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MURB INHIBITORS - INSIGHTS AND PERSPECTIVES IN THE ERA OF ANTIBIOTIC RESISTANCE

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Abstract

The rise of antimicrobial resistance constrain the renewal and potent exploration in antibacterial drug design. The bacterial peptidoglycan biosynthesis is a superior therapeutic target for antimicrobial drug discovery. The cytoplasmic steps of the biosynthesis of peptidoglycan precursor, catalysed by a series of Mur enzymes, are crucial site of action for combatting the emerging concern of resistant bacterias. Many studies were attempted to understand the detailed mechanisms and structural features of the key enzymes MurA to MurF . Among them, MurB is an attractive target, not only because of its critical and unique role in bacterial cell wall synthesis but also due to its presence in several bacterial species. MurB have been thoroughly characterized both biochemically and structurally and, interestingly, have no homologs in humans. Researchers have designed and reported many derivatives of 4-,Thiazolidinone, Dioxopyrazolidine, Thiazolyl urea as MurB inhibitors. However, none has yet made to clinical trials. Inactivity of designed inhibitors on whole-cell tests and high albumin binding of inhibitors were some of the commonly observed hindrance faced by researchers for development of potential MurB inhibitors. This review gives an insight on the strategies to overcome the draw backs of current inhibitors, structural characteristics required for potent MurBinhibitiors and attributes of active site of MurB.

Keywords: MurB, Petidoglycan, antibacterial agents,MurBinhibitors,antibiotic resistance

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IN-VITRO EVALUATION OF ANTICANCER ACTIVITY OF L-AMINO ACID OXIDASE FROM CROTALUS ATROX

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Abstract

Though snake venoms are deadly toxins, research reveals that they are treasure house of enzymatic and non-enzymatic peptides and proteins that are biologically and pharmacologically important with tremendous therapeutic potential. In this context, we evaluated anticancer potential of L-Amino Acid Oxidases (LAAO) from the venom of western diamond back rattle snake (*Crotalusatrox)* on human breast cancer cell line (MDA-MB-231). Preliminary cytotoxicity assays confirmed concentration dependent cytotoxic effect with an IC50 value of 8.98 µg/ml, suggesting the anticancer potential of LAAO from*Crotalusatrox*. Significant induction of apoptosis is exhibited by LAAO from*Crotalusatrox* in Annexin V-FITC apoptosis assay and the effect is further confirmed by TBARs assay. Effect of LAAO from*Crotalusatrox* on cell cycle was evaluated by flow cytometric analysis using propidium iodide and found that LAAO from*Crotalusatrox* significantly arrested the cell cycle at G0/G1phase. Further clarification with animal studies, toxicity as well as pharmacokinetic studies may help to confirm the chemotherapeutic potential of the compound.

Key words: Snake venom, L-amino acid oxidases,Crotalusatrox,Flow cytometry

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AN OVERVIEW ON DRUG INDUCED METABOLIC SYNDROME: A REVIEW

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Abstract

BACKGROUND: Metabolic syndrome is now a day more common and serious disease that has been recognized relatively recently. Metabolic syndrome was originally described by Reaven as "syndrome X" or "insulin resistance syndrome in 1988. Metabolic syndrome represents a cluster of related metabolic abnormalities, including central obesity, hypertension, dyslipidemia, hyperglycemia, and insulin resistance, with central obesity and insulin resistance in particular recognized as causative factors.List of some medication which may increase the risk of Metabolic Syndrome are Antihypertensive agents β Blockers , Diuretics, Endocrinologic agents, Corticosteroids, Danazol, Growth hormone, Oral contraceptives Thiazolidinediones, Neurologic/psychiatric agents, Antipsychotics, Antiepileptics. Metabolic syndrome as a manifold risk factor for developing cardiovascular diseases and nowadays publics and health providers are more aware of such a health risk. The use of medication for various clinical conditions and its association of developing metabolic syndrome have been identified.

Keywords: metabolic syndrome, insulin resistance

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EFFECT OF L- AMINO ACID OXIDASE FROM CROTALUS ATROX IN STREPTOZOTOCIN INDUCED ALZHEIMER'S DISEASE

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Abstract

Alzheimer's disease (AD) is a chronic neurodegenerative disease that causes cognitive impairment and gradual memory loss. L amino acid oxidases are a group of flavoenzymes obtained from the venom of the snake *Crotalusatrox*, which could indirectly synthesize acetylcholine neurotransmitter inside the brain.The aim of the study was to determine the effect of the enzyme L amino acid oxidase in cognitive impairment and neurodegeneration in streptozotocin (STZ) induced Alzheimer's model in rats and also to compare its effect with standard drug donepezil. Y-maze and elevated plus maze tests were employed to evaluate learning and memory in rats. The rats were sacrificed on day 21, biochemical parameters like reduced glutathione, nitrite, myeloperoxidase, malondialdehyde and acetylcholinesterase (AChE) inhibitory activity were estimated in rat brain homogenate. LCMS analysis were done to estimate the brain acetylcholine levels and histopathology of brain tissues were also performed. Streptozotocin administration showed significant alterations in behavioral, biochemical and histological studies. Treatment with L amino acid oxidase significantly prevented STZ mediated cognitive impairment possibly by attenuation of the oxidative damage and increase in acetylcholine levels in rat brain. Therefore, the study suggests L amino acid oxidase as a candidate compound in the development of therapeutic drugs for the prevention and treatment of AD.

Keywords: L amino acid oxidases; Alzheimer's disease; intracerebroventricular injection; streptozotocin.

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BLACK EYED PEA TRYPSIN CHYMOTRYPSIN INHIBITOR: A MIRACLE DRUG REVIEW

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Abstract

Black eyed pea trypsin-chymotrypsin inhibitor(BTCI)is a stable double headed bowman – birk inhibitor extracted from VignaUnguiculata seeds.It has a low molecular mass(9071Da)and 7 disulfide bonds accounting for its high stability. It subdue the cell viability of human breast adeno carcinoma cells by inhibiting the activity of proteosome 20s.BTCI has cytostatic effect at the G2/M phase of cell cycle,thus prompting a negative growth effect on cancerous breast cells. BTCI shows no cytotoxic effect in normal mammary cells. BTCI controls the ubiquitine-proteosome proteolytic pathway, causing damage to mitochondria,leading to increase in reactive oxygen species(ROS) production. Increased level of ROS and downregulation of ROS scavenger lead to oxidative stress favours apoptosis. BTCI affect NF-KB target Gene expression in invasive cells..BTCI inactivate the function of serine proteases by providing a reactive site, present in the canonical loop acts competitively as a pseudoanalogue substrate for the cognate enzyme.BTCI induces apoptosis in a compase- depletent manner.Mehdad ,Brumana et.al conducted a study in which MDH.MB231(highly invasive human breast cells),MCF-10A(normal mammary epithelial cells),MCF 7(human breast cells)were treated with BTCI. (citation :cell death discovery (2016)BTCI with its excellent ability to survive the digestive process is known to be an extraordinary protein. BTCI is thus the most promising cancer chemopreventive agent in humans and has shown its excellence in cancer prevention without any toxicity.

Key words: reactive oxygen species, VignaUnguiculata, chemopreventive agent

A REVIEW ON ALZHEIME'S DISEASE AND ITS THERAPEUTIC TREATMENT

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Abstract

Alzheimer's disease (AD) is developing gradually with various types of neurodegenerative disorder, which causes chronic disease in the late adult life. Pathologically it is characterized by intracellular neurofibrillary tangles and extracellular amyloidal protein deposits contributing to senile plaques. The chemotherapeutic treatment based on acetylcholinesterase inhibitors (donepezil, rivastigmine, galantamine) and N-methyl D-aspartate receptor antagonist (memantine) have led to promising investigational therapies. These drugs reduce the development of the disease, provide temporary relief but fail to achieve a definite cure. In the last couple of years, nanotechnology offers a novel strategy to treat AD disease by increasing the bioavailability of drug across the blood brain barrier in neuronal system of brain. This review article will highlight extensive discussion on the possible therapeutic treatment of alzheimers disease based on chemodrugs and ongoing efforts of nanotechnology to develop novel therapies.

