Core drug use indicators in post-operative patients at tertiary care hospital

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Abstract:

Introduction: A number of indicators have been developed, standardized and evaluated by the World Health Organization (WHO) to evaluate rational use of drugs. These indicators are grouped in to three categories namely: prescribing indicators, patient care indicators and facility indicators. The study was aimed to evaluate rational drug use based on WHO-core drug use indicators in tertiary care hospital in post-operative patients.

Materials & Methods: This was a retrospective observational study conducted to assess the antimicrobial utilization pattern using WHO core drug use indicators in post-operative patients admitted in department of surgery and in collaboration with department of pharmacology at a tertiary care hospital. WHO core drug use indicators included (a) average number of drugs per encounter, (b) percentage of drugs prescribed by generic names, (c) percentage of encounters with an antibiotic, (d) percentage of encounters with an injection and (e) percentage of drugs prescribed from the essential drugs list 2015 of WHO and India.

Results: The prescriptions of 305 post-operative patients admitted in surgery department between December 2017 to January 2019, were assessed. WHO Core drug use indicators showed half of the drugs prescribed were generic (50.02%) and were from Essential Medicine List (EML) 2015 (54.8%) of WHO and India (54.2 %). Percentage of encounters with an injectable prescribed was (92.4%). Average number of drugs per prescription were 5.99. Antimicrobials were prescribed in all 100% of the prescriptions.

Conclusion: Majority of WHO stated core drug use indicators were not met. Use of Generic medicines and drugs from essential medicine list should be promoted. Government and hospitals should workup to enhance rational use of drugs.

Sub-Code-2729

Ref No: wuQCLGak

Title: Antibiotics-related adverse drug reactions at a Tertiary Care Hospital in North India

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Abstract:

Introduction: Antibiotics are considered to be commonly used drugs in hospital setting due to higher prevalence of infectious diseases especially in India. So, present study was conducted to assess the incidence of ADRs due to antibiotics & analyze for causality of adverse drug events reported.

Material & Methods: The present retrospective and observational, study was conducted in BPS GMC for women, Khanpur Kalan, Sonipat, Haryana which is a 500-bedded government medical hospital situated in rural area between March, 2016 to February, 2019 (i.e. 3 years). Patients of either sex & age who developed ADRs by any route were included in the study.

Results: 300 (38.65%) cases were reported due to antibiotics out of total 776 ADR cases. 3% cases were serious. Adults (65%) were found to be most commonly affected by ADRs. Among antibiotics, cephalosporins & penicillins (15.98%) were the major culprit to cause adverse events followed by Nitroimidazoles (15.2%) & antitubercular drugs & fluoroquinolones (13.16%). The most affected organ system was skin (49.33%) followed by the gastrointestinal system (33%). As per WHO scale of causality assessment, 33.33% & 67.67% reported cases were found to Probably and Possibly related to adverse events respectively.

Conclusion: Antibiotics are most commonly prescribed drugs so its monitoring regarding ADRs may benefit the clinicians in early identification and management of ADRs so that quality of life of patient can be safeguarded at an earliest.

Sub-Code-2730

Ref No: Ewhx1M6R

Title: A Questionnaire based study to Assess Knowledge, Attitude and Practice of Pharmacovigilance among Final Year Medical Students of BRIMS-Tertiary Care Teaching Hospital.

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Abstract:

Background: Safe use of medicine is an integral strategy having advantages but, side effects are its major draw backs. So, decreasing incidence of ADR is a crucial challenge in drug use. Impulsive reporting of ADRs is the main core of pharmacovigilance. But underrating of ADR is one of the major barriers of pharmacovigilance programme.

Aims and objectives: The main objectives of the present study is to assess the knowledge, attitude and perception of medical students towards adverse drug reaction, reporting and to suggest possible ways of improving this method of reporting.

Methods: This study was a Cross-sectional Questionnaire based Study conducted using a predesigned knowledge attitude practice (KAP) questionnaire among 92 final year students,
studying in Bidar Institute of Medical Sciences, teaching hospital. The completed KAP questionnaire was collected and data analyzed.

Results: Almost all of the students (100%) accepted that reporting ADR is necessary, 56.52% of the students knew the important purpose of pharmacovigilance, 97.83% agreed that pharmacovigilance should be taught in detail to health-care professionals. But there was a huge gap between the ADR experienced 38.04 %, and ADR reported 2.17% by the students. Only 9.78% students have ever seen the ADR reporting form and 43.48% students knew about the existence of pharmacovigilance committee in the institution.

Conclusion: This study shows that final year medical students had good knowledge, sensible attitude but, poor practice towards pharmacovigilance. There is a need for enhancing the knowledge and awareness about pharmacovigilance and ADRs among students by focusing on its importance during their clinical posting as they are our future healthcare providers.

Keywords: Adverse Drug Reactions, Medical students, Pharmacovigilance, Knowledge, Attitude, Practice

Sub-Code-2731

Ref No: IFuPaGrj

Title: A questionnaire study on the knowledge, attitude and practice regarding stress management among Undergraduate Pharmacy students at Pharmacy College

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Abstract:

Introduction: The primary objective of this study was to study the knowledge, attitude, and practices of the healthcare professionals in smt. Kashibai Navale college of Pharmacy. Pharmacy filed demands dedication. Students need to face vast syllabus and tough topics, tough competition, Hence, pharmacy undergraduates face high level of stress and which has negative effects on their learning and thinking ability.

Aim: The aim of questionnaire-based study was to assess the knowledge, attitude and practice regarding stress management among undergraduate in smt. Kashibai Navale college of Pharmacy, Pune, India.

Materials and methods: it was a questionnaire-based cross-sectional study, conducted to evaluate the knowledge, attitude and practice regarding stress management among students. A total of 200 undergraduate students of third and final year of Pharmacy were involved in this study. The questionnaire of 12 questions was to be filled within 30 minutes. Out of 12 questions, 4 questions were of knowledge, 3 of attitude and 5 of practice regarding stress management among undergraduates. The data were recorded in Microsoft Excel Worksheet and analysed.

Results: Out of 200 total undergraduates, 45% and 55% of students were of third and final year respectively. Most common stressors were vast syllabus and tough topics of curriculum. Most commonly used stress reducing strategy by the students was shopping, listen music, 9-10 hr sleep, singing, playing games.
Conclusion: Among pharmacy students, for each year stress level is different and which cause academic stress. Pressure of study among undergraduates leads to their negative physical and mental health.

Sub-Code-2732

Ref No: MXFRAqq3

Title: Critical analysis of the Drug Promotional literatures advertised in a tertiary care hospital

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Abstract:

Background: According to the WHO, “drug promotion” refers to all informational and persuasive activities by manufacturers and distributors of the pharmaceutical industry, the effect of which is to induce a favorable prescription, supply, purchase, and/or use of medicinal drugs. Powerful influence of drug promotional literature on physicians prescribing behavior, dissemination of deceptive information, unsubstantiated claims, and lapses in the field of ethics is a matter of enormous concern.

This study aims to analysis the credibility, reliability and authenticity of the drug promotional literature among the prescribers, which are tactically given to them by the medical representatives.

Methodology: This observational study was conducted at a tertiary care hospital. The data was collected over a period of 3 months after obtaining permission from Institutional Ethics Committee. Around 200 drug promotional literatures were collected from different OPDs. Medical equipments, ayurvedic medicine, drug monography, reminder advertisement, identical advertisement and drug name list were excluded from the study.

Data was compiled in an excel sheet and analyzed statistically.

Results: In our study, the name of the active ingredient, their brand name and the therapeutic uses were mentioned in all the DPLs (100%). The dosage form of the drug was addressed in 85%, whereas the schedule was present in 58% of the DPLs. Most of the DPLs had mentioned about the positive effects of the drug, while few of them described the negative effects of the drugs, namely, adverse drug reactions (39%), precautions to be taken (36%), contraindications (36%) and various drug interactions (33%).

Conclusion: A diverse set of results were obtained when a cohort of 200 promotional literatures were analyzed wherein the positive effects were highlighted covering the negative effects of the drug. Drug Promotional Literatures were not in line and accordance with WHO guidelines, but where modified according to the company preferences.
Title: An observational study to assess the medication adherence pattern amongst hypertensives in a tertiary health care centre and to evaluate the use of cellular phone text messaging as a tool to improve adherence to medications.

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Abstract:

Objectives: To assess medication adherence pattern in hypertensives and to assess the improvement in adherence pattern to anti-hypertensive medications using mobile phone text messaging (SMS and Social media) as a tool.

Methods: The study participantsâ€™ blood pressure was recorded and their adherence to medications was graded as high, medium and low using Medication Adherence Questionnaire. Then messages (SMS and Whatsapp) were sent regularly reminding them the importance of regular medicine intake. After two months of follow up blood pressure was recorded and adherence graded. Data tabulated and statistically analyzed.

Results: Majority of study participants in medium to low grading of adherence (65.2%) moved towards high adherence (88.4%) after two months of follow up. A statistically significant decrease in systolic (8.3 mmHg, p < 0.001) and diastolic blood pressure (2.4 mmHg, p < 0.002) was observed at the end of follow up. There was no significant difference in adherence pattern amongst participants receiving messages as SMS or Whatsapp.

Conclusion: Non-adherence to medication is a global phenomenon to be tackled at the earliest. Our study clearly brings out the importance of improving adherence by regular reminder as messages. Hence, there is a wide scope to avail means to improve the adherence pattern and maximize the health benefits.

Title: Drug utilization study and therapeutic effectiveness of anti-diabetic drugs in tertiary health care hospital in Assam (India)

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Abstract:

The branded medicines are sold at significantly higher prices, though they are identical in the therapeutic value as that of generic medicines. Generic medicines (Janaushadhi) are sold through dedicated sales outlets called â€˜PRADHAN MANTRI BHARTIYAJANAUSHADHI KENDRAâ€™ (PMBJK) with vision to bring down the healthcare budget of every citizen of India by providing effective and quality medicines. Purpose of this study is to determine the drug utilization pattern of anti-diabetic drugs in Tertiary healthcare hospital in Guwahati, Assam, to evaluate the effect of Metformin and other antidiabetic drugs on HbA1c and to perform the comparative evaluation using bioequivalence concept for mostly prescribed anti-diabetic (Metformin), generic drug as compared to branded drug using HPLC method in patient serum. The demographic study showed that middle age person of both male and female are suffering more and nephropathy was mostly observed diabetic complication in the patients. Metformin (22.70%) was mostly prescribed drug and was able to normalize the HbA1c in 31.4% in diabetes patients as compared to insulin which was 14.5%. Pharmacokinetic evaluation show that generic drug is absorbed faster than that of branded drug. Therefore, generic drugs are therapeutically effective as that of branded drugs. Hence, JANAUSHADHI should be promoted in order to enhance health care in India.

Sub-Code-2735

Ref No: t2HN4KjP

Title: A Study of Prescribing Pattern of Antidepressant Drugs in Patients Receiving Treatment for Depression in A Tertiary Care Teaching Hospital

Author Name: Mrinmoyee Boruah

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Abstract:

According to the National Mental Health Survey conducted in 2015 to 2016 in India revealed more than 45 million people are suffering from depression. According to the American Psychiatric Association 80 to 90% of depression patients respond to treatment. Aims and Objectives-To study the prescribing pattern of antidepressants. To study the efficacy of various antidepressants. To study the tolerability of various antidepressants. To study the response rates of various antidepressants.

Materials and methods-The sample size was 100. Inclusion criteria was patients aged 18 years and above of either sex attending the outpatient department and those admitted in the department of Psychiatry of Guwahati Medical College and Hospital.

Results-Escitalopram a selective serotonin reuptake inhibitor was prescribed in 62% cases and Sertaline was preferred in elderly age groups. The efficacy, tolerability and response rates of selective serotonin reuptake inhibitor was better compared to other drugs.

Conclusion-The most common group prescribed was selective serotonin reuptake inhibitors.
Sub-Code-2736

Ref No: rbp2pa4o

Title: Case of Trimethoprim-sulfamethoxazole-induced Steven Johnson syndrome in an HIV-infected patient

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Abstract:

Introduction: Trimethoprim-sulfamethoxazole (TMP/SMX) is a widely prescribed antimicrobial for the management of several uncomplicated infections and commonly used for the treatment and prophylaxis of pneumonia in the HIV-infected population. The adverse reaction to TMP/SMX is more frequent and severe in HIV-infected patients as compared to the general population.

Case Report: A HIV-infected 23 year old female developed Steven Johnson syndrome while receiving doubles strength TMP/SMX therapy two tablets thrice daily for pneumonia. After ten days of starting TMX/SMX therapy, the patient developed high grade fever, painful vesicular lesion (with blister all over the body) and skin excoriation including lips. Therapy was stopped immediately. Re-epithelialization of the previously sloughed areas occurred. The general condition of the patient remained satisfactory and patient was recovering. As per Naranjo®'s scale, the causality came out to be probable.

Conclusion: Since many life threatening hypersensitivity reaction have been reported from this drug, physicians should monitor HIV-infected patients on trimethoprim-sulfamethoxazole therapy and report to the PvPI immediately.

Key Words: Desensitization, HIV infection, pneumonia,Steven Johnson syndrome, trimethoprim-sulfamethoxazole, PvPI

Sub-Code-2737

Ref No: prk kv5dq

Title: Prescription analysis and risk category assessment of drugs prescribed during the pregnancy in a Tertiary Care Center as per United State Food And Drug Administration (USFDA) classification

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Abstract:

Objective: To do prescription analysis and assign risk category as per USFDA to prescribed drug during pregnancy in a tertiary health care center at Raipur, Chhattisgarh.

Method: This cross sectional study was carried out over the period of 2 months in obstetric OPD at AIIMS Raipur. Pregnant woman of any trimester was recruited from Antenatal clinic(ANC) after obtaining informed written consent. Important information collected was demography, gravida, parity, trimester of pregnancy, reason for visit to clinic, history of any chronic illness, names of drugs prescribed with their doses and frequency of administration. Prescription analysis was carried out and USFDA risk category had been assigned to each of the drug.

Results: Total 340 drugs were prescribed for 76 patients. 51.43% pregnant women were from 3rd trimester of pregnancy. Most of pregnant women(92.86%) reported to OPD for regular ANC checkup. Prescription analysis shows that average number drugs prescribed during pregnancy was 4.52 per prescription. Average Fixed dose combinations(FDCs) prescribed were 1.64 per prescription. Vitamins and minerals FDCs(82.4%) were commonly prescribed FDCs. As per USFDA risk categories, prescribed drugs were A(73.83%), B(18.82%), C(7.06%) and D(0.29%) respectively. Antimicrobials were prescribed in 25% pregnant women and commonly prescribed antimicrobial was nitrofurantoin(13.33%) for urinary tract infection. Low dose aspirin and enoxaparin was prescribed in 2 patients to avoid pregnancy loss due to antiphospholipid syndrome. Urodeoxycholic acid was prescribed in 1 patient for pruritus caused by cholestasis. Tranexamic acid was prescribed to 1 patient to reduce amount of post-delivery blood loss. Arginine was prescribed to 3 patients for oligohydramnios.

Conclusions: More than 4 drugs are prescribed during the pregnancy. FDCs prescribed were of class vitamins and minerals. Drugs required to specifically to treat associated health problem belong to category B which can be considered safe during the pregnancy. Different class of drug though not labeled indication (off label) need to be prescribed as per treatment guidelines to prevent the pregnancy loss and prevent postpartum complications.

Sub-Code-2738

Ref No: ZbCp9ZhP

Title: Effectiveness of Pharmacotherapy Training for Interns

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Abstract:

Background: A sound knowledge and understanding of the concepts in pharmacology is necessary for rational approach of therapeutics during internship and further to become a competent medical graduate. Many studies in the past had concluded that current pharmacology training doesn’t give enough knowledge about rational pharmacotherapeutics among interns. Pharmacology is fast changing science, many of the concepts or guidelines/treatment protocols in
pharmacology get updated by the time MBBS students enter internship. Considering the above two points, we had planned a short training programme for boosting the current knowledge base among the interns. The AIM of the study was to assess the effectiveness of pharmacotherapy training among interns attending pediatrics postings.

Materials and Methods: It was a quasi experimental type of interventional study. The study was conducted on 30 interns attending pediatrics postings at SVS Medical College, Mahabubnagar from 1st July to 31st August 2019. Institutional ethics committee approval and informed consent from the interns was taken before the study. A pre-tested & pre-validated questionnaire containing questions from pediatrics pharmacology was administered before the start of the study to get the knowledge scores. All the resource material was given and a short training regarding the pediatric pharmacology was delivered for all the interns after 3 days. A post test was conducted immediately after the training to get the knowledge scores. Comparison of pre-test and post-test scores was done using paired t test to know the learning outcome or the effectiveness of the training programme. P<0.05 was considered significant. Feedback regarding the usefulness of the training programme was taken from all the interns using a survey on a likert scale of 1-5.

Results: The percentage scores of the objective type questions in the pretest was 40.6±3.25 which increased to 74±2.95 in post test (P<0.05). The percentage scores of the problem solving type questions in the pretest was 30.78±5.25 which increased to 65.21±4.65 in post test (P<0.05).

Conclusion: There was a significant improvement in the performance score after conducting a short training in pediatric pharmacology. The interns were also satisfied with such training.
Methods: This was a questionnaire based study conducted among interns at Shivamogga institute of medical sciences. The validated questionnaire format was distributed to interns and data was collected. Then the data was analysed with relevant statistical methods.

Results: The knowledge of interns related to essential medicines list (EML), P drugs and schedule H drugs was limited. Interns knowledge about the revision of EML list, number of fixed dose combinations (FDCs) in EML was limited. Most of the Interns prescribed drugs from EML.

Conclusion: Awareness among majority of Interns about various issues concerned with Rational use of medicines was there, but the knowledge related to EML, P drugs, schedule H drugs and number of FDCs in EML was very much limited. As Interns are future prescribers, they need to be aware of all the aspects of rational use of medicines.Inadequate knowledge in the above areas needs to be addressed.

Key Words: Rational use of medicines (RUM), essential medicines list

Sub-Code-2740

Ref No: 5AmkMaow

Title: A Study To Assess The Knowledge of intravenous fluid in final MBBS students In Tertiary Care Hospital.

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Abstract:

Introduction: Intravenous fluids administration is an integral aspect of the management of hospitalized patients. The skill of deciding the most suitable intravenous fluids for the patient is subtly a complex task that requires a sound knowledge of the same not only as regards to fluid composition but also its appropriate application. The III MBBS students that represent the budding doctors, who may inadvertently use intravenous fluids in their patients. Therefore evaluation of such critical knowledge of these potential candidates becomes important for a better future of health care.

Method: This was a cross-sectional, questionnaire-based study conducted among final year MBBS students (n=200) at tertiary care government teaching hospital in Western Maharashtra. They were given a structured validated questionnaire of 25 multiple choice questions to obtained information about knowledge regarding intravenous fluids.

Results: Responses of 200 students were recorded. 170 students scored between 21%-50%. The students had a poor understanding of the clinical use of IV fluids with scores ranging from 8% to 44 % for various clinical aspects that they were evaluated for. As regards to the knowledge about adverse effects and limitations of intravenous fluids, only 34 % and 15 % respectively recorded correct answers. Students also lacked knowledge of about correct fluid used for various drug dilutions (score minimum 5% to maximum 28%). A majority of 97% of the students agree that there should be more emphasis on intravenous fluid knowledge as a part of MBBS curriculum & training.
Conclusion The present study concludes that students had an idea but lacked adequately detailed knowledge about intravenous fluids for correct clinical application. Therefore special emphasis on application intravenous fluids in the final MBBS curriculum may promote the appropriate and proficient intravenous fluid use.

Keywords: Intravenous fluid, final MBBS students

Sub-Code-2741

Ref No: LMRxS82Q

Title: Utilization and Adverse Drug Reactions of drugs in ophthalmic outpatient and inpatient department of a tertiary care hospital: A Pharmacoepidemiological Study

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Abstract:

Introduction: Pharmacoepidemiology refers to the epidemiological methods to study the clinical use and effects of drugs in large number of people with the purpose of supporting the rational and cost effectiveness use of drugs. 10/10/2019 10:37

Objective: To study the prescribing patterns of drugs in Ophthalmology department and to evaluate prescriptions according to WHO Drug Use Indicators.

Materials & Methods: A cross sectional, observational study was conducted in the department of Ophthalmology. Data was collected from the prescription form of patients in OPD & IPD. Various parameters of utilization pattern were evaluated.

Results: Total number of prescriptions analysed were 744 in which 2478 drugs were prescribed. Analysis of prescriptions showed that average number of drugs per prescription was 1.34 in OPD & 5.32 in IPD. The maximum number of drugs were prescribed in form of eyedrops (68.14%) in OPD and tablets(39.31%) in IPD. Majority of drugs in OPD were prescribed by brand name (61.22%) while in IPD majority were generic (61.75%). Polypharmacy was commonly seen in IPD group (10.86%) as compared to OPD(0.20%) 83.97% of drugs from OPD and 93.08% from IPD were prescribed from National List of Essential Medicines. Average total cost per prescription was Rs 45.60 in OPD and Rs 20.04 in IPD. No adverse drug reactions were reported.

Conclusion: It is necessary to make prescribers aware about the importance prescribing and the factor of cost effectiveness in patients point of view. Also there is a need for the development of prescribing guidelines and educational initiatives to encourage the rational and appropriate use of drugs.
Title: Evaluation of knowledge, attitude and practice of antibiotic use along with antibiotic policy and antibiogram among residents after 4 years of implementation of antibiotic policy in a tertiary care hospital.

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Abstract:

Introduction: Antimicrobial resistance is an important concern for the public health authorities at world level. Recent reports showed the inappropriate and irrational use of antimicrobial agents against diseases and it led to increase in occurrence of antimicrobial resistance

Objectives: Evaluation of knowledge, attitude and practice of antibiotic use along with antibiotic policy and antibiogram among residents.

Materials and Methods: A cross-sectional survey was being carried out among resident doctors of a tertiary care hospital in Pune. In the questionnaire 13, 6 and 4 questions were of knowledge; attitude and practice respectively questions were designed to assess knowledge of specific antibiotic use along with antibiotic policy and antibiogram among residents. For each correct multiple choice question (MCQ) score of 1 was given and each incorrect or unanswered MCQ was given 0 mark. The percentage marks obtained were calculated and were classified as grades using Indian institute of technology grading system.

Results: The study showed that percentage of the resident doctors got the grades 0% (outstanding), 5% (excellent), 8.3% (very good), 8.3% (good), 13.5% (above average), 38.5 (Pass) and 26.6% (fail). 75% resident agreed that antibiotic policy is useful in empirical selection of antibiotics whereas 66.6% of resident agreed that antibiogram is helpful in tracking resistance trends in infections. 58.33% of resident responded that junior doctors should have access medical representative. Only 58.3% of resident have knowledge that their hospital has its own antibiotic policy.

Conclusion: This study demonstrated that knowledge and attitude towards antibiotic use along with antibiotic policy and antibiogram among residents is gradually improving but suitable educational interventions will pace in improving the antimicrobial prescribing, to maximize their effective and efficient use and minimize the development of resistance, proper guidance regarding hospital antibiotic policy, antibiogram and actual knowledge about the pharmacology of antimicrobial agents is required.

Keywords: antibiotic policy, antibiogram, Knowledge
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Abstract:

Introduction: The Antibiotic Stewardship, Prevention of Infection and Control (ASPIC) programme was initiated by Indian Council Of Medical Research (ICMR) in 2012, to initiate antibiotic stewardship and to strengthen infection control practices. Antimicrobial stewardship program (AMSP) was initiated at our tertiary care hospital in 2018 under the auspices of ICMR. Antimicrobial consumption data collected during 2018-2019 from inpatients of department of general medicine for antimicrobial surveillance is presented.

Methodology: This AMSP project was aimed at assessing the knowledge and practices regarding use of reserve antimicrobials in intensive care units and wards.

Antimicrobial surveillance was done at 2 ICUs and 12 wards using antibiotic consumption metrics, DDD (Defined Daily Dose) and DOT (Days of Therapy), which are standardized methods for measurement of antibiotic use. DDD was estimated for eight reserve antimicrobials (6 carbapenems, colistin and polymyxin) for bacterial infections and 9 antifungals in the surveillance project.

Results: The antimicrobial consumption data was collected from September 2018-August 2019 in 15,055 follow up encounters. DDD Index and DOT were calculated on monthly basis for antibacterial and antifungals separately. Among the antibacterials, highest consumption was recorded for meropenem followed by colistin. DDD index of meropenem ranged from 101.2g to 274.5g and DOT from 7.8 to 17.1. Among the antifungals , highest consumption was recorded for oral fluconazole with DOT ranging from 2.18 to 8.25 followed by topical clotrimazole.

Conclusion: This study demonstrates that the prescription of meropenem among other reserve antimicrobials is increasing at an alarming rate. The prescription of any of the reserve antimicrobials should be discouraged as first choice, they should be encouraged to be used as alternatives except when they are the only preferred drugs. There is a strong need to develop antibiotic policies in institutions to prevent development of antimicrobial resistance.

Sub-Code-2744

Ref No: AKQLFsX0

Title: Antibacterial Resistance Pattern In A Tertiary Care Hospital.

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Abstract:

Aim: Antibacterial resistance is the ability of a bacterium to survive and reproduce in the presence of antibacterial doses that were previously thought effective against them. Bactericidal agents like Amoxicillin kills bacteria by inhibiting cell wall synthesis. Bacteriostatic agents like
Aminoglycosides, Tetracycline and Macrolide inhibit protein synthesis in bacteria. Therefore only inhibit the growth of bacteria. This study was undertaken to compare the resistance pattern of bactericidal versus bacteriostatic agent. Also different measures which are useful for prevention of drug resistance, questionnaire based was assessed.

Objective: To study antibacterial culture sensitivity reports in tertiary care hospital.

To identify antibacterial resistance pattern age wise, gender wise, talukawise, indoor versus outdoor patient, and route wise.

To compare drug resistant pattern of bactericidal versus bacteriostatic in tertiary care hospital

Materials & Methods: Cross sectional, prospective observational study carried out at B.J. Government medical college, Pune. Patients enrolled for culture and sensitivity reports, their details are recorded and analyzed.

Results: Among 200 observed cases 42.26% was male, and 43.75% was female. Antibacterial resistance found to be 27.52% in bacteriostatic agents and 40% in bactericidal agents. Antibacterial resistance found to be 65% inpatients and 23% in outpatients. Antibacterial resistance found to be highest in age group of 50-60 years having 52% resistance and lowest in 20-30 years having 33%. Antibacterial resistance found to be highest in Junnar (70%) followed Daund (58%) and least resistance was found in Khed(35%).

Conclusion: The bacterial resistance is more common to bactericidal agents(40%) as compared to bacteriostatic agents(27.52%).

Sub-Code-2745

Ref No: FHb9S9ia

Title: Price variation and non-availability of essential anticancer drugs in India: A pilot study.

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Abstract:

Introduction: Essential medicines are supposed to be available at all times. Anticancer drugs form an important part of the National list of Essential Medicines (NLEM) of India, especially at tertiary health care centres. The objective of the present study was to assess the price variation between various anticancer drug formulations listed in the NLEM 2015 and information provided about these in leading drug information sources.

Methods: This pilot study was done on anticancer drugs listed in NLEM 2015. We assessed the information given in commonly used drug information sources in India - Current Index of Medical Specialties (CIMS) and Drug Update (DU) to assess the price of different formulations. Highest and lowest prices were noted for a particular formulation and the percentage variation was calculated. We also looked for the variation in the NLEM 2015 and
National formulary of India (NFI) 2016 with respect to the listing of different anticancer formulations.

Results: A total of 40 anticancer drugs and their 68 formulations were identified in the NLEM 2015. A large variation exists in the prices of different formulations (0% to 751%). Thirteen formulations had price variation of double or more than double. Ten formulations had no information regarding their price while 5 had only single strength mentioned. Notably, Tab Cyclophosphamide 200 mg and Inj. Oxaliplatin 50 mg/ml are mentioned in both NLEM 2015 and NFI but were not mentioned in CIMS and DU. Tab Melphalan (2 mg, 5 mg) and Cap Temozolamide (20 mg, 100 mg and 250 mg) showed maximum price variation. Information regarding important drug for breast cancer - Inj. Trastuzumab 440 mg/50 ml was altogether lacking in CIMS and DU.

Conclusion: A large price variation exists amongst different anticancer drug formulations mentioned in the NLEM. Government must take appropriate steps to ensure the easy availability and institute measures to make them more affordable.

Sub-Code-2746

Ref No: VtCRrfS8

Title: Cost of treating bacterial infections in India: A cost minimization analysis to highlight variations

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Abstract:

Background: Cost of drug therapy is a major concern in India which is compounded by the availability of multiple brands. To provide cheaper generic medicines, government has launched a "Jan Aushadhi" scheme. This cost minimization analysis assessed cost of drug regimens for bacterial infections and variations in costs depending on generic or branded prescribing.

Methodology: Multiple regimens recommended for common bacterial infections like dysentery, typhoid, cholera, pneumonia, meningitis, cellulitis, pharyngitis, cystitis, osteomyelitis, otitis media etc. were noted from the national guidelines for antimicrobial use in India. The unit prices of the antibacterial formulations available under the generic scheme were noted and the median, maximum, minimum prices were calculated from the list of available brands obtained from a recognised commercial drug directory (CIMS). Assuming similar expected outcomes, total costs of therapy with different prices were calculated for each regimen. Cost variations between regimens and in generic and branded therapy were analysed.

Results: Out of the 41 regimens analysed, the cheapest is for treating cholera (INR 3.48 - generic, INR 8.7 - median branded prescription) whereas the costliest is for infective endocarditis (INR 3912 - generic, INR 11823.84 - median branded prescription). More than 500 brands were found available for drugs like cefixime, azithromycin and ciprofloxacin. Significant variations in cost of treatment were found for most of the regimens; branded therapy was more than 3 times costlier than generic therapy in 63.4% regimens. Cost
variations of more than 100 % between maximum and minimum priced brands were seen in 70.7 % regimens, with variation of more than 1000 % seen in 33% regimens.

Conclusion: Significant variations exist in cost of therapy for bacterial infections depending on regimen chosen and type of prescribing, placing a direct burden on the patientâ€™s pocket. This should be considered by physicians with emphasis being on use of generic drugs.

Sub-Code-2747
Ref No: TbDiG3JF
Title: Prescribing practices in psoriasis among outpatients at a tertiary care center in central India
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Abstract:
Introduction: Psoriasis is a chronic papulosquamous, relapsing, non contagious, inflammatory disorder of the skin. Choice of therapy is determined by type and severity of presenting disease. There are multiple therapeutic options available for treatment; choice of regimens differs according to physiciansâ€™ and patientsâ€™ preference.
Material and methods: A cross-sectional study was conducted on outpatients of psoriasis presenting to the department of dermatology at AIIMS Bhopal. Demographic, disease and treatment details were captured from the prescriptions. Outcome measures included characterization of type, severity of psoriasis, common regimens in terms of drug classes and drugs prescribed with their route, dose, and frequency of administration seen. Microsoft Excel was used for data entry and analysis.
Results: A total of 100 patients were analyzed, majority being males (78 %), with a mean age of 37.9 Â± 15.19 years. Most common disease type was psoriasis vulgaris (68 %) followed by scalp (13 %), and palmoplantar psoriasis (7 %). Mean number of drugs prescribed for psoriasis per patient was 3.75 Â± 1.29, out of which clobetasol and salicylic acid constituted 18.6% of the total drugs, followed by vitamin D3 (15.2%), methotrexate (13.6%), additionally supplemented folic acid 13% and apremilast (3 %). Topical formulations comprised of 39.7% of the total drugs. In psoriasis vulgaris, topical clobetasol and salicylic acid, vitamin D3 and methotrexate were the most common drugs given.
Conclusion: Psoriasis vulgaris was the most common disease type seen, topical clobetasol and salicylic acid was the most commonly prescribed therapy, and Vitamin D and methotrexate being most common systemic drugs given. The prescribing pattern was as per existing guidelines for the type and severity of the disease presentation.
Title: Systematic review of intranasal oxytocin as a therapeutic option in treatment of post-traumatic stress disorder (PTSD).

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Abstract:

Introduction: In 50% persons with trauma, PTSD follows, which is classified in the category “Trauma and stressor related disorders” in DSM-5. Psychotherapy is the chief therapy for PTSD, and only two SSRIs, sertraline and paroxetine, have been approved by the US FDA for the treatment of PTSD. Various therapeutic targets are being explored for the treatment of PTSD including oxytocin.