Keywords: Alzheimer's disease, chronic disease, Drugs.

DIABETES MELLITUS – A DEVASTATING METABOLIC DISORDER

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Abstract

Diabetes mellitus is an endocrinological and/or metabolic disorder with an increasing global prevalence and incidence. High blood glucose levels are symptomatic of diabetes mellitus as a consequence of inadequate pancreatic insulin secretion or poor insulin-directed mobilization of glucose by target cells. Diabetes mellitus is aggravated by and associated with metabolic complications that can subsequently lead to premature death. This review explores diabetes mellitus in terms of its historical perspective, biochemical basis, economic burden, management interventions along with the future perspectives.

Diabetes mellitus is a combination of heterogeneous disorders commonly presenting with episodes of hyperglycaemia and glucose intolerance, as a result of lack of insulin , defective insulin action, or both . Such complications arise due to derangements in the regulatory systems for storage and mobilization of metabolic fuels, including the catabolism and anabolism of carbohydrates, lipids and proteins emanating from defective insulin secretion, insulin action, or both.

Keywords: Diabetes mellitus, metabolic complications, insulin.

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GLUCOSE-6-PHOSPHATE DEHYDROGENASE DEFICIENCY DISEASE- A BRIEF OVERVIEW

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Abstract
G6PD Deficiency is considered as the most frequently seen enzymopathy affecting the erythrocytes. It has high prevalence rates in the regions of tropical Africa, the Middle East, tropical and subtropical Asia. Severe G6PD deficiency is more common in males, inheriting hemizygous G6PD mutations will have defect in all their RBC's showing abnormal signs and symptoms. Triggering factors for haemolyticanaemia in G6PD deficient patients include medications and other chemical substances, fava beans, infections, etc. These patients show a spectrum of disorders including, acute massive hemolysis, neonatal icterus, renal failure, chronic haemolyticanaemia, etc. There are several tests available for diagnosing G6PD deficiency, genetic testing can be done to confirm the condition. After diagnosing, the patients should do routine checkups for good prognosis. Every G6PD deficient patients do not need treatment always, however identification and discontinuation of the triggering factors is very important to manage hemolysis. Treatment of the condition mainly focuses on the symptoms. All the hospital should utilize computerized supporting tools so that the patients with less common disease conditions like G6PD deficiency will receive rationalized treatment and will help to control this genetic disorder.
Keywords: G6PD Deficiency, erythrocytes, haemolyticanaemia, rationalized treatment.

BARRIERS THAT LIMIT THE UTILITY OF PD-1 AND PDL-1CHECKPOINT INHIBITOR THERAPY IN ADVANCED NON- SMALL CELL LUNG CARCINOMA (NSCLC)

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Abstract
Background: Lung cancer is the second most common cancer with NSCLC accounting for about 84% of all the lung cancer diagnoses. At an advanced stage, NSCLC respond minimally to chemotherapy and can become fatal. The interactions between immune system and tumour growth has been a topic of interest for researchers, which led to the development of immune checkpoint inhibitors for replacing or aiding conventional therapies. Majority of published clinical trials demonstrate the use of PD-1 and PDL-1 inhibitor therapy as a promising strategy that can counter the adverse clinical outcomes associated with chemotherapy. Still, challenges to the clinical utility of these agents remain unresolved. Their untapped potential to eliminate the brakes on immune system can be harnessed only by overcoming these barriers.
Objective: To determine the barriers that limit the utility of PD-1 and PDL-1 checkpoint inhibitor therapy in advanced NSCLC.
Method: The online databases Pubmed, clinicaltrials.gov and Cochrane library were searched to identify articles that focused on the limitations of checkpoint inhibitor therapy in NSCLC. Reference lists cited in relevant studies were also manually retrieved.
Results: Unfortunately, only 20% of patients showed significant response to mono-therapy using these drugs. The barriers include unpredictable efficacy, biomarker identification, tumour heterogeneity, acquired treatment resistance, complexity of NSCLC tumour microenvironment, gut micro-biota, lack of clinical study designs, high treatment costs and diversity of individual immune system.
Conclusion: A thorough understanding of these barriers can pave the way for future research studies to allow meaningful development of novel treatment regimens.
Keywords: NSCLC, immune checkpoint inhibitor, PD-1 and PDL-1 blockade, biomarkers
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MELIOIDOSIS-AN OVERVIEW IN THE CONTEXT OF BACTERIAL INFECTIONS

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Abstract

Recently, Melioidosis or Whitmore's disease, has been recognised with increasing frequency globally. It's an infection caused by the Gram-negative bacillus *Burkholderiapseudomonallei*, a soil dwelling bacteria endemic in tropical and sub tropical regions particularly in Australia and Thailand. Many cases were reported in India as well. The majority of patients present with sepsis, but specific clinical presentations and their severity vary depending on the route of bacterial entry, host immune function and bacterial strain and load. Signs and symptoms include cough with normal sputum or non productive cough, high fever, headache and general muscle weakness. It can remain dormant in humans for a prolonged period, disease may present years or decades after initial exposure Treatment requires long-term intravenous and oral antibiotic courses, followed by maintenance of therapy. Recent studies shows that *B. pseudomonallei*exhibits resistance to diverse groups of antibiotics, including third-generation cephalosporins. In addition, its relative resistance to quinolones and macrolides limits therapeutic options. Diagnosis is based on clinical and epidemiological features as well as bacterial culture. The organism is often misidentified by methods used routinely in clinical laboratories. Delays in treatment due to difficulties in laboratory diagnosis often lead to mortality that exceed 40% in some regions. Recently, a study analysed gene expression profiles of 25 gene targets including 19 immune response genes and 6 epigenetic factors in human hosts. The anti-inflammatory gene IL4 was up regulated in Melioidosis patients which may be helpful in proper diagnosis of the disease. This review provide an outline of melioidosis its effect on human beings, challenges faced in diagnosis, risk factors and its prevention.

Keywords: Burkholderiapseudomonallei, white mores disease, Melioidosis

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PREVALENCE OF CHEMOTHERAPY INDUCED CARDIOTOXICITY IN BREAST CANCER TREATMENT

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Abstract

Breast cancer is the most prevalent cancer in women and the second leading cause of death due to cancer. Therefore, it is a major public health issue and research in this field and advancement in the treatment regimen should be a priority. Chemotherapeutic drugs alone are potent but also used in combination with radiotherapy for increasing the survival rate and lowering the recurrence rate of cancer, but their use can be limited by cardiotoxicity. Anthracyclines, hormone therapy and trastuzumab are the chemotherapeutic agents with the most documented cardiac side effects. During mean follow up of 19yrs, 10.4-7.5% of women died of Cardio vascular disease. The incidence of doxorubicin induced cardiotoxicity was found to be 3-20%, while trastuzumab induced cardiotoxicity was found to be 2-28% resulting in Left ventricular dysfunction. Heart Failure occurred in 8% of patients who received an anthracycline with cyclophosphamide, however the incidence of Heart Failure increased to 27% with addition of trastuzumab. Treatment- and patient-related risk factors play a part in the development of Chemotherapy Induced Cardiotoxicity, therefore the probable risk has to be taken in consideration and given appropriate modification before the chemotherapy.Dexrazoxane can be used as a cardioprotectant during treatment. Liposomal and nonpegylated liposomal doxorubicin can be used as an alternative to suppress cardiotoxicity to an extent.In this article the common drugs with cardiotoxic potentional and monitoring are reviewed. This review also includes the use of cardioprotectant agents as prophylaxis and in the treatment regimen.

Keywords: Breast cancer, chemotherapy induced cardiotoxicity, anthracycline.

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REVIEW ON PHARMACOLOGICAL STRATEGIES FOR THE MANAGEMENT OF CANCER PAIN IN DEVELOPING COUNTRIES

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Abstract
Pain associated with cancer is often under treated especially in the developing countries where there are problems of poor economy, poor purchasing power of the citizens, absence of effective national health insurance schemes, poor manpower, fake adulterated and expired drugs, poor drug storage conditions; adverse temperature conditions combined with poor power supply which may affect drug efficacy. There is also poor understanding of the physiopharmacology of cancer pain management by healthcare providers. Assessment of the severity of the pain by location, oncological type, as well as psychosocial, emotional and environmental factors are necessary. Strategies for the management of cancer pain in developing countries.The pain often occurs from malignancy, from procedures done to diagnose, stage and treat the malignancy, and from the toxicities of therapy used in treating the cancer. The first priority of treatment is to control pain rapidly and completely, as judged by the patient. The second priority is to prevent recurrence of pain. Analgesic drugs are given 'by the ladder,' 'by the clock' and 'by the appropriate route' using the analgesic ladder guideline proposed by the World Health Organization (WHO). The pharmacological aspects of various drugs used in the management of cancer pain are discussed.

Key words: Pain, analgesic, neoplasms.

FINASTERIDE; MALE PATTERN HAIR LOSS

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Abstract
Finasteride is a widely used drug in dermatology for the treatment of androgenetic alopecia. Androgenetic alopecia (AGA), or male pattern baldness, is a common condition that causes many men to seek medical attention. It is characterized by hair follicles that gradually decrease in size and lead to baldness over time. Finasteride is a 5AR inhibitor that is approved by the FDA for androgenetic alopecia. The drug works by inhibiting the conversion of testosterone to DHT by blocking type II 5AR. Studies demonstrated that Finasteride was an effective treatment for men with AGA at an optimal dose of 1 mg/day.

Keywords: Finasteride, drug, dermatology, androgenetic alopecia.

REVIEW ON IMPACT OF GLYCEMIC ABNORMALITIES ON CORONARY ARTERY DISEASE

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Abstract
Diabetes mellitus (DM) is predictive of increased mortality for patients with coronary artery disease (CAD). To what extent this risk extends below the diabetic threshold (fasting glucose level [FG] <126 mg/dL) is uncertain.Impact Of Glycemic Abnormalities On Coronary Artery Disease. Diabetes mellitus is an independent risk factor for coronary artery disease. However, recently, it has been demonstrated that, irrespective of the presence of diabetes mellitus, altered glycemic levels are associated with adverse outcomes in patients suffering from stable coronary artery disease. Moreover, both hyperglycemia and hypoglycemia, either at the time of hospital admission or during coronary intervention, are linked to worse long and short-term prognosis in acute coronary syndromes. Many Efforts Aiming At The Monitoring Of The Glycemic Status And Prevention Of Excessive Glycemic Fluctuations Have Been Made And Striking Evidences On The Need For A Stricter Glucose Homeostasis Control Have Been Collected. The Purpose Of This Review Is To Summarize The Most Current And Significant Knowledge On The Monitoring Of Glycemic Status, Its Clinical Impact On The Prognosis Of Patients With Coronary Artery Disease And Its In-Hospital Management.

Keywords: Diabetes mellitus, coronary artery disease, glycemic levels, Homeostasis.

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REVIEW ON NANOROBOTICS IN DRUG DELIVERY SYSTEM FOR TREATMENT OF CANCER

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Abstract
This review aims at giving an overview of the present status of nanorobotics in cancer therapy. With the aid of biotechnology, molecular biology (as engineered organism) and molecular medicine can develop fully self-sufficient nanorobots/nanobots. The nanorobotics considered, as a wonderful vision of medicine in the future are an advanced submicron device generally made of bio-nanocomponents. It has an eminence future in the drug delivery technology target in cancer, the disease that leading cause of death among younger than 85 years. Nanorobots could carry and deliver large amounts of anti-cancer drugs into cancerous cells without harming healthy cells, reducing the side effects related to current therapies like damage of the conventional chemotherapy. Treatment includes hormone therapy, chemotherapy, targeted drug therapy, surgery or radiation. Conventional breast cancer treatments not only kill tumor cells but are also responsible for affecting healthy cells thus, causing fatigue, and hair loss, depression, and weight loss and nausea effects of chemotherapy and to treat various types of cancer. This paper presents a study on different approaches employed towards cancer treatment using nanorobots. Further, it provides an insight into the future scope in this field of study.
Key words: Nanorobotics, cancer therapy, application of nanorobots, nanorobotics for cancer

OVERVIEW OF GENETIC BASIS TOWARD EARLY DETECTION OF BREAST CANCER

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Abstract
Cancer is a socio economical burden in any nation. Out of that, breast cancer is identified as the most common malignancy worldwide among women irrespective of age. As women are an important segment in a community, the weakening of their strength toward the development of a nation is a critical problem in each nation. In this review, it was aimed to discuss the characteristics of cancer genome, cancer genetics, and cancer epigenetics in general and then focus on discussing both genetic and nongenetic factors responsible for the predisposition of breast cancer in humans. More emphasis was placed on genes responsible for the early onset of the disease and which can be used as genetic tools in the identification of the disease at an early stage. Then the context of genetic involvement toward the breast cancer occurrence before age of 40 years was highlighted accordingly. In addition to genetic testing, the review paid adequate attention to mention novel liquid biopsy techniques and other clinical, laboratory, and radiologic assessments. These techniques can be used in early detection and recurrence as well as the surveillance of the patients after primary therapies.
Keywords: breast cancer, genetic predisposition, early onset, recurrence.

REVIEW ARTICLE ON LUNG CANCER DIAGNOSIS AND TREATMENT

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Abstract
Lung cancer is the main cause of death in the United States and around the world. The two types of lung cancer are non-small cell lung cancer and small cell lung cancer (around 15%). In spite of advances in early diagnosis and standard treatment, non-small cell lung cancer is regularly analysed at advanced stages and has a poor prognosis. The treatment and prevention of lung cancer are major needs that can most likely be enhanced by a better understanding of the molecular process in cancer and development of cancer. Non-small cell lung cancer can be characterised into three subtypes: squamous-cell carcinoma, adenocarcinoma, and substantial cell lung cancer. Smoking causes a wide range of lung cancer, however, is most firmly connected with small cell lung cancer and squamous-cell carcinoma; adenocarcinoma is the most well-known in patients who have never smoked.
Keywords: Lung cancer, death, adenocarcinoma, squamous-cell carcinoma.

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REVIEW ON RELATION BETWEEN CANCER AND STRESS; THE PSYCHOLOGIST AND ONCOLOGIST PERSPECTIVE

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Abstract
Collective evidence points to a prominent role of stress in cancer growth and metastasis. Reasons of controversies are the coexistence in stressed patients of high risk habits, the sample size, the heterogeneity and the retrospective origins of these studies. Experimental data and clinical observations argue about the possibility of an interaction between psychosocial events and tumours. Psychotherapy may help to face up to stressful events, but its role e remains uncertain. Stress works through sympathetic nervous system and hypothalamic– pituitary–adrenal axis activation, along with related hormones, that have functionally and biologically significant impacts on the tumor microenvironment. This paper collects evidences through the hypothesis of correlation between stress, psychological factors and cancer focusing both on psychology and on molecular biology. Knowledge on stress induced neuro endocrine dynamics in the tumor microenvironment might allow the development of integrated pharmacological and bio-behavioural strategies to create more successful cancer therapies. Correlation between stress, psychological factors and cancer focusing on both psychology and molecular biology. Comprehensive literature review was finalized in May 2019. Medline was used for research. The literature search was limited to articles in English and human patients. Analysed and discussed the literature, taking into account the previously reported reviews on this matter. Literature revision, made separately by two oncologists and a psychologist, was provided to analyse the topic from two different points of view.