Materials and methods: The internet was searched for clinical trials for use of intranasal oxytocin for prevention and treatment of PTSD. Fourteen clinical studies were found enrolling 1014 participants, of which all are DB and PC, 07 are FMRI studies, 11 are randomized and 04 CO trials. Of the total participants enrolled 7.29% were healthy subjects, 26.43% were PTSD cases, 16.86% were trauma cases and 49.4% were trauma exposed controls. Intranasal oxytocin was administered as a single dose either 24 IU or 40 IUs. In one clinical trial enrolling 120 participants oxytocin has been given in dose 40 IU twice daily for 08 days, and in other enrolling 220 participants 40 IU single daily dose for 7.5 days.

Results: Intranasal oxytocin single dose nasal spray has been found to have adjuvant role in treatment of fear disorders. It decreases PTSD and symptoms of depression and persons on oxytocin perform better than on placebo. In 447 patients with trauma on repeated intranasal oxytocin was found to be a safe and effective method to prevent PTSD. In fMRI studies oxytocin decreased left amygdale ventrolateral prefrontal cortex (vlPFC) functional connectivity (FC) after trauma in contrast to increase with placebo, and increase left thalamic activity during extinction in all patients. It also increased neuronal response in striatum, dorsal anterior cingulated cortex (dACC), and anterior insula (AI) activity during social reward in PTSD.

Conclusions: Intranasal oxytocin has promising results in small sample studies for prevention and treatment PTSD and depression.
Abstract:

Background: Rational Use of Drugs (RUD) is based on the Rule of Right that means right drug to the right patient, in right dosage at right cost with right documentation.

If drugs are not prescribed or used rationally it leads to serious risks as well as financial burden to the patient.

Resident doctors are the future practitioners hence this study is aimed to assess the knowledge, attitude & practice of RUD among second year resident doctors at a tertiary care teaching hospital as they are more involved in prescribing the drugs in daily OPD than first & final year resident doctors.

Methods-It is a questionnaire based study carried out among second year resident doctors at a tertiary care hospital. Sample size of 48 was calculated using Open Epi software. A pre-validated questionnaire was distributed via google forms online & results were analysed using MS Excel.

Results- Response rate was 91.66%. More than 50% second year resident doctors had the knowledge of RUD & Essential Medicine. 59.5% of them agreed that RUD enhances better patient care & more than 90% were interested in training of RUD. Though more than 90% of them prescribed essential medicines, only 16.7% had their personal drug list.

Conclusions- Most of the second year resident doctors (>50%) had basic knowledge regarding RUD & had positive attitude towards taking part in training of RUD, but there was inadequate practice of RUD among them.

This poor practice of RUD is a matter of concern & there is need of starting the training of RUD for serving better patient care.

Keywords- Personal drug, essential medicine, medical practitioners.

Sub-Code-2750

Ref no-EpZMTEbU

Title: Knowledge, Attitude and Practice (KAP) towards disposal of unused and expired medications an assessment among patients

Author name: Satyajit Mohapatra

1Satyajit Mohapatra, 2Sangeetha Raja, 3Jamuna Rani

R 1Professor, 2Assistant professor, 3Professor & HOD

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Abstract:

Introduction: Medicines play a very significant role for treating many diseases but at the end of the treatment it is very important to properly dispose them. Therefore the knowledge and awareness of proper drug disposal are essential for safe environment; lack of this can lead to various problems like environmental pollutions subsequently health hazards directly or indirectly. Hence, the study was aimed to assess the knowledge, practice, and awareness towards disposal of unused/expired drugs among patient population.
Materials & Methods: This was a cross-sectional questionnaire-based study conducted in a tertiary care teaching hospital. About 399 participants were included in the study. The questionnaire consisted of three parts which included demography and questions related to knowledge and awareness of the drug disposal. The collected data was analyzed and expressed in percentage.

Results: A total of 399 participants have completed the survey which includes 49% males and 51% females. It was found that the commonest discarding pattern of the expired/ unused medicines was through household trash (63.3%). A total of 300 (75.1%) were aware of the significance of improper disposal. It was observed that the participants 20 (5%) had partial knowledge about proper drug disposal but there was a lack of practice 245 (61.4%) of safe disposal methods. About 253 (63.4%) of participants coveted to implement National Drug Take Back program.

Conclusion: This study aimed to create an awareness to bridge the lacunae between knowledge, practice of proper and environmental safe methods of disposing expired/ unused drugs among general population.

Key words: Knowledge, Attitude, Practice, Unused medications, Expired medications

Sub-Code-2751

RefNo:7wlV54Rn

Title: Factors influencing treatment failure among People Living with HIV/AIDS (PLWHA) on Second line Anti-Retroviral Drugs in an ART Centre: a retrospective cohort study

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Abstract:

Introduction: In resource-limited settings like India, escalating switch over to second line antiretroviral therapy has been a growing concern among people living with HIV and AIDS [PLWHA]. Treatment failure in PLWHA are mainly due to tolerability of first-line regimens, limited capacity to diagnose treatment failure and limited second line treatment options due to unavailability of drugs and high cost. The objectives of the present study were to, identify the determinants of â€œtreatment failureâ€• among the PLWHA at this ART Centre.

Material & Methods: It was a retrospective cohort study carried out in collaboration with Antiretroviral therapy centre (ART centre) of a tertiary care hospital. Data of ART naive patients from January 2008 till December 2016, who switched to second line ART was collected in a pre-designed validated case record form.
**Results:** Among 366 ART naive patients, 156 patient’s data [19.2%] was analyzed because 130 patients had toxicities, 75 cases were lost to follow and 5 patients died. A significant fall in CD4 cell count to less than 100 cell/cmm, was recorded. 46.67% of patients showed WHO Stage 4 clinical staging at the time of switch to 2nd line ART. 23.33% of these patients developed opportunistic infections at 2nd line switch.

**Conclusion:** Low baseline CD4 count, new clinical symptoms and opportunistic infections were found to be significant predictors of treatment failure. Proper and early monitoring of the ART programs, correct regimens with robust monitoring techniques will inhibit the progression of the HIV, prevent occurrence of new opportunistic infections and optimize adherence.

**Sub-Code-2752**

**Ref No:** 4cHLbbhp

**Title:** Ameliorative effect of EGCG involves the activation of GAP-43 and plasticity-related proteins in mitigating the Lead and Beta-amyloid peptide-induced toxicity in SH-SY5Y cells

**Author Name:** NEELIMAAyyalasomayajula

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**Abstract:**

Both developmental and epigenetic studies on Lead toxicity have reported a strong association of Lead with the development of Alzheimer’s disease. However, the basic intracellular mechanism involved is still unknown. In this context, based on literature support and from our previous findings on in vitro studies on Lead and beta amyloid peptide (APs) induced toxicity, we have investigated the intracellular mechanism to address the gravity of the combined toxicity and also the protective effect of Epigallo catechin-3 gallate (EGCG). EGCG, a major active component of Green tea and a known polyphenolic, antioxidant and anti chelating agent that reported to protect against the Lead induced toxicity. In this study, we focused on the effect of EGCG in mitigating the toxicity induced by different combinations of the Lead (Pb) and beta-amyloid peptides (APs) and tried to address the involvement of GAP-43 and PKC dependent growth regulation which further plays role in enhanced synaptic protein expression at the biochemical level. Our results indicated that GAP-43 levels were increased upon EGCG treatment, which further activated PKC levels by the calcium regulation which leads to the enhanced expression levels of synaptophysin. The findings suggest that, EGCG could protect against the combined Pb and APs induced damage.
by improving neuronal outgrowth and enhances mature synapse formation via calcium dependent PKC mediated caMKII/CREB signaling pathway.

Sub-Code-2753

Ref No: Bhj75mld

Title: Pharmacovigilance of Antiretroviral Drugs in B.P. Koirala Institute of Health Sciences

Author Name: Dr. Deependra Prasad Sarraf
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Abstract:

Background: Antiretroviral therapy (ART) is lifeline for patients living with HIV (PLHIV); however it has been associated with various adverse drug reactions (ADRs). The ADRs are likely to compromise the compliances to ART. With the primary objectives of estimating the prevalence of ADRs of ART, this study was conducted among PLHIV in Eastern Nepal.

Methods and Materials: A prospective cohort study was conducted among 496 PLHIV at B.P. Koirala Institute of Health Sciences, Dharan, Nepal for a period of one year. ADRs were evaluated based upon clinical history followed by standard clinical examination and investigations. Descriptive statistics parameters mean, SD, frequency and percentage were calculated for normally-distributed variables. Chi-square test was used for analyzing categorical data and Student’s t tests for non-categorical data at P-value < 0.05. All statistical calculations were performed using SPSS version 11.5.

Results: Majority of PLHIV (58.1%) were of 31-45 year age group with almost equal gender distribution. Half of the patients (258, 52.02%) were on TDF-3TC-EFV followed by AZT-3TC-EFV (89, 17.94%) and AZT-3TC-NVP (86, 17.34%). Total of 240 ADRs were suspected. One hundred and seventy two (34.7%) patients experienced at least one ADR. Skin rash, anemia and nausea and vomiting were top three common ADRs. The ADRs were statistically significant with patients having non-communicable diseases, chronic co-infections, patients on multiple drugs other than ART, second and third line ART regimen. Modification of ART was demanded among 68 (13.7%) PLHIV.

Conclusions: One third of patients on ART experienced ADR. NCDs, chronic co-infections and polypharmacy were identified as risk factor for occurrence of ADR among PLHIV with ART.

Keywords: Adverse drug reactions; Antiretroviral Therapy; Pharmacovigilance
Title: Protective effect of alpha lipoic acid and omega-3 fatty acids against Cyclophosphamide induced ovarian toxicity in rats

Author Name: Usha rani

Abstract: Cyclophosphamide carries an inevitable and unfortunate risk of reproductive toxicity by inducing oxidative damage leading to depletion of ovarian reserve and subsequent infertility. The present study was conducted to investigate the effect of two antioxidants: Alpha Lipoic acid and Omega-3 fatty acids (fish oil) in the prevention of cyclophosphamide-induced oxidative damage on ovarian follicles. The experimental animals were divided into six groups: Groups I, II, III, IV, V and group VI (n=6 in each) served as normal control, cyclophosphamide induced control (75 mg/kg i.p once a week), alpha lipoic acid treatment group (25 mg/kg p.o daily), omega 3 fatty acids treatment group (400 mg/kg p.o daily), combined treatment group of alpha lipoic acid + omega 3 fatty acid (25 mg/kg p.o + 400 mg/kg p.o daily) and standard drug GnRH agonist (Triptorelin-Decapeptyl®; 2.5 µg/kg s.c daily) treated groups, respectively. Regularity in oestrous cycle was monitored by vaginal cytology. The experiment was performed for a period of 30 days, after which the animals were humanely sacrificed. The blood samples of the animals were subjected to hormonal analysis and the ovarian tissue samples were subjected to histopathology, follicle quantification, immunohistochemistry for Bcl-2 antibody, antioxidant status, cytokine (TNF-alpha) and transmission electron microscopic analysis. Based on the analysis of the above parameters, it was observed that the groups treated with alpha lipoic acid, omega 3 fatty acids and combination of both demonstrated a potential protective effect on cyclophosphamide-induced ovarian toxicity by normalizing the hormonal levels, upregulating the antioxidant status and improving the structural and functional physiology of the ovarian follicles. The group treated with standard drug (GnRH agonist) was also successful in preventing the toxicity, however it significantly reduced the number of ovarian follicles and irregularized the
hormonal profile and oestrous cycle. Thus, the present study supports the dietary supplementation of *alpha* lipoic acid and fish oil in the subjects receiving cyclophosphamide with the intention of preserving the fertility.
Sub-Code-2801

Ref No: kwYn1cTG

Title: Cellular and molecular mechanisms of burn injury induced chronic pain

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Abstract:

Burn injuries are among the most prevalent and burdensome critical care problems. The pain after burn injury arises mainly due to direct stimulation of nociceptors present in the peripheral and central nervous system. Here we have discussed the potential targets involved in burn injury and their role in the mediation of chronic pain. Neuroinflammation is found to be critically involved in pain sensitization and transmission in burn injury. Burn injury leads to the activation of microglia throughout the nervous system, which further releases pain mediators such as TNF-Î±, IL-1Î², IL-6, and BDNF. These mediators further cause central sensitization followed by increased pain transmission and responsiveness behavior in patients. Transient Receptor Potential Vanilloid 1 (TRPV1) are the nociceptors involved in sensing heat stimuli and are found to be sensitized and activated after burn injury and contributes to the thermal hyperalgesia. Several lipid mediators are released after burn injury which activates nociceptors present in primary and secondary sensory neurons. TRPA1 is found to be co-expressed with TRPV1 in nociceptive primary afferent C-fibers and is activated by bradykinin a chemical mediator that get released after burn injury. Thermal injury produces tactile allodynia which is negotiated by spinal p38 mitogen-activated protein kinase (MAPK) activation. This MAPKs signaling results in increased neuronal excitability followed by enhanced pain transmission. After burn injury, two important neuropeptides substance P (SP) and calcitonin gene-related peptide (CGRP) are released from nociceptive nerve endings. These neuropeptides are responsible for the maintenance of burn pain and causes spreading of edema. We have also described the role of Nav1.7 channel in the development and maintenance of burn pain. This will help in identifying the several key pathophysiological mediators of burn injury which can be explored for the establishment of novel pharmacotherapeutic interventions for the management of burn pain.

Sub-Code-2802

Ref No: MByiBiR4

Title: Effect of atorvastatin and metformin combination therapy in type 2 diabetic dyslipidemias.

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Abstract:

Introduction: Dyslipidemia is a major risk factor for cardiovascular complications in patients with type-2 diabetes mellitus and affects 10%-73% of this population. In type 2 diabetes mellitus, increased efflux of free fatty acids from adipose tissue and impaired insulin mediated skeletal muscle uptake of free fatty acids, increases fatty acid flux to the liver and also decreased glucose utilization in muscle that leads to acute elevation of free fatty acids. Lipid profile which is altered in diabetes state is one of the significant factors in development of cardiovascular diseases. The derangements seen in serum lipid profile includes: increased total cholesterol(TC), triglycerides(TG) and low-density lipoprotein(LDL) and decreased high-density lipoprotein cholesterol (HDL) concentration. Hence with the aforementioned views the present study had been planned to evaluate the effect of atorvastatin and metformin combination therapy in type 2 diabetic dyslipidemias.

Methodology: study design: observational prospective study, with duration of 3 months and sample size of 30 patients with type 2 diabetes mellitus are taken with mild to moderate dyslipidemias. The study subjects received combination therapy of metformin 500mg/day along with atorvastatin 20mg/day, there effect is seen on serum lipid profile and fasting blood glucose levels(FBS).

Results: There was a significant mean decrease in TC, LDL , TG , FBS by 31.7mg/dl(p<0.05), 28.5 mg/dl (p value<0.05), 19.5mg/dl(p<0.05), 9.13mg/dl(p<0.05) respectively and rise in HDL by 1.7mg/dl(p<0.05) ), no significant decrease in VLDL(p>0.05).

Conclusion: combination of atorvastatin and metformin was effective in reduction of TC,LDL,TG and FBS and elevation of HDL levels in type 2 diabetic dyslipidemias.

Key words: dyslipidemias, type2 diabetes mellitus, atorvastatin, metformin, lipid profile, fasting blood glucose.

Sub-Code-2803

Ref No: nfy3xqQ4

Title: A comparative study of Phenytoin plus clobazam combination versus Phenytoin alone on efficacy and quality of life in generalized tonic clonic seizure patients.

Author Name: Dr. Ranjana Sharma Co-Author

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Abstract:

Introduction: Epilepsy is a common neurological abnormality affecting about 2-5% of world population. Worldwide prevalence rate ranges from 4-5 per 1000 population while in Indian population prevalence rate ranges b/w 4.16 to 7.02 per 1000 population. Therefore the present study was planned to compare the efficacy and effect on quality of life between Phenytoin plus clobazam and phenytoin alone in generalized tonic clonic seizure patients.
Material & Methods: Randomized, comparative, prospective and open label study was conducted on total 70 patients of generalized tonic clonic seizure attending neurology OPD at Gajra Raja Medical College, Gwalior (M.P.). 40 patients out of 70 received Phenytoin plus clobazam and rest 30 patients received Phenytoin alone for a period of 3 months. Evaluation of efficacy was done by reduction in seizure frequency and for quality of life assessment epilepsy seizure inventory (ESI-55) was used.

Results: In our study Phenytoin plus clobazam and phenytoin alone group showed 56.23% and 47.42% reduction in mean seizure frequency respectively after 3 months as compare to baseline and was found statistically significant (p<0.05). For quality of life assessment, mean score for each 4 question asked were improved after 3 month in both groups and Statistically significant difference was seen in both groups as compare to baseline score (p<0.05).