Keywords: Stress-induced disease, cancer, life events, immune system

REVIEW ON IMAGING AND CANCER

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Objective: The aim of cancer imaging should be to detect and image the smallest possible number of tumor cells, ideally before angiogenic switch. Multiple biomedical imaging techniques are used in all phases of cancer management. Imaging forms an essential part of cancer clinical protocols and is able to furnish morphological, structural, metabolic and functional information. Integration with other diagnostic tools such as in vitro tissue and fluids analysis assists in clinical decision-making. Hybrid imaging techniques are able to supply complementary information for improved staging and therapy planning. Image guided and targeted minimally invasive therapy has the promise to improve outcome and reduce collateral effects. Early detection of cancer through screening based on imaging is probably the major contributor to a reduction in mortality for certain cancers. Targeted imaging of receptors, gene therapy expression and cancer stem cells are research activities that will translate into clinical use in the next decade. Technological developments will increase imaging speed to match that of physiological processes. Targeted imaging and therapeutic agents will be developed in tandem through close collaboration between academia and biotechnology, information technology and pharmaceutical industries. Biomedical imaging, one of the main pillars of comprehensive cancer care**,** has many advantages including real time monitoring and accessibility without tissue destruction.
Method of Study: DATA COLLECTION- E-JOURNALS, GOOGLE FORMS.

Keywords: Imaging**,** Cancer, Diagnosis, Therapy.

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REVIEW ON ANTICANCER AND CARDIO-PROTECTIVE EFFECT OF LIPOSOMAL DOXORUBICIN IN THE TREATMENT OF BREAST CANCER

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Abstract

Background: Breast cancer (BC) is a highly prevalent disease, accounting for the second highest number of cancer-related mortalities worldwide. The anthracycline doxorubicin (DOX), isolated from Streptomyces peucetius var. caesius, is a potent chemotherapeutic drug that is successfully used to treat various forms of liquid and solid tumors and is currently approved to treat BC. DOX exerts its effects by intercalation into DNA and inhibition of topoisomerases I and II, causing damage to DNA and the formation of reactive oxygen species (ROS), resulting in the activation of caspases, which ultimately leads to apoptosis. Unfortunately, DOX also can cause cardiotoxicity, with patients only allowed a cumulative lifetime dose of 550 mg/m2. Efforts to decrease cardiotoxicity and to increase the blood circulation time of DOX led to the US Food and Drug Administration (FDA) approval of a PEGylated liposomal formulation (L-DOX). Both exhibit better cardiovascular safety profiles; however, they are not currently FDA approved for the treatment of metastatic BC. Here, I provide detailed insights into the mechanism of action of L-DOX and its most common side effects and highlight results of its use in clinical trials for the treatment of BC as single agent and in combination with other commonly used chemotherapeutics.

Objective: Anticancer and cardioprotective effect of liposomal doxorubicin in the treatment of breast cancer.

Method of study: e –journal, data collection ,Google form

Keywords: Anthracyclins,L-DOX,FDA,Cardiotoxicity

GENE REARRANGEMENT IN ANAPLASTIC LYMPHOMA KINASE: MAJOR TRIGGER FOR VARIETY OF CANCERS

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Abstract

Mutations are changes in DNA which can contribute to cancer development , progression and metastasis. Such kind of mutations were present in ALK gene which was the leading cause for most of the cancers. This study focus on the management of ALK positive cancer patients. To study the genetic rearrangement in Anaplastic Lymphoma Kinase present in various cancers which may prove to be useful for the devolpment of new therapeutic regimen. Genetic rearrangement involves formation of fusion protein that control gene expression. The ALK gene gives the information for making a protein called ALK receptor tyrosine kinase present in the cell surface play a major role in signal transduction. The overexpressed ALK gene due to formation of fusion gene results in continuous activation of the downstream signalling pathway and increase the proliferation of cell which is leading cause for most of the cancers. Thus ALK plays a crucial role in devolpment , progression of various cancer. Most of the mutations in the ALK gene are somatic mutations. Inhibition of these mutation or targeted therapy will help in management of various cancers.

Key words : ALK, ALK Fusion protein, Signal Transduction pathway

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REVIEW ON ANALYSIS OF ANTICANCER DRUGS

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Abstract

Objective: The determination of most commonly used anticancer drugs using various analytical methods are preferred.

Background: In the last decades, the number of patients receiving chemotherapy has considerably increased. Systematic investigation of efficient anticancer drugs could provide valuable insights into trends in the discovery of anticancer drugs, which may contribute to the systematic discovery of new anticancer drugs. Given the toxicity of cytotoxic agents to humans (not only for patients but also for healthcare professionals), the development of reliable analytical methods to analyse these compounds became necessary. From the discovery of new substances to patient administration, all pharmaceutical fields are concerned with the analysis of cytotoxic drugs. The use of methods to analyse cytotoxic agents in various matrices, such as pharmaceutical formulations and biological and environmental samples is used. Based on mechanism of action, both cytotoxic drugs and targeted drugs can be studied out. The determination of most commonly used anticancer drugs using various analytical methods are preferred.

Method of Study: Data Collection- E-Journals, Google Forms.

Keywords: Anticancer drug analysis ; Cytotoxic agent ;Pharmaceutical formulation ;Biological sample ;Environmental sample

ROLE OF BISPHOSPHONATES IN BREAST CANCER METASTASIS TO BONES

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Abstract

Background: Bone metastasis occurs in most of the women in their advanced stage of breast cancer. In addition to the chronic pain caused skeletal-related events (SREs) like pathologic fractures and spinal-cord compression may result in acute increases in pain. Bisphosphonates bind to the surface of the bone and impair osteoclast-mediated bone resorption, and reduce the tumor-associated osteolysis that's initiated by the event of skeletal metastases. In addition to preventing SREs, bisphosphonates palliate bone pain caused by spread of solid tumors.

Objective: To determine the role of bisphosphonates in the treatment of bone metastasis in advanced breast cancer patients.

Methods: Online databases such as Pubmed, New England Journal of Medicine ,Cochrane library were searched to find out about articles that focused on the use of bisphosphonates in the treatment of bone metastasis in breast cancer.

Results: In most of the randomized controlled trials and other studies it has been found that breast cancer patients with bone metastasis, who were given bisphosphonates especially pamidronate demonstrated better pain tolerance and greater reduction in fractures compared to the controls and demonstrated overall better quality of life compared to other and had reduced need for irradiation and surgeries.

Conclusion: Bisphosphonates are used effectively in the palliative care of patients with breast cancer with bone metastasis. Though used very often in patients abroad as well as a few states in India, it's not commonly used in Kerala . Hence should be considered in all patients with osteolysis secondary to malignancy.

Keywords: Breast cancer, bone metastasis, bisphosphonates.

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IN-VITRO CYTOTOXIC STUDY ON THE ROOT EXTRACT OF APAMA SILIQUOSA LAMK

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Abstract
Background: The demand for herbal medicines in many pharmaceutical sector is growing at a drastic rate due to their improved pharmacological actions, minimal side effects and cost effectiveness. The ever increasing cost of chemotherapy ruined the economic stability of many families. This led to the discovery of herbal medicines for cancer treatment. Tribes of western ghats have been using the roots of Apamasiliquosa for cytotoxic activity. Objective: To carry out the in-vitro cytotoxic study on the root extract of Apamasiliquosalamk by Brine shrimp lethality assay and by cell line study (MTT Assay).Materials& methods: Methanolic and aqueous extract of the roots of Apamasiliquosa were prepared by Soxhlet apparatus. These extracts were then used to prepare different concentrations and these different dilutions of extract was used to carry out brine shrimp lethality assay & the LC50 value was determined . Cell line study by MTT assay using cancerous cell line (MCF7 cells-human breast adenocarcinoma cells) & LC50 value was determined. Conclusion: LC50 value for aqueous and methanolic extract was found to be 102.32µg/ml & 91.20µg/ml respectively by brine shrimp lethality assay and the same by MTT assay was found to be 117.527µg/ml & 87.4056µg/ml respectively for breast cancer cell line(MCF7 cells). These led to the conclusion that both extracts showed excellent toxicity to the naupli and mild toxicity to cell lines.

Key words: Apamasiliquosa, soxhlet, brine shrimp lethality assay, MTT assay

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COMPARATIVE EVALUATION OF ANTI-INFLAMMATORY ACTIVITY OF VATSANABHA PURIFIED BY DIFFERENT METHODS

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Abstract
Objective of the study includes to collect and identify root tubers of *Aconitum ferox* (vatsanabha), To purify root tubers of *Aconitum ferox*, To prepare the alcoholic extract of purified Vatsanabha, To perform the phytochemical analysis of the extract,To evaluate the anti-inflammatory activity of ethanolic extract of Vatsanabha by various methods. Experimental methods are Purification of the crude drug By using cow's urine, By using cow's milk. Preparation of plant extract by coarsely powdered drug was extracted by means of ethanol using soxhlet apparatus. Determination of anti-inflammatory activity by Albumin Denaturation Method, HRBC Stabilization Method. Both the extracts purified by two different methods are found to have good anti-inflammatory activity in varying degree and show itself as good anti-inflammatory drug sources. From the studies, we can conclude that the Vatsanabha extract purified by cow's urine shows higher anti-inflammatory activity than the drug purified by cow's milk.

Key words: Vatsanabha, Anti-inflammatory, Cow's urine, Cow's milk, *Aconitum ferox*

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HISTONE MODIFICATIONS: THE DOUBLE EDGED SWORD IN GYNAECOLOGICAL CANCERS

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Abstract
Gynaecological cancers are one among the fatal cancers that affects women worldwide. It includes endometrial, ovarian, cervical, vaginal and vulvar cancers. Epigenetic aberrations play a crucial role in the development and progression of such cancers, which includes global genomic hypomethylation, Cytosine-Guanine (CpG) island promoter hypermethylation, changes in histone modifications and changes in chromatin-modifying enzymes. This review aims at elaborating the significance of epigenetic changes specifically the histone modifications, at H3K9, H3K27, H3K4 and others involved in gynaecological tumourigenesis. They can independently or synergistically act along with DNA methylation for repression of the tumour suppressor genes and possibly for the activation of various oncogenes like CLDN3, CLDN4, GATA4, etc. in gynaecological cancers. These modifications may pave the way in the future for the identification of biomarkers in early diagnosis and prognosis with an opportunity for targeted drug delivery. A systematic review was done using Internet based scientific databases. Relevant clues about the role of Histone modifications like acetylation, deacetylation, mono/di/trimethylation, demethylation of the histone tails (H3/H4) involved in tumour development and progression were reviewed.
Keywords- Gynaecological Cancer, Histone modification, Acetylation, Deacetylation, Methylation, Demethylation
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A LITERATURE REVIEW ON TRANSLATIONAL GENOMICS OF THE MALIGNANT RHABDOID TUMOURS AND ITS CURRENT PERSPECTIVES

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Abstract
Background: Malignant rhabdoid tumor is a rare childhood tumor that commonly starts in the kidneys but also can occur in other soft tissues or in the brain. Malignant rhabdoid tumor occurs most commonly in infants and toddlers; the average age of diagnosis is 15 months old .In rhabdoid tumours, nearly all cases are thought to develop from a single copying (translation) error of one gene, the SMARCB1 (INI1) gene. Each cell of the body contains two SMARCB1 genes. Both of these need to be damaged or altered to result in the development of a rhabdoid tumour
Objectives: To provide a overview about translational genomics of the rhabdoid tumours and its current perspectives
method of study: By reviewing
scientific and research publications- journals
Results and Conclusion: Once localized, tumors can be biopsied to assess risk and select therapy. Deployment of screening technologies in the clinical setting will depend on their ability to improve clinical outcomes in an efficient and cost-effective manner. Importantly, not only will such advances benefit patients and families affected by rhabdoid and related tumors, the results of such investigations are likely to be generalizable to a wide array of *SMARCB1*-dependent cancers and the epigenetic control of neoplasia in general.
Keywords: rhabdoid, *SMARCB1*,Translational genomics

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MOLECULAR DOCKING STUDIES OF PHYTOCONSTITUENTS IDENTIFIED IN LARGE CARDAMOM ON NOS3 AND GCH1

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Abstract
Objective: The present study was aimed to perform *in-silico* docking analysis of phytoconstituents from large cardamom with endothelial nitric oxide synthase and GTP cyclohydrolase for treating hypertension.
Materials and Methods: Seven phytoconstituents of large cardamom were identified by literature survey and were retrieved from Pubchem compound database. Way2Drug PASS online tool was used to study the mechanism analysis of standard drugs and phytoconstituents. The targets (eNOS and GCH1) was identified from Gene cards, NCBI and Protein data bank. Pharmacogenomic study was performed by use of genomics, metagenomics and environmental genomics. Docking analysis ADMET Tox prediction was performed using Accelrys Discovery Studio.
Results: By genomics study, gene locations, gene expression levels of NOS3 and GCH1 was studied. From environmental genomics it was concluded that Resveratrol and Sapropterin are the chemicals that cause highest gene mutations to NOS3 and GCH1 gene, respectively. Metagenomics suggests that Nocardia brevicatena, a microbe closely related to NOS3 and GCH1 genes so this may lead to a disease.Protocatechuic aldehyde, alpinetin and cardamonin were having good docking scores with NOS3 (1M9R) and GCH1 (1FB1) when compared to standard drugs L-Arginine, bradykinin, GTP. From the ADMETox prediction, protocatechuic aldehyde was found to be the best molecule because it had shown good absorption, solubility and was not hepatotoxic.
Conclusion: Based on docking studies protocatechuic aldehyde, alpinetin and cardamonin need to be studied further.
Keywords: Insilico docking, endothelial nitric oxide synthase, GTP cyclohydrolase, hypertension, large cardamom.

EXPLORING FLAVONOIDS AS A POTENTIAL CANDIDATE AGAINST NON-ALCOHOLIC FATTY LIVER DISEASE: A PRELIMINARY APPROACH WITH COMPUTATIONAL AND EX-VIVO MODELS

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Abstract
Objective: To study the effect of various phytochemicals under flavonoid category derived from plant source against Non-alcoholic fatty liver disease (NAFLD) .
Method: Computational analysis of different category of flavonoids were performed with human liver fatty acid binding protein (RCSB PDB ID: 3VG7 and 2LKK) to identify the most suitable candidate molecule using virtual library screening method. *In-silico* analysis showed that among the different category of flavonoids, Kaempferol was found to have good interaction energy and docking score with the selected human liver fatty acid binding proteins compared with the standard pharmacological agent, Vitamin E. To further confirm the effect; *ex vivo* analysis was performed using Precision cut liver slices (PCL's) as a pathophysiological model. The murine liver lobes were sliced into small pieces and pre-incubated in Krebs Ringer Buffer solution for 60 minutes at 37°c in shaker water bath. After pre-incubation, the liver slices were further incubated with free fatty acids (240µM), Vitamin E and Kaempferol respectively for 24 hours. Following 24 hours of incubation, the liver homogenate was assayed for different liver markers namely, ALT, AST, Triglycerides and Alkaline phosphatase etc. PCR analysis was also performed to check the influence of some of the pro-inflammatory molecules expressed during the NAFLD.
Conclusion: The study conclude that kaempferol can be used as an alternative to vitamin E as pharmacological agent in NAFLD I if validated properly through *in vivo* animal models.
Keywords: Non-alcoholic fatty liver disease, Precision cut liver slices, *in-silico, Ex vivo*.