Conclusion: We concluded that by addition of clobazam with Phenytoin is more effective therapy and provide better outcome in improving quality of life of epileptic patients as compared to Phenytoin alone.

Key words: Phenytoin, clobazam, quality of life, ESI-55

Sub-Code-2804

Ref No: c0JDXUww

Title: Neuroprotective effects of remote ischemic post conditioning against cerebral ischemic injury: Role of NR2B receptor

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Abstract:
The remote ischemic post conditioning (RIPoC) has been proven to elicit neuroprotection against ischemia-reperfusion injury. However in spite of compelling evidences of neuroprotection with RIPoC; the molecular mechanism of RIPoC mediated neuroprotection against ischemia-reperfusion injury is still mired and elusive. Cerebral ischemia-reperfusion (I/R) injury known to occur after reperfusion can also cause neurodegenerative abnormalities due to excitotoxicity via over activation of N-methyl D-aspartate-Receptor (NMDA-R). In recent past, differential role of NMDA receptor, i.e NR2A, and NR2B subunits have been suggested. However, the role of NR2B and PI3K-Akt in NMDA-R subtype mediated neuroprotection is still unknown. In this perspective, this study was aimed to elucidate the molecular link of RIPoC mediated neuroprotection against ischemia-reperfusion injury.

Materials and methods: To induce I/R injury, healthy male Wistar rats were subjected to bilateral common carotid artery occlusion (BCCAO). Following cerebral I/R injury, RIPoC was induced by subjecting the animals to three cycles of 10 min ischemia and 10 min reperfusion supplied to a distant organ, in this case, the bilateral femoral artery. To test the molecular mechanism, rats were treated with NR2B agonist: Quinolinic acid (QA), antagonist: Ifenprodil (IFN) and PI3K-Akt inhibitor: LY-294002, prior to I/R injury, followed by RIPoC. Further a series of behavioral, biochemical and histological analysis were performed.

Results: I/R injury achieved by BCCAO resulted in significant neurological deficits and motor abnormalities, increased oxidative stress as evidenced by increased levels of malonyl dialdehyde (MDA), nitrite and reduced levels of anti-oxidants (glutathione and superoxide dismutase) along with elevation of neuro-inflammatory cytokines such as Tumor necrosis factor- Î± (TNF-Î±) and Interleukin-6 (IL-6). However, RIPoC attenuated I/R injury, oxidative stress, cytokines level and significantly improved cognitive and neurological deficits. Administration of NR2B agonist -QA
diminish the beneficial effect of RIPoC while administering IFN improved neuroprotective effect. On the other hand, no improvement was observed in the presence of LY-294002.

**Conclusion:** The current study provides the basic evidence that effective suppression of NR2B alone via RIPoC might account for reducing cerebral I/R injury-induced excitotoxicity and neurodegeneration.

**Sub-Code-2805**

Ref No: Xdia3djE

**Title:** Review of intravenous anti-D as a new approach for the management of Dengue fever - a possibility!!!

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**Abstract:**

**Introduction:** Dengue fever (DF)/Severe DF (SDF) and dengue hemorrhagic fever (DHF) are caused by genus Flavivirus. It is characterized by hemorrhagic manifestations, thrombocytopenia and an increased vascular permeability. Studies have shown anti-platelet antibodies being involved in peripheral platelet destruction.

Anti-D immune globulin produces FcÎ³ receptor blockade thus preventing opsonization of platelets, reducing their immune destruction and in raising the platelet count in non-dengue forms of immune thrombocytopenia purpura.

Anti-D is low in cost when compared with IV immunoglobulin. Intravenous anti-D has also been tried in patients with DF for improving thrombocytopenia.

**Methods:** Available studies regarding the use of anti-D in DHF were reviewed from Google Scholar & Pubmed in 2019. All the three studies have used IV anti D to treat thrombocytopenia due to Dengue.

**Results:** Fig 1: Pannu AK et al. mentioned that the rise in platelet count was significantly high in the intervention group at 24, 36, and 48 h.

Fig 2: Juneja D et al. in the Case series of 8 patients with SDF showed remarkable improvement after IV anti D.

Fig 3: De Castro et al. study showed mean maximum platelet count in adults and children with severe thrombocytopenia within 48 hours of study drug administration was more in the anti-D arm as compared to the placebo group.

**Conclusion:** IV anti-D might prove to be a safe and viable therapeutic option in the management of patients with DF. The only limitations is the side effect reported as clinically insignificant drop in hemoglobin.
Intravenous Tramadol versus Nalbuphine for peri-operative pain and stress management in elective vaginal hysterectomy

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Abstract:

Background and Objective: Post-operative pain and stress management has long been challenging and still remains a cause of concern. Many different analgesics have been tried with varying effectiveness. More recently Nalbuphine & Tramadol used as an adjuvant to anaesthetic drugs. This study aims to compare the efficacy of IV Tramadol versus IV Nalbuphine in controlling peri-operative pain and stress management for elective vaginal hysterectomy.

Material and Method: Fifty adult patients aged 30-50yrs undergoing elective vaginal hysterectomy under spinal anaesthesia were included in this single blind randomized control trial study, with 25 in each group. Patients with gross co-morbidities were excluded. Group T received IV Tramadol 0.5 mg/kg-0.7mg/kg and Group N received IV Nalbuphine 0.1mg/kg-0.2mg/kg after 1hour of spinal block. Additional IV Midazolam 0.01-0.05mg/kg administered for sedation in the first hour. IV Diclofenac Sodium used as rescue analgesia. Pain score, sedation score, stress score and rescue analgesic requirement were compared between both groups over post-operative 12 hours.

Results: Pain and stress scores were significantly lower, whereas sedation was higher in Group N. Also rescue analgesic requirement was lower in Group N. Further GI complications were markedly reduce in Group N.

Conclusion: IV Nalbuphine is more effective and better option than Tramadol for perioperative pain and stress management.

Anti-ulcer effect of Sodium cromoglycate in NSAID and ethanol induced ulcer in comparison with ranitidine in rats

Author name-Dr M.R. Sravani

Abstract:

Background: Peptic ulcer disease is a break in the lining of the stomach, first part of the small intestine, or occasionally the lower esophagus. There are many anti-ulcer agents like H2-receptor antagonists, Proton pump inhibitors to alleviate the symptoms of peptic ulcer disease. Though these medications considered to be safe, some of the recent studies have
shown that role of Proton pump inhibitors in aggravating myocardial infarction and other cardiac ailments. Therefore search for a new potent, safe and nontoxic drug continues.

Materials and Methods: This animal study was a cross sectional, observational in nature carried out in male Wistar rats. Animals were divided into four groups with six animals in each group. GROUP 1: Standard drug Ranitidine in Aspirin induced ulcer. GROUP 2: Test drug Sodium Cromoglycate in Aspirin induced ulcer. GROUP 3: Ranitidine in Ethanol induced ulcer. GROUP 4: Sodium Cromoglycate in Ethanol induced ulcer. Parameters like number of ulcers, severity of ulcers and Ulcer Index was calculated.

Results: In the present study. Mean number of ulcers with Group I is 3.16 + 3.44, in Group II is 4.83 + 2.32, (p<0.05). In Group III is 2.33 + 2.72 and in Group IV is 3.83 + 2.32, (p<0.05) is statistically significant. Mean Grade of Severity of ulcers in Group I is 1.13 + 1.12, in Group II is 1.72 + 0.12, (p<0.05). In Group III is 1.01 + 1.06 and in Group IV is 1.50 + 0.18, (p<0.05). Is statistically significant. Ulcer index in Group I â€“ 12.62, Group II â€“ 16.55, Group III â€“11.67 and in Group IV-15.33.

Conclusion: Cromoglycate is an effective agent in ulcer healing, in Ethanol induced and NSAID induced ulcers in rats but is less compared to that of Standard drug Ranitidine.

Keywords: Peptic ulcer, NSAID induced ulcer, Ethanol Induced ulcer, Sodium Cromoglyc late, Ulcer index

Sub-Code-2808

Ref No: qFRuAKN8

Title: Comparison of effects of antidepressants on cognition and psychomotor functioning in patients of major depressive disorders in Tertiary Care Hospital in Haryana

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Abstract:

Background: Impairment of cognition, psychomotor functions are commonly reported in individuals with major depressive disorders. The aim of the study was to compare the effect of fluoxetine, venlafaxine, and mirtazapine on cognitive & psychomotor functions in patients of major depressive disorders.

Material & Methods: 30 patients of age between 18-69 years of either sex were randomly allocated to receive either fluoxetine (20-40mg), venlafaxine (75-150mg) or mirtazapine (15-30mg). Cognitive and Psychomotor assessment was done t the day of enrolment and at the end of 3rd, 6th, 9th, 12th week of treatment with the help of Montreal Cognition Assessment (MoCA), Six Letter Cancelation Test (SLCT) and Digit Symbol Substitution Test (DSST).
Results: In Group fluoxetine, scores of MoCA at the day of enrolment, 6th and 12th week were 16.4±2.79, 21.1±2.51, 24.3±2.40 respectively. While scores of SCLT were 22.4±13.06, 25.8±12.16, 28.2±11.62 respectively and the scores of DSST were 16.5±6.77, 22.5±6.09, 27.2±9.51 respectively.

Similarly, in Group venlafaxine scores of MoCA at the day of enrolment, 6th and 12th week were 17±2.66, 20.6±3.02, 24.5±2.01 respectively. While scores of SCLT were 14.9±5.19, 19.8±3.67, 25.1±4.09 respectively and the scores of DSST were 18.1±8.07, 21.8±7.65, 25.5±8.57 respectively.

In Group mirtazapine, scores of MoCA at the day of enrolment, 6th and 12th week were 15.7±2.90, 21.1±2.28, 24.6±2.45 respectively. While scores of SCLT were 19.4±8.89, 25.6±7.73, 29.4±6.70 respectively and the scores of DSST were 14.2±5.65, 20.4±6.25, 27±8.02 respectively.

Our results showed that in all the three groups there was improvement from the baseline scores. But on intragroup comparisons it was seen that there was no statistically significant difference in the improvement.

Conclusion: It was concluded that all the groups showed good efficacy in Major Depressive Disorders along with the improvement in cognition and psychomotor functions.

Sub-Code-2809

Ref No: dbCXvsEt

Title: Evaluation of efficacy of Vitamin B Complex and Vitamin E as an add-on therapy to Diclofenac in the patients of primary osteoarthritis of knee

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Jasmine Kaur1, 1 2nd yr Post Graduate student, Department of Pharmacology

Abstract:

Background:

Osteoarthritis (OA), the most common form of joint disease, is chiefly a disease of aging. Ninety percent of all people have radiographic features of osteoarthritis in weight-bearing joints by age forty. The aim of the study was to evaluate the efficacy of vitamin B complex and vitamin E as an add-on therapy to diclofenac in the patients of primary osteoarthritis of knee. It is an open label, randomized, comparative clinical study.

Methods:

48 patients of age > 40 yrs with primary osteoarthritis attending orthopaedics OPD were randomly allocated to three groups - Group D received tablet diclofenac 75 mg once daily, Group B received tablet vitamin B complex along with diclofenac and Group E 200 mg received capsule vitamin E along with diclofenac. Clinical assessment was done at baseline and after 4 weeks. Parameters for assessment were visual analogue scale (VAS) and Western Ontario and McMaster Universities osteoarthritis index questionnaire (WOMAC index).
Results:
In the study groups, at baseline, VAS was 6.95±0.86, 7.80±0.97, 7.25±0.92 and after 4 weeks was 3.75 ± 0.95, 3.50±0.57 and 3.50 ± 0.50 in groups D, B and E respectively. In group D, at baseline WOMAC index was 46.9±13.0, 59.9±10.7, 51.4±10.9 and after 4 weeks was 23.0 ± 5.9, 23.5±5.3, 25.5 ± 8.9 in groups D, B and E respectively. On intragroup analysis, there was improvement in VAS and WOMAC index in all the groups but on intergroup analysis, clinically significant improvement (not statistically significant) was seen in group B.

Conclusion:
It was concluded that addition of vitamin B improves the clinical efficacy of NSAIDS but not seen with vitamin E. Hence addition of vitamin B to NSAIDS is hypothesized to be beneficial in osteoarthritis of knee.

Sub-Code-2810
Ref No: bmQvFu7p
Title: Neuroprotective role of Convolvulus pleuricaulis in cerebral ischemia reperfusion induced alteration in rats
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Abstract:
Objective: The present study analyse the neuroprotective role of Convolvulus pleuricaulis; enlisted as medhyarasayana in Indian system of Medicine, on acute cerebral ischemia reperfusion injury induced cerebral oxidative stress in rats
Materials and methods: Acute cerebral ischemia reperfusion technique was used to induce cerebral oxidative stress. Acute injury was induced by blocking bilateral common carotid arteries for 30 minutes and reperfusion for 45 minutes in Charles foster strain of albino rats. The current study examines the role of Convolvulus pleuricaulis in cerebral oxidant and antioxidant status. The biochemical parameters [lipid peroxidation, superoxide dismutase (SOD) activity & total tissue (T-SH)] were estimated to assess the neuroprotective potential of the given drug.
Result: Convolvulus pleuricaulis pre-treatment modified the cerebral insult induced biochemical parameters.
Conclusion:The results indicate that Convolvulus pleuricaulis may be useful in cerebral ischemia reperfusion injury
Sub-Code-2811
Ref No: N6bBwnRE
Title: Nano formulation and pre-clinical evaluation of Prednisolone for treatment of uveitis
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Abstract:
Uveitis is an inflammation of the middle coat of the eye, the Uvea. It consists of the middle layer of pigmented vascular structures of the eye and includes the iris, ciliary body, and choroid. This inflammation may cause sight threatening damage to the eye if left untreated for longer period. Uveitis holds the fifth place for most common cause of blindness in the developed countries and can cause visual loss of different grades. In India, in the year 2010, almost 8.5 million people were suffering from uveitis from a total population of 1,168 million people.
Formulation was prepared using chitosan and STPP, and was characterized for particle size, zeta potential, in vitro release, in vivo pharmacokinetics and ocular irritation test.
In present study, four groups of albino New Zealand rabbits (2-3Kg) were used, namely, Normal control, uveitis control, prednisolone acetate (1%) control (PAC) and Nano formulation control (NFC) containing 3 animals each. Normal and uveitis control did not receive any treatment while prednisolone acetate group was given 2-3 drops 4 times a day and Nano formulation control was given 2-3 drops once in the day. Uveitis was induced by intravitreal injection of LPS (100ppm) and was evaluated after 24 hours for uveitis score. After 48 hours of treatment, aqueous humour was extracted and was evaluated for TNF-Î±, IL-6 and total protein.
Results: Nano formulation passed the ocular irritation test. The release and penetration of nano formulation was found to be more than the marketed and pure drug. The levels of TNF-Î±, IL-6 and total protein were found to be less in the nano formulation control group when compared with uveitis control and the PAC group.

Sub-Code-2812
Ref No: 9QHmuju0
Title: Nootropic effect of Ethanolic extract of Asparagus Racemosus in scopolamine induced Amnesia in rat model.
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Abstract:

Introduction: Cognitive disorders like Dementia and Alzheimer’s are mental health disorders that are progressive in nature that causes impairment in learning, memory, perception, intelligence etc that affects our day to day life.

Objective: The objective of this study is to examine the nootropic (that improves cognition) effects of ethanolic extract of Asparagus Racemosus, a well-known medhya rasayana in Indian system of medicine Ayurveda, in scopolamine (a muscarinic cholinergic antagonist) induced Amnesia in Charles Foster Albino Rat model.

Materials & Methods: Ethanolic extract of dried roots of Asparagus Racemosus (EAR) was prepared by incessant method with respected temperature. EAR at a dose of 50 and 100mg per kg BW was given Orally for 7 days. Scopalamine at a dose of 3mg/kg was injected i.p before giving EAR FOR 7 days.

Behavioural study was done by Morris Water Maze test and Elevated Plus Maze test. Asparagus Racemosus improved the performance in retained Elevated Plus Maze and Water Maze test.

Results: Asparagus racemosus pretreatment reverted scopolamine induced decline in cognitive skills such as learning and memory.

Conclusion: The results suggest that Asparagus Racemosus might be a useful nootropic agent in cognitive disorders. A. Racemosus may be attributed to their antioxidant, neuroprotective and cholinergic effects.