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GASTROPROTECTIVE EFFECT OF SELECTED APPLE POLYPHENOLS: AN IN- SILICO AND IN VITRO STUDY TO REVEAL THE MECHANISTIC ASPECTS

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Abstract

Background: Peptic Ulcer (Pud) Is A Lesion And Localised Erosion Of Mucosal Region In The Lining Of The Stomach. Existing Drugs Like Ppi's, Histamine Receptor Antagonists Are Reported To Have Major Side Effects Like Heart Diseases, Hypersensitivity And Agranulocytosis. Choosing Dietary Sources As An Adjuvant Therapy Could Be A Better Option To Get Rid Away From The Existing Side Effects. Hence The Present Work Was Designed To Evaluate The Ulcer Healing And Anti-Inflammatory Property Of Major Polyphenols Present In The Apple.

Method: For *In Silico* Studies, Caffeic Acid, Ferulic Acid, Quercetin, Phloretin, Linoleic Acid, Epicatechin, Quercetrin, Rutin, Urosolic Acid Were Selected Based On The Lipinski's Rule Of 5. The Selected Ligands Were Docked Against The Gastrin Receptor (Rcsb Pdb Id: 5wrj). *In Vitro* Studies Were Performed In Rat Parietal Cells For H^+K^+Atpase Activity At A Concentration Of 10, 50, 100 µg/Ml.Pentagastrin (5µg/Ml) Induced H^+K^+Atpase Activity And Anti-Inflammatory Activity. Estimation Of Inorganic Phosphate Liberated From The Hydrolysis Of Atp By The H^+K^+Atpase Is Evaluated As Enzymatic Activity.

Results: Among all the phenolic compounds, caffeic acid, phloretin, ferulic acid and quercetin shows a better interaction in comparable with the standard drugs. *In vitro* studies of H^+K^+ATPase, pentagastrin induced H^+K^+ATPase and anti-inflammatory activity of selected polyphenols were performed. Caffeic acid, phloretin shows a concentration dependent decrease in the inorganic phosphate followed by the quercetin and ferulic acid as compared with the standard drugs. Phloretin and caffeic acid shows reduction in levels of nitrates at 100 µg/mL followed by quercetin and ferulic acid.

Conclusion: Our findings suggest that polyphenols like phloretin and caffeic acid present in apple shows an ulcer healing and anti-inflammatory activity. Considering apple as a dietary adjuvant, can exert a beneficial effect in prevention of ulceration via anti-inflammatory and ulcer healing property.

Keywords: Peptic ulcer, H^+K^+ATPase, phloretin and caffeic acid

BIOPRINTING AS AN ADVANCEMENT IN THE CANCER RESEARCH

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Cancer,the big threat to human population globally has been reported to increase the mortality rate. Even when the pharmaceutical industry has made relevant improvements in cancer therapy over the last decade, it still remains as a challenge to develop anti-cancer drugs and clinical practices effectively.2D cell culture models used to develop understanding of the disease but they often failed to accurately replicate human behaviours. Hence, 3D bioprinting, a technology which has the potential to mimic the in vivo micro environment with high accuracy has been invented. Bioprinting is a manufacturing process where the bio materials like cells and factors that promote growth are compiled to create living tissue that imitates natural tissue. This technology uses bioink which create structures in layer by layer method.These find a vital role in tissue replacement and cosmetic surgeries. It involves pre-bioprinting, bioprinting and post-bioprinting. The printing techniques include inkjet, extrusion or laser. This advancement contributes significantly in the medical field of tissue engineering by promoting for research to be done on innovative materials called bio materials. Bioprinting aims to print organs like heart, liver, lungs etc. in order to test new drugs directly and perhaps eliminating the need for testing in animals. It fills the gap for the need of donor organs. Overall, bioprinting is gaining a wide scope in the field of medicine due to its potentiality to produce complex organs and tissues.

Keywords: Bioprinting, Bioink,Inkjet,Extrusion,TissueEngineering,Biomaterials.

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ANTI-DIABETIC ACTIVITY OF SIMAROUBA GLAUCA: IN-VITRO APPROACH

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Abstract

Background*: Simarouba glauca* is a medium sized ever green tree with tap root system and cylindrical stem commonly known as paradise tree belonging to*simaroubaceae*family; it has a long history in herbal medicine in many countries. The present study design was to evaluate the in-vitro anti-diabetic activity of *simarouba glauca*. To examine the anti diabetic activity, samples were studied for their effect on inhibition of alpha amylase and glucose transport across dialysis membrane. Acarbose was used as standard drug. From the results of the study, it was inferred that, *simarouba glauca* possesses anti diabetic activity. Our current results indicate that the various bioactive constituents detected in the simarouba may be responsible for its in-vitro anti-diabetic effect. Thus, we can safely say that *simarouba glauca* may be potential candidate for development of future anti-diabetic compounds. However, still further studies and standardisation of the plant research may be required to develop them as medicine. Conclusion: In the present study, results indicate that the methanolic extract of *simarouba glauca*posses anti-diabetic properties. These activities may be due to occurrence of polyphenolic compounds such as alkaloids, terpenoids, flavonoids, tannins, and phenols. The present findings suggest that, the methanolic extract of *S.glauca* showed a significant inhibitory effect on alpha amylase and glucose diffusion in vitro thus validating the anti-diabetic activity.

Key Words: In-vitro anti-diabetic, simarouba glauca

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INSIGHTS INTO MECHANISM FOR LIPOMA: GENETIC INTERVENTIONS

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Abstract

Lipomas, benign soft tissue fatty tumours that are very common. They are most commonly found in the age group of 40 to 60 years and mainly in males. The exact cause of lipoma has not yet been diagnosed, but there is a chance that it can be due to genetic causes such as Familial Multiple Lipomatosis. Lipomas can sometimes be malignant and become Liposarcomas. Nevertheless, expert say only 50% chance of it. As of now, we can just say that liposarcomas are formed when there is an error in the genetic code of the particular fat cells, which then spreads body wide. The study on lipoma was helpful to examine the clinical significance of the expression of fusion genes in lipomas. In the study reviewed there were no intergroup differences in age, gender, body mass index, tumor size or location. The expression of certain genes are analyzed on the lipomas with the gene fusion transcripts, which are HMGA2/LPP, HMGA2/RDCI and HMGA2/NFIB. In this of about 98 % of cases were analyzed for the possible expression of HMGA2/LPP and LPP-HMGA2 fusion genes using a reverse transcription polymerase chain reaction. Even though the number of identified gene fusions involving HMGA2/LPP had increased, the prevalence of other genes have not documented. Overall, it showed non-enhanced adipocyte apoptosis and enhanced adipogenesis in lipoma tissue. It was also hinged that the lipoma tissue was deprived of several obesity-related incident such as Ischaemia, Macrophage infiltration etc. The increased angiogenesis or adipogenesis may be swayed by the micro environmental factors of adipose tumor.