Sub-Code-2813

Ref No: Fx6PRbRm

Title: Enhanced central histaminergic transmission participates in stress induced anhedonia

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Abstract:

Anhedonia i.e. lack of interest in pleasure after stress is a common manifestation. It is reported that central histaminergic activity is elevated after acute or chronic restrain stress in rodents. However, the role of enhanced central histaminergic in the post stress induced Anhedonia is obscure. Therefore, the present study demonstrated the modulatory role of central histaminergic transmission in development of stress induced anhedonia in mice employing sucrose preference test (SPT). Results of the present investigation reveals that mice subjected to 24 hr restraint stress followed by water depriviation for 17h exhibits manifestations of anhedonia as evident from less sucrose intake in sucrose preference test (SPT) as compared to non-stressed animals. Central administration of histamine (0.1, 10 μg/mouse, i.c.v.), histamine neuronal releaser, thioperamide (H3 receptor antagonist) (2, 10μg/mouse, i.c.v.) or on i.p. treatment of histamine precursor L-Histidine (250 mg/kg, i.p.) during 1h and 23rd h of stress significantly further reduced the consumption of sucrose in mice as compared to aCSF treated stressed group,
indicating potentiation of post-stress induced anhedonia by central histaminergic transmission. In contrast, intracerebroventricular (i.c.v) administration of the H1 receptor agonist, FMPH (2, 6.5 µg/mouse, i.c.v.) increased while H2 receptor agonist, amphetamine (0.5 μg/mouse, i.c.v.) during the stress further reduced the sucrose consumption as compared to aCSF treated stressed group. Taking together the outcome of the above experiments it is hypothesized that central histaminergic system might contribute the post-stress induced anhedonia via postsynaptic H2 receptor stimulation while stimulation of central H1 receptor might be a novel target for the management stress induced anhedonia.

**Sub-Code-2814**

**Ref No:** MMDvMXlv

**Title:** Chronic Nicotine withdrawal induced anxiety: Modulation by central histaminergic transmission

**Author Name:** Varsha Yadav, Deepak Patel, Richa Patel and Nishant S. Jain*

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**Abstract:**

The present study showed that the abrupt withdrawal from 12 days nicotine administration (2 mg/kg, i.p x 3) in mice significantly decreased the percent time spent light compartment and number of transition in light and dark (LAD) model as well as increased somatic signs (hyperactivity model) such as rearing, grooming, jumping, genital licking, leg licking, and head shakes indicating increased anxiety measures. The peak effect was observed at 24h post nicotine withdrawal. Plethora of reports has shown that the nicotine facilitates the release of histaminergic, which may be responsible for the nicotine evoked addiction or behavior effects. Therefore, the present study was designed to investigate the role of central histaminergic transmission on nicotine withdrawal induced anxiety related traits. The result of our study revealed that pre-treatment of lower dose histamine (0.1 μg/mouse, i.c.v.) attenuated whereas higher dose of histamine (50 μg/mouse, i.c.v.) further enhanced nicotine withdrawal induced anxiety observed at 24 h post chronic nicotine withdrawal in mice. Moreover, nicotine exposed animals pre-treated with L-histidine (250 mg/kg, i.p.) or histamine neuronal releaser, histamine H3 receptor antagonist, thioperamide (2, 10 μg /mouse, i.c.v.), exhibits higher anxiogenic effect in LAD model along with increased hyperactivity. Furthermore, i.c.v. prior administration of H1 receptor agonist, FMPH (2, 6.5 μg/mouse) failed, H1 receptor antagonist cetirizine (0.1 μg/mouse) reversed, H2 receptor agonist, amphetamine (0.1, 0.5 μg/mouse) further potentiated and H2 receptor antagonist, ranitidine (50 μg/mouse) attenuated the nicotine withdrawal induced anxiogenic like effects. Thus, central histaminergic activity might play a contributory role in exaggerating the chronic nicotine withdrawal induced anxiety via H2 receptor stimulation and H1 or H2 receptor antagonism could mitigate it.

**Sub-Code-2815**

**Ref No:** mIxTbhoW

**Title:** Evaluation of Anti-Inflammatory and Analgesic Activities of Thiophene Derivatives in Wistar Albino Rats
Author Name: Dr Deepika G

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Abstract:

Background: Pain and inflammation are disabling accompaniments of many medical illnesses. Medications to manage and treat pain and inflammation are steroidal and non-steroidal anti-inflammatory agents, opioids and adjuvant analgesics which contribute too many adverse effects. Thiophene group is being studied extensively for anti-inflammatory activity and they are a class of heterocyclic compounds that shows an array of biological activities. This study is to evaluate the anti-inflammatory and analgesic activity of Thiophene derivative i.e. Ethyl 3,5-diphenylthiophene-2-carboxylate (DP-10).

Materials and Methods: Rats were divided into 5 groups of 6 animals. The anti-inflammatory activity was studied with Carrageenan induced rat paw edema and Cotton pellet induced granuloma models. The analgesic activity evaluated using Eddyâ€™s hot plate and Acetic acid induced writhing model. The results were compared with dimethylsulfoxide (DMSO) -control, Ibuprofen (standard), Thiophene derivative (test) and combination drug therapy [Thiophene derivative (50 % of 20mg/kg) and Ibuprofen (50 % standard)].

Results: The overall P value was <0.05, indicating that there is significant difference among the groups included in the study with respect to the variable (mean paw edema volume, dry granuloma weight, reaction time and number of writhing with onset) considered in the study. In carrageenan induced rat paw edema and cotton pellet induced granuloma models DP-10 (10mg/kg) showed highest percent of inhibition of 42.48% & 47.7% respectively with ibuprofen as comparison. In eddyâ€™s hot plate model 98.28% inhibition was demonstrated by combination drug. DP-10 (10mg/kg) showed highest inhibition of 81.7% in Acetic acid induced writhing model.

Conclusion: Thiophene derivative, Ethyl 3,5-diphenylthiophene-2-carboxylate (DP-10) has significant Anti-inflammatory and Analgesic activity in acute and chronic animal models of inflammation and pain. The combination drug therapy was equally effective like Ibuprofen. In controlling inflammation, low dose of DP-10 has greater inhibition but in terms of pain high dose and combination drug therapy was effective in comparison.
Objectives: To compare the efficacy and cost effectiveness of topical fusidic acid and mupirocin in the treatment of impetigo.

Materials and Methods: This was a prospective study done on 100 patients of Impetigo, at Department of Pharmacology in collaboration with Department of Dermatology of Osmania General Hospital, Hyderabad after obtaining approval from Institutional Ethics Committee. The period of study is from August 2016 to July 2017. 100 patients fulfilling the inclusion criteria were randomly allocated to two groups â€“ Group I receiving topical Fusidic Acid 2% and Group II receiving topical Mupirocin 2% thrice daily for 1 week. At the end of first week a detailed clinical examination was performed. Scoring System of Impetigo (SSI), number of lesions and size of existing lesions were measured. The clinical outcome was graded as Mild to Moderate (SSI score 1 or 2 & presence of lesions), Good (SSI score 0 & no lesions).

Results: In Fusidic acid group; number of lesions (Mean±SD) declined from 4.24±1.17 to 0.24±0.82, wound area decreased from 3.24±0.95 to 0.34±1.18 and SSI decreased from 2.32±0.47 to 0.14±0.49. While in Mupirocin group; number of lesions declined from 4.16±1.11 to 0.14±0.70, wound area decreased from 3.45±1.14 to 0.17±0.85 and SSI decreased from 2.44±0.50 to 0.08±0.39.

Conclusion: At the end of first week, efficacy is 92% in Group I and 96% in Group II. There is no statistical significant difference between two groups (p>0.05). The cost incurred to treat one case successfully is less with fusidic acid (INR 46) as compared to mupirocin (INR 72) (Cost effectiveness). So fusidic acid is more cost effective than mupirocin.

Sub-Code-2817

Ref No: k3QPvVeu

Title: In vitro and in vivo evaluation of buccal mucoadhesive Prednisolone Sodium Phosphate gel in the treatment of arecoline induced oral submucous fibrosis in Wister albino rats.

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Abstract:

Background and objectives: Oral submucous fibrosis (OSMF) is a metabolic disorder of collagen in oral mucosa leading to severe trismus, which is commonly observed among habitual arecanut consumers. The prevailing treatment for OSMF with intralesinal steroidal injections is mostly invasive and patient non compliance. Hence, the present study is aimed to formulate steroidal oral mucoadhesive gels of prednisolone sodium phosphate (PSP) and to evaluate for various in vitro physicochemical parameters. The potent formulation from the PSP prepared gels is further subjected for in vivo evaluation to determine the therapeutic efficacy for OSMF treatment in rats.

Material and Methods: The formulations F1, F2 and F3 were prepared using 2, 2.5 and 3 % of carboxymethyl cellulose sodium, formulations F4, F5 and F6 were prepared using 2, 2.5 and 3
% of hydroxypropyl methylcellulose respectively and formulations F7, F8 and F9 were prepared using equal mixture of carboxymethyl cellulose sodium and hydroxypropyl methylcellulose in the concentrations of 1.1.25 and 1.50 % respectively. The prepared formulations were subjected for the screening of physicochemical parameters, viz. - homogeneity, grittiness, viscosity studies, spreadability, extrudability, mucoadhesive strength, pH, drug content uniformity, in vitro drug diffusion, IR spectral analysis and stability studies.

Results: Among the nine formulations prepared, the formulation F8 containing 1.25% carboxymethyl cellulose sodium, 1.25% hydroxypropyl methylcellulose showing a mucoadhesive strength of 12.500 ± 0.004 g and drug release of 85.920 ± 0.311 % was considered as the promising one and was further used for in vivo study.

Conclusion: On oral application of the gel for 4 months in arecoline induced oral submucous fibrosis rats, showed more than 50 % reduction in fibrosis minimizing the painful injuries and morbidities. The histopathological results supported these findings.

Keywords: Hydroxylpropyl methyl cellulose (HPMC, Mucoadhesion, oral submucous fibrosis (OSMF), prednisolone sodium phosphate (PSP), sodium carboxymethyl cellulose sodium (Na CMC).

Sub-Code-2818

Ref No: 9hcud3kHV

Title: Galangin pharmacologically modulates Cisplatin-induced nephrotoxicity by targeting MAPK pathway

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Abstract:

Cisplatin, a platinum compound though well-known for its wide chemotherapeutic effects, has limited clinical use in current therapeutics owing to its nephrotoxicity. Galangin (3, 5, 7-trihydroxyflavone) extracted from rhizome of Galangal is documented to possess anti-inflammatory and anti-oxidant properties. Hence, we evaluated the effect of galangin in cisplatin induced nephrotoxicity in an in vivo model of rat. Male Wistar rats weighing 150-200 grams were divided into 6 groups (n=6) i.e. normal, galangin (25, 50 and 100 mg/kg po oral), cisplatin-control and per se (100 mg/kg po galangin). Galangin was administrated for a period of 10 days. On 7th day, nephrotoxicity was induced by a single dose of cisplatin (8 mg/kg, intraperitoneally) in all groups except normal and per se group. On 11th day, rats were anaesthetized and blood was collected by direct heart puncture for estimation of various biochemical parameters. Rats were sacrificed on the same day and kidneys were isolated and preserved for evaluation of immuno -histochemical, histopathological, ultrastructural studies and western blot analysis. Cisplatin was observed to increase expression of pro-apoptotic proteins Bax and caspase-3 and decrease the expression of the anti-apoptotic protein Bcl-2. Also, it increased the oxidative stress and inflammation and caused renal dysfunction which was evident on histological and ultrastructural findings of renal tubular damage. It was found that 100 mg/kg oral dose of galangin suppressed oxidative stress, inflammation and the activation of apoptotic pathways and preserved renal function, along with its morphology. In the TUNEL assay there was decreased DNA fragmentation on galangin pre-treatment. The
100 mg/kg oral dose of galangin on pretreatment reduced the expression of NFκB and proteins in MAPK pathway i.e. p38, ERK1/2 and JNK. Galangin at oral dose of 100 mg/kg effectively ameliorated cisplatin.

**Sub-Code-2819**

Ref No: HQYoles7

**Title:** Synthesis, characterization and evaluation of anticancer activity of novel pyrazole derivatives

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**Abstract:**

**Objective:** To synthesize, characterize and evaluate the anticancer activity of novel pyrazole derivatives.

**Methodology:** A novel series of pyrazole derivatives were synthesized using an optimized synthetic route and characterized for various physicochemical properties. All the synthesized compounds were also identified and characterized using various spectroscopic techniques for example, 1H NMR, 13C NMR, Mass Spectrometry and IR Spectroscopy. The in vitro anticancer activity of the synthesized compounds was carried out against IMR-32 cell line using MTT assay. Doxorubicin was used as the standard.

**Results and Conclusion:** All the synthesized compounds were tested in a colorometric microassay based on the reduction of MTT [3-(4,5-dimethylthiazol-22-yi)-2,5-diphenyltetrazolium bromide] to formazan. The synthesized compounds were subjected for MTT assay against IMR-32 cell lines. When tested against IMR-32 cell line all the compounds exhibited very good in vitro activity. Compound MSB showed promising activity and found to be the most active compound in the series.

**Sub-Code-2820**

Ref No: WWFEHkeX

**Title:** Neuroprotective activity of Eugenol against Experimental Traumatic Brain Injury and the TLR4 Signaling Pathway as a Potential Mechanism

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**Abstract:**

Traumatic Brain Injury (TBI) is intricate damage with a wide range of symptoms and disabilities. TBI leads to the destruction of blood-brain barrier integrity and therefore results
in increased brain edema. Brain edema is a significant factor for increased intracranial pressure, which ultimately causes functional disability and death. TBI also initiates a cascade of innate immune responses that result in secondary neuronal loss and behavioral impairment. Toll-like receptor 4 (TLR4) plays a chief role in the innate immune responses mediated by TBI. Eugenol is a phytochemical compound with potent anti-inflammatory properties. The objective of this study is to investigate the effect of eugenol and its potential mechanism against the weight drop model of TBI. Male Sprague drawly rats were administered orally with Eugenol (100 mg/Kg) or vehicle for seven consecutive days. On the seventh day, rats were subjected to weight-drop contusion injury. Twenty-four hours post-injury, locomotor activity and motor coordination were estimated using actophotometer and rotarod, respectively. Lastly, animals were sacrificed, and the brains were isolated for determining blood-brain permeability, brain water content (edema), and histopathology. Thus, to study the interaction of eugenol with TLR4, docking studies were performed using the Surflexâ€“Dock module of SYBYLX software by using the crystal structure of hMD-2 (PDB ID: 2E59). Results show that the TBI induced an increase in the blood-brain barrier permeability and brain water content (edema) in rats. The TBI was also found to increase neuronal cell death indicated by augmented chromatolysis as well as impaired motor coordination and locomotor activity. Thus, eugenol pretreatment ameliorated the histopathological, neurochemical, and behavioral consequences of trauma. Insilco docking studies showed that the docking score of eugenol with TLR4 is 4.75. Thus eugenol is effective against traumatic brain injury. This neuroprotective effect of eugenol might be due to its inhibitory activity on TLR4.

Sub-Code-2821

Ref No: KEqcbmmx

Title: Development and Evaluation of Progression of Cardiometabolic Disorder in Rats:A Model Comparison Study

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Abstract:

Cardiometabolic disorders (CMets) encompass clustering of phenotype include obesity, hyperglycemia, dyslipidemia and hypertension as primary causative factors along with presence of inflammation, endothelial dysfunction as secondary factors. It is one of the leading causes of morbidity and mortality worldwide. From last decade several efforts have been made to understand the causes and pathophysiology of CMets, Rodents are widely used to mimic human diseases and to test potential therapeutic interventions. However few models have been successful to produce condition like CMets. Present study was carried out to produce well characterised CMets. Fructose, one of major culprit involved in development of CMetS. Here, different models were studied for 6 weeks by using fructose, methionine, high fructose diet (HFD) and high cholesterol diet (HCD) in male wistar rats that revealed that 20% fructose in drinking water only produced hyperglycemia (p<0.001) without altering other metabolic parameters. Whereas, 20% fructose along with Methionine (p.o.1g/kg) elevated serum glucose (p<0.001), lipid (p<0.001) and TG (p<0.001) levels. Elevated blood glucose level
after oral glucose load (p.o. 2g/kg) alongwith elevation in serum insulin level suggests insulin resistance. Invasive blood pressure measurement showed significantly elevated mean arterial pressure (MAP). Isolated aortic strips showed hampered Ach induced relaxation [EC50 control: 1.18 * 10^-7 Vs. 3.95 * 10^-5 (F+M)] compared to control strips. Other set of animals received HFD and HFD along with HCD. HFD. Serum analysis revealed that glucose and MAP (p<0.001) elevated significantly. Serum total cholesterol elevated (p<0.05) slightly, whereas other lipid derived components were unaltered. Addition of HCD with HFD significantly elevated metabolic and hemodynamic parameters. Data analysis revealed that addition of methionine with 20% fructose or addition of HCD with HFD can sufficiently produce CMets. However, discrepancies arise due to involvement of variables (e.g. lipid:sugar components (20-60%), source of fat and oils, intake of food) in diet induced models whereas 20% fructose in drinking water with methionine (p.o) provides better, reproducible and cost effective alternative to produce CMetS in animals.

Sub-Code-2822
Ref No: BdefvAEx
Title: Proteasome inhibition by MG132 exhibited beneficiary effect in diabetic muscle atrophy
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Abstract:

Purpose: Skeletal muscle is severely affected in diabetes leading to muscle atrophy. Earlier we have reported increased proteasome activity in the skeletal muscle of diabetic rats. Reports exist on the beneficiary effects of proteasome inhibition in diabetic nephropathy but not in diabetic muscle atrophy. Henceforth, in the current study, we examined the effect of a proteasome inhibitor MG132, on muscle atrophy in diabetic rats.

Methods: Diabetes was induced in rats by streptozotocin injection and MG132 was administered (50 Âµg/kg body weight/day; intraperitoneal) after two months of diabetes for two more months. Gastrocnemius muscle is collected after four months of experimental period for analysis. The cross-sectional area of myocytes was measured in Hematoxylin and Eosin stained muscle sections. Protein levels of ER stress markers, ubiquitin-proteasome system (UPS) components, and apoptosis were analysed by immunoblot. Proteasomal activity and apoptotic cells were measured.

Results: Decline in myotube cross sectional area due to diabetes is prevented by MG132 treatment. ER stress markers that are elevated in diabetes are decreased with MG132 treatment. MG132 also stopped diabetes-induced alterations in UPS (accumulation of ubiquitinated proteins, higher levels of muscle specific E3 ligases like MuRF1 and Fbx32 and increased proteasomal activity) with decreased TUNEL positive cells.

Conclusions: Results emphasized the beneficial potential of MG132 in diabetes muscle atrophy.
Keywords: Ubiquitin proteasome system, muscle wasting, diabetes, ER stress.

**Sub-Code-2823**

**Ref No:** s2SDT4mG

**Title:** Exploring the synergistic potential of PPAR-Î³ agonist and HDAC inhibitor on the reversal of cognitive deficits in animal model of Alzheimer disease

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**Abstract:**

Recent studies have explored the role of insulin resistance in cognitive deficit condition and Alzheimer type of dementia disease. The transcription factor peroxisome proliferator activated receptor gamma (PPARÎ³) agonists have been well known for their insulin sensitizing actions, but their unwanted side effects limit their clinical use. Studies from our laboratory and others have explored the involvement of Histone deacetylase (HDACs) in insulin resistance and neurodegenerative disorders including Alzheimer Disease (AD). This study have been designed to evaluate the effect of PPARÎ³ agonist (rosiglitazone) and HDAC inhibitor (vorinostat) in neuro-protection along with its effect on various genes implicated for memory and cognition.

Alzheimer type of dementia was developed by intracerebroventricular streptozotocin injection (3mg/kg). The rosiglitazone and vorinostat alone or in combination was administered for 14 days. The behavioral parameters were analyzed by passive avoidance task, object recognition task and Morris water maze test. Further we have evaluated the mRNA expression level of various genes implicated for the cognitive function and neuroprotection such as BIN1 (Bridging integrator 1), SORL1(Sortilin-related receptor 1), FERMT2 (Fermitin family member 2), CREB (cAMP response element-binding protein), BDNF (Brain derived neurotrophic factor), GDNF (Glial cell neurotrophic factor) and NGF (Nerve growth factor) by real time polymerase chain method (RT-PCR). The amyloid-Î² level and neuronal degeneration was determined by ELISA method and histo-chemical analysis respectively.

STZ (i.c.v) treated animals have shown significant cognitive deficits, AÎ² deposition and decreased mRNA expression. However, PPARÎ³ agonist (rosiglitazone) and HDAC inhibitor (vorinostat) treatment in combination significantly attenuated the AÎ² level and increased healthy neuron count along with increasing the expression of SORL1, FERMT2, BDNF, GDNF, NGD and CREB levels.

Our results suggest that PPARÎ³ agonist- rosiglitazone and HDAC inhibitor-vorinostat treatment in combination could efficiently alleviate cognitive dysfunction and attenuated the amyloidal deposition and neurodegeneration. The significant neuro-protective effect under this synergistic treatment justifies further investigations in other neurodegenerative conditions.

**Sub-Code-2824**

**Ref No:** hMTh0GgH

**Title:** Beneficial Effects of Parenteral / Enteral Glutamine (Ala-Gln) Supplementation in Patients with Acute Pancreatitis
Abstract:

Background: Glutamine (Gln), an abundant amino acid readily synthesised in the body, tends to get depleted in nutritional deficiencies associated with critical illnesses eg, severe acute pancreatitis (SAP). Low plasma Gln is an independent predictive factor for poor outcome in critical illnesses and Gln administration to patients of critical gastrointestinal diseases is reported to be beneficial. In this study, we evaluated and compared the beneficial effects of parenteral versus enteral Ala– Gln dipeptide (AGD) administration in SAP patients.

Experimental: Moderately SAP (MSAP) / SAP patients undergoing treatment at the Asian Institute of Gastroenterology, Hyderabad, were divided in to two groups (n=10 each) and given standard therapy alone (group 1) or along with parenteral AGD (group 2). Effects of treatment were determined on haematological, plasma and vital parameters including abdominal girth; liver, kidney and pancreatic functions; IV fluid infused and urinary volume output; disease severity scores and duration of hospital stay including that in ICU. These parameters / indices were determined and compared between the groups on day 1 and 7 of therapy and within the group between day 7 and 1 of therapy. Differences between day 7 and 1 of each parameter were compared between parenteral and enteral (retrospective data) AGD groups to assess the better route for AGD administration. Data was analysed statistically using Student’s t test or Mann Whitney U test or one way ANOVA as appropriate.

Results: Most parameters were comparable between the two groups of patients on day 1 of therapy, whereas on day 7, BUN, serum creatinine, SOFA and Marshall scores were higher in parenteral AGD than control group. In comparison with values on day 1, parenteral AGD showed significant change only in body temperature and Glasgow COMA score on day 7, while standard treatment affected Hb, HCT, plasma globulin, BUN and SOFA scores. Although comparison of values on day 7 of treatment showed no significant differences between parenteral and enteral AGD (retrospective data) patients, effects in enteral AGD group were of greater magnitude and in right direction than those in parenteral group. Further, comparison of a parameter within the group, on day 7 versus 1 of treatment, indicated that enteral AGD was better than control, suggesting that enteral AGD may be better than parenteral. Finally, testing differences in the value of parameters (day 7-1) in enteral and parenteral groups, showed no significant differences between them in disease severity scores, although some parameters (liver function tests and vitals) showed significant differences. Nevertheless, magnitude of change and its direction appeared to suggest enteral AGD to be better than parenteral. It was however intriguing that neither enteral nor parenteral AGD had significant effect on total duration of hospital stay in general, or that in ICU in particular.

Conclusion We conclude that early enteral rather than parenteral AGD administration may be associated with better benefits in SAP patients albeit both did not affect total duration of ICU or hospital stay.
Title: Role of NLRP3 inflammasome complex genes in neuroinflammatory response and cognitive dysfunction in REM sleep deprived rats

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Abstract:

Objectives: To investigate the role and association of NACHT, LRR, and PYD domains containing protein3 (NLRP3) inflammasome complex coding genes as neuroinflammatory response in acute insomnia with cognitive dysfunction using REM (rapid eye movement) sleep deprivation model in Wistar rats.

Methods: The rat brain samples (control, test and Aspirin group) were used for the molecular analysis of the inflammatory pathway involved in sleep deprived rats. The rats underwent REM sleep control and REM sleep deprivation for 7 days followed by cognition evaluation studies namely Morris water maze (MWM). Oxidative stress was evaluated by measuring reduced glutathione and malondialdehyde levels. Results were analyzed by ANOVA followed by post hoc Tukey’s test. Total RNA extracted from prepared brain samples. The purity and integrity of extracted total RNA was checked for expression of NLRP3 gene, Caspase 1 and IL-1β (Interleukin-1 beta). Gradient PCR (polymerase chain reaction) was carried out for target genes encoding NLRP3 inflammasome complex. Semiquantitative analysis was done using Graph Pad Prism software v7.1 and one-way ANOVA.

Results: Neurological improvements were assessed using MWM. mRNA expression for NLRP3 gene in aspirin treated rats with acute sleep deprivation was observed to be significantly (p<0.001) higher compared to control and sleep deprived rats. In contrast, the mRNA expression for Caspase 1 and IL-1β was significantly lower. The reference gene, GAPDH was stably expressed across all conditions in the acute sleep deprivation. Increase in oxidative stress following REM sleep deprivation was observed.

Conclusion: As per our knowledge we demonstrated for the first time that NLRP3 inflammasome complex is associated with the inflammatory process in acute sleep deprivation and cognition. Moreover, blockade of prostaglandin synthesis pathway probably results in reinforcement of NLRP3 inflammasome complex dependent inflammation that might affect cognition after acute sleep deprivation. Aspirin also improved cognition which may be attributed to its antioxidant properties.

Key words: sleep deprivation, Oxidative stress, Aspirin, inflammasome
Title: To Evaluate the Beneficial effect of Two Varieties of Coconut Water on Methotrexate Induced Testicular Toxicity in Male Wistar albino rats

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Abstract:

Introduction - Methotrexate has toxic effects on testicular functions due to increased production of reactive oxygen species (ROS). Recent studies have shown that coconut water contains L-arginine and possess antioxidant property. In the present study, we sought to evaluate the beneficial effects of green and yellow Coconut Water on methotrexate (MTX) induced testicular toxicity in male Wistar rats.

Materials and methods - Adult male albino rats weighing 100–200 g and aged 10 weeks old were used in the present study. A total of 30 rats were divided into 5 groups of six rats each. Group 1: Normal saline, Group 2: MTX (20mg/kg) / oral, Group 3: MTX plus green coconut water (4ml/100gm) / oral, Group 4: MTX plus yellow coconut water (2ml/100gm) / oral, Group 5: MTX plus yellow coconut water (4ml/100gm) / oral. All drugs were given orally for 15 days except MTX which was administered only on day 1. Body weight, testicular weight, testicular index, epididymis weight, sperm count, sperm motility and viability were estimated. The levels of testicular alkaline phosphatase and serum testosterone were estimated. Tissue antioxidant levels were measured and testicular tissue was subjected for histopathological examination. Results were analysed using One-way ANOVA followed by Post hoc analysis.

Results - Both yellow and green coconut water treated group showed statistically significant maintenance of testicular functions when compared to MTX alone treated group. Yellow coconut was better than green coconut with significant improvement in all the parameters. High dose of yellow coconut showed significant improvement when compared with a low dose. Histopathology of groups 1, 4, 5, 6 showed the normal testicular architecture, but group 2 showed loss of germ cells with degeneration of seminiferous tubules. Conclusion - Green and yellow coconut as an antioxidant agent can be used in reversing the testicular toxicity induced by MTX in rats.

Keywords - Testosterone, Sperm function, Alkaline Phosphatase, Reactive Oxygen Species, Antioxidant effect

Title: Assessment of Neuroprotective effect of music exposure on learning and memory in the off springs of maternal stress induced rats due to sleep deprivation

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Abstract:
**Background:** The usage of music as a therapeutic mode can have a good impact on the individuals. It can bring plasticity in brain and also benefit by creating a new path for music as a therapy line.

**Aim:** Hence we sought to explore the effect of OM mantra, a kind of music to rodents and their morphometric analysis of the neurons.

**Materials and methods:** The study was carried on 3 groups (6 rats in each) of female albino wistar rats and made to conceive.

- **Non-intervention;** Group A: subjected to sleep deprivation model for 22hrs (11-9 am) per day from 14 till 18 “21 gestation days; Group B: subjected to sleep deprivation model along with the intervention of music therapy (OM mantra) from 14 to 20 gestation day for 12hrs (7pm- 7 am).

After pups were born, all the 3 groups were assessed for the developmental milestones along with their behavioural study. The data was analyzed using the Non parametric Kruskal-wallis test comparing the median.

**Results:** The results of surface righting reflex and negative geotaxis reflex showed significant difference between control and Group A (p<.001) and control v/s Group B for righting reflex was p<.001 & for geotaxis reflex was p=0.007.

**T-Maze Test:** Group B showed very highly significant increase in mean number of alteration (p<.0001) than control and Group A.

Group B showed highly significant increase in number of correct response (p<.0001) than control and Group A (p<.001).

**Passive avoidance:** There was no statistically significant difference noted either in the acquisition trial or retention trial between the three groups.

**Conclusion:** The study concludes that exposure to OM mantra to the pregnant mothers can improve the learning and memory functions of the offspring.

**Sub-Code-2828**

**Ref No:** WgCurCnj

**Title:** A prospective observational study to compare the toxicity of Prednisolone & Deflazacort using Glucocorticoid toxicity score(GTS) in chronic systemic rheumatoid arthritis

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**Abstract:**

**Background**- Glucocorticoids mostly used in rheumatoid arthritis have long term side effects. this study compares the toxicity of Prednisolone & its congener Deflazacort using Glucocorticoid Toxicity Index score (GTI score) in chronic systemic rheumatoid arthritis (RA) 11/9/2019 6:18
Methods- Patient of age group 18-70 years are included in the study. pregnancy, hepatic, renal & cardiac impairment, smoking, alcohol, HTN, diabetes, oedema are excluded. They are evaluated on the basis of GTI score (-36 to 439) including parameters in specific list.

Results- out of total 38 patients, Group A received Prednisolone (n=17) with starting dose of 10 mg tapered to 2.5 mg. Group B received Deflazacort (n=17) with starting dose of 7.5 mg tapered to 2.5 mg. According to GTI score, 10 out of 17 in Group A & 6 out of 17 in group B have shown side effects.

Conclusion- Deflazacort at high dose has shown less toxicity in compare to Prednisolone in RA patients.

Keywords- Prednisolone, Deflazacort, GTI (Glucocorticoid Toxicity Index)
**Sub-Code-2901**

Ref No: D6hf8t6N

**Title:** Effects of Withania somnifera Extract on Experimental Model of Type 2 Diabetes Mellitus Induced Amnesia

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**Abstract:**

Background: Type 2 diabetes mellitus is a metabolic syndrome and the present study is designed to investigate the effects of Withania somnifera extract on experimental model of type 2 diabetes mellitus induced Alzheimerâ€™s disease.

Methods: Type 2 diabetes mellitus was induced in rats by feeding them with high fat diet (HFD) followed by intraperitoneal administration of streptozotocin (STZ; 35 mg/kg). Test drugs viz. Withania somnifera extract (100 mg/kg and 300 mg/kg) and pioglitazone (20 mg/kg) were administered orally for 8 weeks to the diabetic rats. At the end of the treatment animals were tested for memory deficits in passive avoidance test and Morris water maze test. After behavioural analysis, animals were sacrificed; serum and brain samples (hippocampus and pre-frontal cortex) for further estimations.

Results: Significant elevation in fasting blood glucose, cholesterol and triglyceride levels were observed in HFD-STZ induced diabetic rats. In passive avoidance and Morris water maze tests, diabetic rats were found to have significant lower retention as compared to control animals. However, the group of animals treated with test drugs showed a significant retention when compared with diabetic group. The levels of Aβ-42 was found to be increased in the hippocampus and pre-frontal cortex of diabetic rats when compared with control animals whereas it was decreased significantly in test and standard groups as compared to diabetic group.

Conclusion: The data suggested that treatment with Withania somnifera and Pioglitazone decreased the fasting blood glucose, triglycerides and cholesterol levels, when compared with diabetic control group. Further, treatment with test drugs improved retention. Thus, Withania somnifera may have therapeutic effects in type 2 diabetes mellitus induced memory loss.