Key words: Lipoma, Liposarcomas, Lipomatosis, Adipogenesis, Adipose tumor, Ischemia, Macrophage Infiltration

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A COMPREHENSIVE STUDY ON ORAL CANCER

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Abstract

Cancer is the most dreaded disease that occur in any individual at any part of their life .Oral cancer is the 11th most common cancer in the world. The WHO predicts a continuing worldwide increase in the number of patients with oral cancer ,extending this trend well into the next several decades. Oral cancer accounts for cancer that occur in any part of the mouth including mucosal lip, tongue , gum , floor of the mouth. Two third of the global incidence of oral cancer occur in low and middle income countries . India alone accounts for one - fifth of oral cancer cases. Chewing of betel quids with tobacco or without tobacco or areca nut chewing , alcohol consumption, smoking, use of oral snuffs infection with certain Human pappiloma virus are the major risk factors. The incidence is more common in men than in women. The observed trends in incidence and mortality among men and women are closely correlated with the patterns and trends in tobacco and alcohol use. Studies indicate that tobacco smoking in any form increases the risk of oral cancer twofold to tenfold in men and women. This is due to the presence of certain carcinogens in tobacco the most abundant and strongest being tobacco specific- N-nitrosonornicotine and 4,1,1 butanone . These are formed by N – nitrosation of nicotine the major alkaloid responsible for addiction to tobacco. Chronic trauma in the mouth also increases the risk of oral cancer. Some oral ulcers can also develop cancer. Signs anssympotmsincude bleeding, sore in the mouth that do not heal, lump or white patch in the mouth. Diagnosis include various screening test that helps in the early detection of cancer, Biopsy, Endoscopy, Certain imaging test. Treatment include surgery ,radiation therapies, Chemothrapy. This review aims to present the fundamental aspects of this cancer moving from definition ,epidemiology etiology, prevention ,risk factors ,complications, diagnosis, clinical presentation and treatment.

Keywords: Oral cancer, Epidemiology, Tobacco.

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ONCOLYTIC VIRUSES IN CELL COMMUNICATION PATHWAYS

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Abstract

Toxicity remains a major issue with current anticancer agents due to non-selective action. Immunotherapy is a profound development in anti-cancer treatment due to its ability to deliver therapy to specific cellular targets. Cancer immunotherapy is based around the concept of helping the immune system to recognize and attack certain cancer cells. Certain viruses have oncolytic or cancer-killing (Oncolytic) properties supported by observations that chickenpox infection improve the WBC (White Blood cells) count and lymph node status in patients with lymphocytic leukaemia, Measles caused an improvement in the case of leukemia, Hodgkin's, and Burkitt's lymphoma. The viruses kill neoplastic cells as well as trigger already existing but ineffective anti-tumor immune response against the tumor. When a virus infects a tumor cell, the virus makes copies of itself until the cell bursts. The dying cancer cell releases materials, such as tumor antigens, that allow the cancer to be recognized, by the immune system. A lot of research is going on in this field utilizing this property of virus to make new treatment options for cancer. Chinese state FDA (Food and Drug Administration) approved the first oncolytic virus-drug 'ONCORINE' an Adenovirus type 5 injection in 2005 for head and neck malignancy. In October 2015 the US FDA approved a genetically engineered herpes virus called talimogenelaherparepvec (T-VEC) to treat advanced melanoma. More viruses are under trial for their oncolytic potential. In this article we intend to portray the various altered pathways developed, by which the tumour cells gain the trait to bring about increased viral tropism and tumour toxicity.

Key Words: Toxicity, Oncolytic Virus, Immunotherapy, Tumour Toxicity, Specificity.

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STRATEGIES FOR TARGETING METABOLIC PATHWAYS IN TRIPLE NEGATIVE BREAST CANCER

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Abstract
TNBC is negative for all ER, PR and HER-2, there are no efficient targeted therapies at present. Triple negative breast cancer (TNBC) refers to any breast cancer that does not express the genes for estrogen receptors (ER), progesterone receptors (PR) and HER2/neu. This is what makes it more difficult to treat since most hormone therapies target one of the three receptors. There are 2 subtypes: basal-like and non-basal-like.OXPHOS (Oxidative Phosphorylation) is the metabolic pathway in which cells use enzymes to oxidize nutrients, thereby releasing energy which is used to produce ATP. It mostly takes place in the mitochondria.TNBC shows the expression of both glycolysis- and mitochondrial metabolism-related proteins in tumor cells with higher ratios of glycolysis type in basal-like type tumors and non-glycolysis type in non-basal-like type tumors. It has been found that in Mantle Cell Lymphoma (MCL) resistant to Ibrutinib exhibits increased OXPHOS. MD Anderson Therapeutics team discovered a potent OXPHOS inhibitor, IACS-010759, in order to inhibit oxidative phosphorylation. TNBC cells have high glucose uptake, increase lactate production, and low mitochondrial respiration was related with activation of mTOR pathway and decreased expression of P70S6K gene is reexpressed and their glycolytic pathway is reversed to oxidative phosphorylation. But in certain cases it has been found that lowered OXPHOS activity in TNBC cells renders them highly dependent on glycolysis (Warburg effect). In this review article, we are discussing the possibilities of targeting both glycolysis and oxidative phosphorylation in TNBC to bring out some effective treatments strategies.

Key words: OXPHOS, Glycolysis, TNBC, Warburg effect

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BIOLOGY, CHEMISTRY AND GENETICS OF LIPOPROTEIN DISORDERS: HYPOLIPIDEMIA

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Abstract
Hyperlipidemia and thereby artherosclerosis is the leading cause of cardiac illness and deaths. World wide, it causes deaths almost twice as many as those caused by cancer as 10 times as many as those caused by accident. Hyperlipidemia is an elevation of lipids in the blood stream and these lipids include fats, fatty acids, cholesterol, cholesterol esters, phospholipids and triglycerides. At 1% drop in serum cholesterol reduces the risk for CHD by 2%. Well delineated metabolic abnormalities owing to a single gene defect are rare, whereas multifactorial disorders influenced by the interaction of many genes and environmental factor predominant. This is especially true regarding lipoprotein disorders, which often have a complex etiology. The phenotype of these disorder often modulated by gene-gene and gene-environment interactions. Dietary changes ,gender, hormonal influences and variation of other gene loci are among the major sources of variation in phenotypic expression. Lipoprotein disorders of genetic etiology are the major interest because of their major impact on health. This review focuses on major forms of primary and familial dyslipoproteinemia with an emphasis on their atherogenic potential.

Keywords: Hyperlipidemia, artherosclerosis, cardiac illness and deaths.

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A LITERATURE REVIEW ON CHILDHOOD LEUKEMIA AND LYMPHOMA IN INDIA

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Abstract

Background: Leukemia and lymphoma are the most prevalent cancers globally among children. hese childhood cancers are increasing in magnitude over time and there arises a need to present a gist of an update on epidemiology of childhood leukemia and lymphoma incidence in the changing scenario. A descriptive epidemiological review of leukemia and lymphomas in terms of incidence as a recent update would be of help for clinicians and researchers in better understanding.

Objectives: To provide an updated review on incidence of childhood leukemia and lymphoma incidence from Population Based Cancer Registries (PBCRs) in India.

Method of Study: By reviewing scientific and e journals

Conclusion: A study compared survival of childhood cancer in Chennai, Bangalore and other parts of the world and found survival of the children is lower by 50% for leukemia and around 20% for Hodgkin's and non-Hodgkin's lymphoma compared to other developed countries . Preponderance of leukemia and lymphoma among Indian boys could be multifactorial. The possible gender bias cannot be ignored as such there may be differences in disease biology which could be hormonal as well as genetic. Assigned conditions for treatment, socioeconomic status, awareness and stage of disease were causes of this poor survival . Another study reported that more cases are presented in late stage of the disease . Lack of awareness, low socioeconomic status, less treatment facilities, compliance to treatment, poor nutritional status to tolerate chemotherapy could be other related factors in LMIC . As reported in Chennai survival study the increase in childhood cancer incidence in general might be due to newer facilities for diagnosis of CCH . It is observed that increase in incidence of childhood leukemia and lymphomas might be due to improved reporting of cases in recent years. In conclusion, the study supports the general trends on male preponderance for both childhood leukemia and lymphomas.