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**Sub-Code-2902**

Ref No: GZD3Un3T

**Title:** Evaluation of antianxiety activity of aqueous extract of Cynodon dactylon in mice

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**Co-Author Name:** Saroj Kothari
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Abstract:

Introduction: Cynodon dactylon, which is called दूब in hindi, is a perennial grass found all over the world. It has been extensively used in traditional medicines to treat cough, headache, diarrhoea, cramps, epilepsy, dropsy, dysentery, haemorrhage, hypertension, hysteria etc. Whole plant of Cynodon dactylon having several biological activities such as antibacterial, antimicrobial, antiviral, antidiabetic, immunomodulatory, antioxidant, hypolipidaemic and wound healing properties etc. Therefore, present study was planned to find antianxiety activity of aqueous extract of cynodon dactylon (AECD) in Swiss albino mice.

Method: Antianxiety activity of aqueous extract of cynodon dactylon was done using elevated plus maze apparatus. Animals were divided into four groups of six mice each: Control group, Test 1 (AECD 200 mg/kg), Test 2 (AECD 400 mg/kg), Standard (Diazepam 1 mg/kg). Drug was administered to all groups daily by oral gavage for 30 days. Stay in closed and open arms, entries in closed and open arms, rearing and head dipping were recorded.

Result: The present study demonstrated dose dependent significant increase in entries in open arms and stay in open arms (p<0.05) & significant reduction of stay in closed arms (p<0.05) with doses (200 mg/kg & 400 mg/kg) of aqueous extract of cynodon dactylon compared to control group.

Conclusion: The present study showed that aqueous extract of cynodon dactylon possess antianxiety activity.

Keywords: Cynodon dactylon, Elevated plus maze, Antianxiety activity

Sub-Code-2903

Ref No: WvKevkeK

Title: Methanolic extract of Eucalyptus robusta leaves produced antiviral action by targeting viral entry and budding in vero cell lines

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Co-Author Name: Naveen Kumar#, Amit Shukla* and Satish K. Garg*

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Abstract:

Synthetic antiviral drugs have several side effects, thus herbal drugs as an alternative to synthetic antiviral drug is continuously gaining importance. Traditional use of Eucalyptus has been reported against viral infections, however, its mechanism of action is yet to be explored. Thus the present study was undertaken to evaluate the in vitro antiviral activity, if any, and also the possible target(s)/mechanism of action of methanolic extract of Eucalyptus robusta leaves using vero cell lines against buffalo pox virus (BPXV). Cytotoxicity of the test extract was evaluated by MTT assay and 10 μg/ml of the extract was found to be non-cytotoxic. Virucidal activity, viral-attachment, virus entry and virus release assays were determined in the vero cell lines using standard experimental protocols and viral DNA in the virus-infected
cells were quantified by real time PCR. At non-cytotoxic concentration, methanolic extract of Eucalyptus robusta leaves was found to inhibit the replication of virus at viral entry and budding level, whereas other steps of viral life cycle such as attachment and nucleotide synthesis remained unaffected. Based on the above findings, it may be inferred that Eucalyptus robusta leaves extract possesses promising antiviral activity specifically by inhibiting the entry and budding of viruses; and this plant extract possesses excellent and promising potential for development of effective herbal antiviral drugs.

Sub-Code-2904

Ref No: pbVTawER

Title: Antioxidant and Neuroprotective Activity of Ethanolic Extract of Saraka Asoca Flower Wilde in Mice Models.

Author Name: Dr. Priyadarshini Bai G, Shashikumara, Prathima.C, Ravikumar P

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Abstract:

Aims: To analyse chemical constituents of ethanolic extract of Saraka asoca flower (ESAF) on acute restraint stress (ARS)-induced mice models.

Settings and Design: Elevated plus maze (EPM), light-dark box (LDB), Social interaction test (SIT), forced swim test (FST) and tail suspension test (TST) were employed to evaluate effect of ESAF on behavior of albino mice.

Methods and Material: Ethanol fraction of ESAF was subjected to Liquid Chromatography-Mass Spectrometry (LC-MS) and High performance liquid chromatography (HPLC). Behavioural animal models, namely, EPM, LDB, SIT, FST and TST were employed to evaluate effect of ESAF on behavior among albino mice.

Statistical analysis used: One-way ANOVA test followed by Post-hoc Dunett’s multiple comparison tests were employed. p<0.05 was considered statistically significant. Results were expressed as mean ± SEM.

Results: Ethanol fractions of ESAF showed presence of bioflavonoids namely, myricetin, quercetin, and rhamnazin. ESAF showed significant anti-anxiety activity (p<0.05) as depicted by increase in time spent in open arms of EPM and in light box in LDB test. ESAF also significantly reversed ARS induced depressive-like behaviour in albino mice.

Conclusions: ESAF exhibited significant anti-anxiety and antidepressant activities in mice screening models which may be attributed to presence of various Antioxidant and Neuroprotective constituents like Myricetin, quercetin, and Rhamnazin.

Key-words: Saraka asoca flower, Acute Restraint stress, Antioxidant and Neuroprotective activity depression, anxiety.
Title: Anxiolytic activity of Artocarpus Heterophyllus phenolic seed extract: A preclinical study

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Abstract:

Background: Many indigenous plants with anti oxidant property have shown to be beneficial in many behavioral disorders like anxiety.

Objectives: To evaluate anxiolytic activity of Artocarpus Heterophyllus phenolic seed extract (AHPSE) and to screen for itâ€™s the possible potentiating anxiolytic activity with Diazepam in Swiss albino mice.

Methods: A total of 84 healthy male Swiss albino mice weighing 25-35 g. were used and they were divided into 14 groups of 6 mice in each. First seven groups (1st -7th) were evaluated by Light and Dark Arena (LDA) and remaining by Elevated Plus Maze (EPM) for their anxiolytic action. 1st group (control) received normal saline 10mg/kg, 2nd group (standard) Diazepam 1mg/kg and 3rd , 4th, 5th, 6th and 7th groups (test) respectively received AHPSE in different doses 100mg, 200mg, 400mg, 800 mg and 800mg/kg + 1mg/Kg Diazepam per orally. They were evaluated for antidepressant activity using LDA after 60 minutes of drug administration. Similarly, remaining seven groups received the same drugs and evaluated using EPM after 60 minutes of drug administration. The duration of time spent and numbers of entries in light compartment/open arm and dark compartment/closed arm were noted for five minutes for each mouse.

Results: One way ANOVA followed by Tukey-Kramer multiple comparison test clearly showed that AHPSE in all the doses (100-800mg/kg) has shown increase in the time spent in light compartment/open arm and decrease in the time spent in the dark compartment/closed arm when compared to control and standard groups (p<0.001) in both LDA and EPM models. The study also proved potentiating activity of AHPSE in both the models when combined with Diazepam with p value <0.001.

Conclusion: The current study has demonstrated an anxiolytic and potentiating effect of AHPSE in animal models of anxiety.

Keywords: Artocarpus Heterophyllus phenolic seed extract, Elevated plus maze, light and dark arena.

Title: Effect of virgin coconut oil on fertility and cytogenetic changes induced by stress in male Wistar Albino rats
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Abstract:

Background: Continuous and strenuous exercise induces oxidative stress which in turn cause gonadal injury as well as cytogenetic changes. Virgin Coconut Oil [VCO] contains medium chain fatty acids like lauric acid and phenolic compounds like ferulic acid, caffeic acid and p-coumaric acid that have significant antioxidant properties. This may be beneficial in preventing fertility changes induced by stress in males.

Objectives: To evaluate the effect of VCO on fertility and cytogenetic changes induced by stress in male Wistar albino rats.

Methods: Thirty male rats were selected, five groups of six rats each. Group 1 was control group, Group 2 received forced swimming stress, daily, Group 3, 4, 5 received stress, daily after administration of VCO in doses of 1.5mL/kg, 5mL/kg and 10mL/kg per oral respectively, for 30 days, following which, animals were sacrificed. Testes were collected for physical parameters (sperm count and motility), testicular antioxidant levels and histopathological analysis. Blood was collected for serum testosterone estimation, bone marrow samples were taken for cytogenetic assessment (mitotic index and chromosomal aberration). Results were analysed by one way analysis of variance [ANOVA] followed by post hoc Tukeyâ€™s test.

Results: Stressed group as compared to control, showed significant (p<0.05) reduction in sperm count, motility, testicular GSH and serum testosterone, while a significant increase in MDA, mitotic index and chromosomal aberration was observed. Histopathological examination showed mild to moderate disruption in seminiferous tubules in the stress group. All doses of VCO, 1.5mL/kg, 5mL/kg and 10 mL/kg/day, showed statistically significant (p<0.05) improvement in all the above parameters, as compared to stress group.

Conclusion: VCO has protective effect on testicular damage as well as cytogenetic changes caused by stress, which may be attributed to its antioxidant property.

Sub-Code-2907

Ref No: IpGuUKNk

Title: Efficacy of Peppermint oil in Irritable Bowel Syndrome

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Abstract:

Background and Objectives: Irritable Bowel Syndrome (IBS) is a functional bowel disorder characterized by abdominal pain or discomfort and altered bowel habits in absence of detectable structural abnormalities with an worldwide incidence of 10-20%. According to Rome IV criteria subtypes of IBS can be IBS-D, IBS- C and IBS-M. The diverse profile of IBS has led to the use of both non pharmacological and pharmacological therapy. Earlier Peppermint Oil (PO) was used in different types of abdominal pain. Now a new formulation of PO is designed using site specific targeting technology for use in patients of IBS to improve symptoms. Hence the study was conducted to assess the efficacy of Peppermint Oil in IBS patients.

Method: A prospective, randomized, placebo controlled observational study of 6 month (June- November 2018) duration was done in Dept. of Gastroenterology, SCB MCH, Cuttack. A total of 60 IBS patients (18 -60yr) were included in the study. They were divided randomly into two groups. Gr-1 received PO 180mg TDS 60 min before breakfast, lunch, dinner and Gr-2 received placebo in same manner. The baseline and follow-up parameters of Total IBS symptom Score (TISS) were recorded at 0hr, 24hr and 4wks of treatment in both the groups. Statistical comparison was done between pre and post treatment by Mann Whitney Test and comparison between the treatment groups was done by Kruskal Wallies Test.

Results: There was significant reduction in TISS at 24hr and after 4weeks in the Peppermint Oil taking group(Gr-1) from the baseline score in comparison to the Placebo treated group(Gr-2).

Conclusion: Peppermint oil is found to be significantly effective in IBS patients

Ref No: UM11FM0U

Title: Effect of Lupeol on Estrogen deficiency and Osteoporosis in Ovariectomized Rats

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Abstract:

Objective: Menopause occurs as a consequence of age-related follicular degeneration and is characterized by cessation of menstrual cycle and deficiency of ovarian hormone especially estrogen. The deficiency of estrogen results in vasomotor, urogenital symptoms and increased risk of osteoporosis. The present study aims at evaluating the effect of lupeol on estrogen deficiency and osteoporosis.

Methods: Female rats were bilaterally ovariectomized and divided into 7 groups of 8 animals each as normal control, sham control, ovariectomy control, standard (17β-estradiol 50Âµg/kg) and lupeol (25, 50 and 100mg/kg) treated groups. The sham group underwent sham operation. The animals were dosed orally for 90 days. Tail skin temperature was measured daily and vaginal cornification was evaluated every 4th day. On 90th day serum hormones and various biochemical, bone physical, radiological and histopathological parameters were recorded.
Results: Decrease in tail skin temperature, induction of vaginal cornification, improved serum hormonal and lipid profile, improved bone physical characteristics, increased bone density and improved cytological and histological changes were observed with standard and lupeol treatment.

Conclusion: Lupeol was thus found to be effective against estrogen deficiency symptoms and prevention of osteoporosis.

Key words: Estrogen deficiency, Osteoporosis, Lupeol, Ovariectomy

Sub-Code-2909

Ref No: vlyEhqcv

Title: Evaluation of Cardioprotective effect of virgin coconut oil on doxorubicin induced cardiotoxicity in Wistar rat

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Abstract:

Doxorubicin (DOX) is a quinone containing anthracycline antibiotic widely used as antineoplastic agent but its cardiac toxicity limits its use at a maximum dose. DOX generates reactive oxygen species which causes lipid peroxidation finally organ dysfunction leads to cardiomyopathy. Virgin Coconut oil (VCO) is a dietary food supplement which contains a potent antioxidant activity due to presence of polyphenol. Therefore, the aim of our study was to evaluate the possible protective role of VCO against DOX-induced cardiotoxicity. A total of 30 male Wistar rats were randomized into 5 groups of weight 200-250 g. The treated group animals were orally administered with VCO (0.42, 0.71 and 1.42 ml/kg) for 42 days. Simultaneously on 14th, 21th, 28th & 35th day cardiotoxicity was induced by DOX intraperitoneally to reach cumulative dose of 15mg/kg. On the 42nd day, the blood was withdrawn from each rats under anesthesia by ROP. Collected blood was processed for serum determination like LDH, CK-MB and HDL. The hearts were removed and processed for both histopathological examination and oxidative stress evaluation like reduced glutathione, lipid peroxide levels and superoxide dismutase activity.

Our results indicated that DOX cardiotoxicity increased the level of serum enzymes (LDH & CK-MB) and decreased HDL level. Histopathological examination of DOX group showed severe congestion, vacuolization and myofibrillar loss. The significant decrease in antioxidant level was also found in DOX treated group. While pretreatment with VCO in rats showed significant decrease in the cardiotoxic effect of DOX, which was evidenced by evaluating all parameters and histopathological examination.

Sub-Code-2910

Ref No: LOurYUyu

Title: Pharmacological evaluation of curcumin in combination with piperine in nicotinamide-streptozotocin induced diabetic neuropathy in male Wistar rats.
Abstract:

Aim: To evaluate the effect of Piperine in combination with Curcumin in nicotinamide-streptozotocin (NIC-STZ) induced diabetic neuropathy in male Wistar rats.

Introduction: Curcumin and piperine are reported to exhibit anti-inflammatory, antioxidant, neuroprotective etc. Their combination has not been studied in diabetic neuropathy, therefore the objective of present study was to evaluate the neuroprotective effect of curcumin in combination with piperine in NIC-STZ induced diabetic rats.

Method: The male Wistar rats were induced diabetes by injecting NIC-STZ., the diabetic rats were divided into disease control, glibenclamide (1), glibenclamide + piperine (1+50), curcumin (50) and curcumin (50) with different doses of piperine (10, 30 and 50). The treatments (mg/kg) were given orally for 6 weeks daily. Vehicle group was also maintained which was non diabetic and was administered saline. Mechanical allodynia- Vonfrey, mechanical hyperalgesia- Randall selitto, and thermal alldodynia - radiant heat analgesiometer and thermal hyperalgesia- hot plate method was performed. Blood was withdrawn and estimated for antioxidant profile. Histopathology of the sciatic nerve was done to access the neuroprotective effect.

Results: Disease control showed increased paw withdrawal latency (PWL) and no nociceptive threshold in thermal and radiant heat model while decrease was observed in mechanical hyperalgesia. Curcumin + piperine (50+50) treated animals showed anti-diabetic, analgesic effect, significant antioxidant activity. The histopathological study confirmed the neuroprotective effect.

Conclusion: It is concluded that curcumin- piperine (50+ 50) attenuated degeneration of sciatic nerve due to its antioxidant mechanism.
Abstract:

Aim: The Ayurvedic formulations, Mustaakadi pramathya contains Musta (Cyprus rotundus Linn) and Indrayava (Writhiatinctoria R.Br), are reported to be antidiarrhoeal, antispasmodic and antimicrobial but require Scientific validation.

Method: Castor oil induced diarrhoea- The male Wistar rats were divided into 6 group of 6 animals each. Group I-Vehicle control, Group II-Disease control, Group III - Atropine, (3mg/kg), Group IV-Mustakaadi Pramathya (Musta+Indrayava), 1.7 ml for 200g rats, Group V- Musta, Group VI-Indrayava. One hour post treatment, castor oil (3 ml, p.o.) was administered. The parameters measured were faecalweight, moisture content, time of induction of diarrhoea, frequency and durationof diarrhoeal episodes, serum electrolyte and serum CRP. Charcoal transit model-Thegroups were treated as mentioned above followed by 2ml castor oil and 1ml of marker (10% charcoal). The rats were sacrificed after 1h and the distance travelled by charcoal meal from the pylorus was measured.

Result: Significant decrease in onset of diarrhoea and significant increase in frequency and duration of diarrhoea in disease control group (p<0.001). Musta+Indrayava showed significant increase in onset of diarrhoea and decrease in frequency and duration of diarrhoea. CRP was significantly decreased in all treatment groups (p<0.001). No treatment had any effect on serum levels of Sodium, Potassium and Calcium.Length travelled by charcoal in second model was significantly reduced in Atropine (p<0.001) and no effect was seen in all other treatment groups.

Conclusion: Musta + Indrayava exhibited significant antidiarrheal effect but it is less potent than Atropine, all the treatment exhibited anti-inflammatory effects as observed by reduced CRP.

Sub-Code-2912

Ref No: 9CCaAFjS

Title: Pharmacological evaluation of curcumin in combination with piperine in nicotinamide-streptozotocin induced diabetic nephropathy in male Wistar rats.

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Abstract:

Background -Curcumin is a very potent bioactive constituent exhibitinghypoglycemic, antioxidant, anti-inflammatory, antimicrobial, anticarcinogenic, nephroprotective,suppresses thrombosis, protects against myocardial infarction. Piperine also shows anti inflammatory, anti oxidant and bioavailability enhancing properties.

Objective- To evaluate the nephroprotective activity of curcumin when administered concomitantly with piperine in diabetic rats.

Methods-OVERNIGHT fasted male Wistar rats were administered nicotinamide + streptozotocin (110 + 65mg/kg, i.p.). The diabetic rats were divided into 8 groups- vehicle control, diabetic
control, glibenclamide (1mg/kg), glibenclamide + piperine (1+50 mg/kg), curcumin (50 mg/kg), curcumin + piperine (50+10 mg/kg), curcumin + piperine (50+30 mg/kg), curcumin + piperine (50+50 mg/kg). The treatments were given orally up to 6 weeks. At the end of treatment, biochemical, antioxidant parameters and histopathological studies were carried

Result- Curcumin with higher dose of piperine demonstrated a significant decrease in blood glucose, triglyceride, serum creatinine, serum uric acid, urine creatinine, and urine albumin levels. The antioxidant activity of the combination was evident as there was a significant increase in kidney GSH and SOD levels along with significant decrease in MDA. The histopathological study confirmed the nephroprotective activity.

Conclusion- Curcumin in combination with piperine (higher dose) showed enhanced nephroprotective activity in diabetic rats.

Sub-Code-2913
Ref No: kRIBQqqF

Title: Sesamol modulates mechanistic pathways in a dose-dependent manner in bleomycin-induced pulmonary toxicity in rats

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Abstract:

Bleomycin (BLM) is a chemotherapeutic agent which is widely used in treatment of carcinomas, but it manifests its major toxic effects on lungs. This toxic feature led to development of a screening model for studying idiopathic pulmonary fibrosis in animals. Various drugs and chemicals have been studied for their beneficial effects. Bleomycin-induced pulmonary toxicity model mimics the human model of disease.

Sesamol is extracted from Sesamum indicum seed oil, widely used as food ingredient in Indian sub-continent. The definite roles of molecular pathways are yet to be studied through which sesamol exert its toxic and protective effects. Sesame lignans are sesamin and sesamolin, sesamol is the phenolic degradation product of sesamolin, known for their health promoting properties as an antioxidant, anti-mutagenic, anti-aging and anti-inflammatory.

A 35 days model of bleomycin induced pulmonary toxicity was studied following the treatment of male Wistar rats with sesamol at three different dose levels i.e. 25mg/kg, 50mg/kg and 100mg/kg. We evaluated the biochemical, histopathological and molecular patterns at different dose to study the toxic and beneficial effects of Sesamol.

Sesamol decreased oxidative stress at all the three doses and its toxic and protective effects were very-well appreciated on the histopathology and molecular studies performed.

Sesamol exerts its protective and toxic effect on lungs in a model of bleomycin-induced injury at 50 mg/kg and 100mg/kg, respectively.
Title: Cardio-protective effect of Sea buckthorn-oil on isoproterenol-induced myocardial infarction in diabetic rats

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Abstract:

Sea-buckthorn (SBT)-oil is extracted from fruits/seeds of SBT. A number of active ingredients have been obtained from this plant. These properties are successfully used in the cosmetic industry and medicine. Its unique unsaturated fatty acids give it unique function of skin-regeneration and repair. It also improves blood circulation, facilitates skin-oxygenation and removes excess toxins from body. It also protects against a number of infections, prevents allergies, eliminates inflammation and inhibits the process of aging. In view of the pleiotropic effects and very less information about the cardio-protective effect of this oil, this study was designed to evaluate the effect of SBT-oil against myocardial infarction (MI) in diabetic-rats. Diabetes (DM) was induced by administration of high fat diet for one month followed by intraperitoneal administration of a single dose of streptozotocin (STZ; 40 mg/kg). After confirmation of diabetes, the rats were divided into different groups and drug-administration was done for 14 days. The different groups included were normal; diabetic rats+ Isoproterenol (Iso.) (DM+Iso); diabetic rats pre-treated with SBT-oil (DM+SBT+Iso) and SBT per se group. MI was induced in all the study groups except the normal group by subcutaneous injection of 85 mg/kg/day Iso., on last two days. DM and Iso.-induced-MI was evident on histopathological analysis. The activities of creatine-kinase on myocardial bundle (CK-MB) and lactate dehydrogenase (LDH) were also reduced. SBT-oil treatment restored the histopathological changes and also reinstated a balanced redox status. It protected rats against myocardial infarction by attenuating myo-necrosis, edema, cell death and oxidative stress. The present study concluded that SBT-oil ameliorates hyperglycaemia, redox imbalance, inflammatory processes and protected myocardium of diabetic rats against acute myocardial infarction.

Title: Evaluation of Liv.52 For Cholagogue And Choleretic Activity in Preclinical Models

Author Name: Madan MN

Co-Author Name: Onkarmurthy M, Kamlesh KV, Suryakanth DA, Azeemuddin M, Rafiq M, Babu UV, Rangesh P.

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Abstract:
Objective: The aim of the study was to evaluate cholagogue and choleretic activity of Liv.52 in preclinical models.

Methods: Cholagogue activity: Thirty-six Swiss albino mice (b.wt 30-35g) were divided in to two sets (single dose and repeated dose) of 18 each and each set was divided in to 3 groups of 6 each. Group 1 was served as control and group 2&3 were treated with Liv.52 at a dose of 250 and 500mg/kg b.wt respectively. In the first set, the animals were euthanized after 1 hour of treatment and gall bladder was collected and weighed along with the bile. In the second set, the treatment was continued for 2 weeks and the same procedure was followed as done for the first set.

Choleretic activity: Thirty-six female Wistar rats (b.wt 200-230g) were divided in to two sets (single dose and repeated dose) of 18 each and each set was divided in to 3 groups of 6 each. Group 1 was served as control and group 2&3 were treated with Liv.52 at a dose of 250 and 500mg/kg b.wt respectively. In the first set, the animals were given a single dose of treatment followed by bile duct cannulation using a PE-10 catheter. Bile was collected for 4 hours and the volume was measured every half an hour. In the second set, the treatment was continued for 2 weeks and the same procedure was followed as done for the first set.

Results: In cholagogue activity, the single dose of Liv.52 significantly (P<0.001) increased the bile weight at both 250 and 500mg/kg dose compared to control. In repeated dose, Liv.52 at a dose of 250mg/kg (P<0.01) and 500mg/kg (P<0.001) significantly increased the bile weight compared to control animals.

A dose-dependent increased in the bile secretion was observed in the animals treated with a single and repeated dose of Liv.52 when compared to control animals.

Conclusions: Based on the results obtained it can be inferred that Liv.52 has shown significant cholagogue and choleretic activity when explored by preclinical models, which further explains the mechanism behind the usefulness of Liv.52 in different hepatobiliary conditions.

Sub-Code-2916
Ref No: obo9MxaS
Title: Preventive Effects of Cystone-Sf on Binding Affinity of Siderophore Produced by Uropathogenic Escherichia Coli.
Author Name: Suryakanth DA
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Abstract:
Objective: The aim of the study was to evaluate the beneficial effect of Cystone-SF, a multiherbal formulation on urinary tract infection (UTI) by using in vitro uropathogenic escherichia coli (UPEC) siderophore inhibition assay.
Methods: In this experiment, an UPEC strain (Escherichia coli procured from ATCC), was taken as a source of siderophore for both qualitative and quantitative assay. The culture with 108 cells/ml was inoculated into 200ml soyabean-casein digest medium dispensed in 500ml conical flasks and incubated at their respective growth temperatures for 3 days. It was then centrifuged at 10,000rpm for 10 min and supernatant was examined for extracellular Siderophore production by FeCl3 test. A red to purple colour is generated upon chelation of the metal ion with the Siderophore followed by quantitative evaluation of Siderophore using chrome azurol sulphonate (CAS) assay and Arnowâ€™s test with a 1h drug â€“ supernatant incubation period. In CAS assay, supernatant was added to CAS solution, where an orange colour was developed indicating Siderophore production. In Arnowâ€™s test, catecholate siderophores on reaction with nitrous acid, molybdate and alkali, yield a pink chromogen. Siderophore inhibition efficacy was calculated in terms of half-maximal inhibitory concentration (IC50). Cystone-SFÂ® is a proprietary and polyherbal formulation of The Himalaya Drug Company, was tested at different concentration for Siderophore inhibition using CAS and Arnowâ€™s test.

Results: It was found that IC50 of Cystone-SF was 23.24Âµg/ml in CAS assay and 187.21Âµg/ml in Arnowâ€™s test.

Conclusion: As per the aforementioned results, it can be concluded that Cystone-SF has shown good siderophore inhibition by modulating the catecholate binding site and also decreases the affinity of siderophore for iron chelation. Thus, proving its beneficial effect as bacteriostatic in the management of UTI.

Sub-Code-2917

Ref No: LvNg8ueg

Title: Pharmacological Potential of Marrubium Vulgare/Marrubiin Per Se And in Combination with Selected Drugs in Traumatic Brain Injury in Mice

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Abstract:

Traumatic brain injury (TBI) is remains a leading cause of death and disability among trauma patients. The severity and final outcome of TBI results from a complex interaction between primary and secondary mechanisms of injury that begin immediately after traumatic event. In the present study pharmacological potential of M. vulgare/marrubiin was evaluated in weight drop induced TBI in mice. Potential of marrubiin 50 or 100 mg/kg, i.p., was compared with the corresponding doses of M. vulgare extract (681 or 1362 mg/kg, p.o., based on marrubiin content analysed by High Pressure Thin Layer Chromatography). Modulation in potential of M. vulgare was evaluated through combination with other drugs, viz. lixisenatide (GLP-1 agonist) 200 nmol/kg, i.p; celecoxib (COX-2 inhibitor) 50 mg/kg, p.o.; acamprosate (glutamate receptor modulator) 400 mg/kg, i.p.; nimodipine (Ca2+ channel blocker) 10 mg/kg, i.p. All drugs were administered once daily for 7 days, starting from the 30 min of TBI.

On observing behavioral (neurological severity score, open field test, plus maze test, rotarod test), biochemical (catalase, melondialdehyde, nitrite, glutathione) neurotransmitter (GABA, glutamate), and histopathology (of brain) studies, it is observed that M. vulgare extract is
more effective than marrubiin, at the corresponding dose. Also, the pharmacological potential of M. vulgare was found to be increased with co-administration of other mentioned drugs. The anti-TBI potential of combinations was found to be observed in the order, acamprosate > lixisenatide > celecoxib > nimodipine. When all mentioned drugs were given in combination with M. vulgare extract 1362 mg/kg, a further significant increase in potential was observed in comparison with M. vulgare + acamprosate (which was the best combination among all combinations used). In this pre-clinical study it is observed that targeting glutamate excitotoxicity is a good approach for anti-TBI potential, and it can be further enhanced through targeting other cascades of pathophysiology of TBI.

Sub-Code-2918

Ref No: WS3fh1Gt

Title: Evaluation of Celastrus Paniculatus On Ethanol Preference and Decision Making in Alcohol Dependent C57bl6 Mice

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Abstract:

Introduction: Alcohol use disorder (AUD) contributed to 5.1% of global disease burden as of 2016. The approved drugs although efficacious are associated with limitations. AUD is associated with impairment in cognition, attention, memory and decision making that leads to compulsive drinking despite the negative consequences. The cognitive impairment in AUD is found to be caused by excitotoxicity due to NMDA super sensitivity. So, suppression of these NMDA receptors would improve cognition. Celastrus paniculatus(CP), known as Jyotishmati in Ayurveda belongs to medhya rasayana and is used for its memory enhancing property. It has been shown that it decreases the concentration of Dopamine in rat brain and exerts neuroprotection against glutamate toxicity by NMDA antagonism. The potential effect of this in alcohol use disorder has not been found in the literature. So, we planned to study its effect on ethanol consumption and cognitive impairment in the form of decision making in alcohol dependent mice.

Materials and Methods: After obtaining Institutional ethics committee permission, the study was conducted in 60 male C57BL6 mice (10 per group). In part 1, the effect of CP on the ethanol preference was studied using the Intermittent access model of Ethanol. In part 2, the effect of CP on decision making in alcohol dependent mice was studied using rodent version of Iowa Gambling Task. 3 doses of CP were studied with Naltrexone as positive control. Statistical analysis was done using Graphpad.

Results: In part 1, the control group showed ethanol preference of 83.27 ± 5.51 % where as medium (40.90 ± 15.18%) and high doses (31.79 ± 7.46 % ) of CP significantly decreased ethanol preference (p<0.01) which were comparable to naltrexone group (19.20 ± 6.90 %). In part 2, the control group showed preference of 54.47 ± 2.73% for disadvantageous arms whereas medium (50.52 ± 1.92 %) and high doses (48.11 ± 2.43 %) of CP significantly decreased preference (p<0.01) which were comparable to naltrexone group (45.43 ± 2.52 %).

Conclusion: Administration of CP in the alcohol dependent mice resulted in decreased ethanol preference and improved decision making as compared to the control animals.
Introduction: The goal of drug discovery and development remains to lower attrition of drugs while bringing efficacious medications more quickly to patients. The trans-discipline of reverse pharmacology (RP) offers one such opportunity to shift the paradigm, reducing major bottle necks of cost, time, and toxicity with greater chances of success. RP is the science of documenting clinical/experiential hits with basal and post intervention data, and then by relevant trans-system exploratory studies, of these hits to develop leads. Positive leads are then investigated at different levels of biological organization, experimentally, and clinically as drug candidates.

Potential and Opportunities: There is a vast scope of exploring RP by a judicious combination of systems of origin, new approaches, and areas of clinical research. The modern drug discovery processes have started revisiting traditional knowledge and ethno pharmacology to reduce the typical innovation deficit faced today. The potential of RP is immense like clinical evaluation of safety, efficacy, and quality of drugs/plants used in the traditional system of medicine, discover new drugs from natural products, new insights in human biology and to cut down costs, time and attrition rate of drug development. It will also complement the extant process by novel phyto-actives as chemical scaffolds for new chemical entities.

Challenges: The organization of RP will have to maintain dynamism, flexibility, and a progressive approach to adopt and assimilate relevant scientific and technological advancements. The expertise and infrastructure needed are mandatory in RP organization. The personnel involved should have state-of-the art skills, knowledge and appropriate attitude. Adept physician-scientists/vaidya-scientists and the basic scientists would have to be more aware of the clinical relevance and applications of their research and development at patient’s bedsides. Optimum product standardization and ethical approvals are essential.
Abstract:

Flavonoids, a group of natural substances with variable phenolic structures, are found in fruits, vegetables, grains, bark, roots, stems, flowers, tea and wine. Flavonoids are now considered as an indispensable component in a variety of nutraceutical, pharmaceutical, medicinal and cosmetic applications. This is attributed to their anti-oxidative, anti-inflammatory, anti-mutagenic and anti-carcinogenic properties coupled with their capacity to modulate key cellular enzyme function.

Accumulated data suggest that the oxidative stress-induced signaling and regulatory functions of flavonoids very likely represent their primary roles in early plants. Flavonoids are associated with a broad spectrum of health-promoting effects and are an indispensable component in a variety of nutraceutical, pharmaceutical, medicinal and cosmetic applications. This is because of their antioxidative, anti-inflammatory, anti-mutagenic and anti-carcinogenic properties coupled with their capacity to modulate key cellular enzyme functions. They are also known to be potent inhibitors for several enzymes, such as xanthine oxidase (XO), cyclo-oxygenase (COX), lipoxygenase and phosphoinositide 3-kinase.

Today, a growing demand exists for nutraceuticals globally. They possess superiority over other therapeutic agents because they are natural in origin, safe to consume and are easy to access. But, there are still many challenges ahead of establishing nutraceutical industries. These challenges include the need to accurately test the efficacy and safety of such chemical compounds, identify their exact mode of action, evaluate their bioavailability and study possible interactions with various body organs and systems.
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