Keywords: Childhood cancer incidence,Lymphoma,Leukemia,India

A LITERATURE REVIEW ON THE ANTICANCER ACTIVITY OF TELMISARTAN

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Abstract

Background: Telmisartan, an angiotensin II receptor type 1 blocker, is often used as an antihypertensive drug, and it has also been characterized as a peroxisome proliferator-activated receptor-gamma (PPARγ) ligand. The purpose of this literature review was to find out the antitumor effects of telmisartan on cancer cells.Telmisartan has been reported to have antiproliferative activity in prostate cancer and renal cell carcinoma. The present review was designed to reveal, for the first time, the biologic and therapeutic effects of telmisartan on various cancers.

Objectives: To find out an overview on the anticancer activity of telmisartan. To review the effect of telmisartan on various cancers.

Method of Study: By reviewing various scientific, research publications and e-journals

Results and Conclusion: PPARγ belongs to a family of nuclear hormone receptors that include estrogen and thyroid hormone receptors. The present results demonstrated that among the ARBs tested; only telmisartan was able to induce the inhibition of cell viability of endometrial cancer cell lines. The inhibitory effect of telmisartan was reduced in the presence of a PPARγ inhibitor. It has also been demonstrated that telmisartan induced apoptosis and DNA fragmentation in human urological cancer . The mechanism by which telmisartan exerts its anticancer activity remains unclear. In urological cancer cells, telmisartan may mediate potent anti-proliferative effects through PPARγ. In prostate cancer cells, telmisartan interacted with some signal pathways; one to block AT1R as an ARB, and the other as a transcription factor acting as the PPARγ ligand with PPARγ dependent and independent interactions . Our results showed telmisartan induced DSBs and apoptosis. Those mechanisms plays important role in anticancer effects in endometrial cancer cells. It is also suggested that telmisartan might be a new therapeutic option for the treatment of endometrial cancer.

Keywords: (PPARγ) ligand, telmisartan, antiproliferative activity

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PHYTOCHEMICAL SCREENING AND ANTI-INFLAMATORY ACTIVITY OF Centellaasiatica

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Abstract

Centellaasiatica is a valuable medicinal herbaceous aromatic creeper which has been valued for centuries in ayurvedic medicine. Phytochemical analysis of *Centellaasiatica* (Apiaceae) plant extracts revealed the presence of various biochemical compounds such as alkaloids, flavonoids, glycosides, phenolic compounds, triterpenoids and saponin etc. Since phenolic compounds, triterpenoids and flavonoids have remarkable anti- inflammatory, anti-arthritic and antioxidant activities, so our present work aims at evaluating the in vitro anti-inflammatory activity by Human Red Blood Cell (HRBC) membrane stabilization. The inhibition of hypotonicity induced HRBC membrane lysis was taken as a measure of the anti-inflammatory activity. The maximum membrane stabilization of *Centellaasiatica* extracts was found to be 94.97% at a dose of 2000 µg/ml. The results show that the extracts of Centellaasiatica exhibited anti-inflammatory activities. *Centellaasiatica* is a profusely branched prostate herb consisting of active principles such as Vallarine, Asiaticoside, Sitosterol, Tannins, Oxy -asiaticoside. Asiaticoside is used in the treatment of leprosy. Sitosterol and tannin possess antiprotozoal and spasmolytic property. According to Siddha literature, its leaves are used in the treatment of syphilis, all types of fever, children's abdominal disorder, elephantiasis and hydrocele and these features are highlighted in this article.

Keywords: *Centellaasiatica*, Anti-inflammatory, HRBC membrane stabilization.

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INCREASED EMERGENCE OF LUNG ADENOCARCINOMA AND POLLUTANT PARTICULATE MATTER: A REVIEW

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Lung cancer evolves as a results of a series of alteration events that are being studied . However, the molecular pathological process of carcinoma remains incompletely outlined.It is the most typical reason behind world cancer-related mortality, resulting in over 1,000,000 deaths annually. Smoking is that the major reason behind pulmonary carcinoma however, as smoking rates decrease, proportionately a lot of cases occur in never-smokers. Adenocarcinoma is an increasing concern whose etiological factors are as observed extended beyond the smoking confines .The effect of the air pollutants and their pathway for the development of lung cancer is evident on exposure to these particles especially in the non-smoking community. Various studies from European, Asian, Australian population aided by the air quality index and particulate matter data substantiate the above findings. A major contributor will be exposure to the pollutant particle of particulate size less than 2.5micrometer and must be considered for future studies. In this review we focus to establish an etiological relation between air pollution and the increased incidence of lung cancer studied emphasizing the non-smoker population and consider the possible risk to the pregnancy and diabetes group.

Keywords: Adenocarcinoma, particulate size,pregnancy, diabetes.

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SNAKEBITE ENVENOMATION: PATHOPHYSIOLOGY MANAGEMENT & TREATMENT

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Abstract
Envenomation after snakebite is an underestimated and neglected public health issue responsible for substantial illness and death as well as socioeconomic hardship to impoverished populations living in rural and tropical areas. Scarcity and delay of administration of antivenom, poor health services, and difficulties with transportation from rural areas to health centers are major factors that contribute to the high case-fatality ratio of snakebite envenomation. This work reveals about the pathophysiology, treatment and management of snakebite envenomation. Cross sectional analysis of available guidelines and articles related to Snakebite Envenomation and it's management. Delayed medical management & lack of public awareness results in increased Mortality. Identification of the species of snake responsible for the bite is important for optimal clinical management. Antivenom is the only effective antidote for snake venom. Awareness about the appropriate first aid for snakebite is necessary.

Key words: Envenomation, Antidotes, Venom, Torniquet , First-aid.

CHENOPODIUM ALBUM LINN: AN UPDATED REVIEW

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Abstract
Chenopodium album Linn belongs to the family Chenopodiaceae and commonly known as Bathua, is widely distributed in tropical and sub-tropical parts of India. According to traditional literature, *Chenopodium album* Linn possesses acrid,aphrodisiac, digestive, diuretic, sweet and tonic. The plant is also useful in vitiated conditions of pittic, peptic ulcer, helminthiasis, dyspepsia, flatulence, strangury, seminal weakness, haemorrhoids, cardiac disorders and general debility. *C. albumLinn* containsamide alkaloid, apocarotenoids,ascorbic acid, b-carotene,b-sitosterol, catechin,campesterol,crytomeridiol, cinnamic acid, caffeic acid,ferulic acid,gallocatechin, 3 hydroxy nonadecylhenicosanoate, lupeol,p-coumaric acid, phenol, saponin, and syringaresinol. *C. albumLinn*shows anti-cancer activity, hepatoprotective activity, spasmolytic and analgesic activity, anti-bacterial activity, anti-inflammatory activity, antipruritic, laxative, carminative, diuretic, febrifuge, anti-rheumatic, diaphoretic, appetizer, amebicide, anti-malarial, anti-tumorous, ascaricide(kills ascaris parasitic worms), insecticidal. The oil of seeds is regarded as anthelmintic for hookworms, round worms and intestinal amoeba in veterinary medicines. Paste of seeds is useful for removing unwanted marks remain on the skin due to various causes. Paste of leaves is also regarded as effective in resolving inflammation of warm origin, itching, scabies, and pruritis. The plant is much esteemed as a pot-herb in piles. Seeds are considered as effective against jaundice, dropsy, dysuria and micturition. Decoction of seeds is regarded as advantageous in expelling dead fetus.The present study concluded as *Chenopodium albumLinn* to be most promising plant having distinguished medicinal values with extensive variety of pharmacological potentials that could be consumed in quite a lot of remedial purpose owing to its usefulness and safety.

Keywords: Chenopodium album Linn, jaundice, dropsy, dysuria and micturition.

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TECHNOLOGY LEADS TO EYE CANCER

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Abstract

Objective:To assess the nature and check how technology influences eye and how it leads to Eye cancer Technology now a days play a significant role in eye and and its characteristics.The radiations emitting from newly gadjets (smartphones, computer laptop, mobile phones etc) as blue light rays influence the gene called RB gene(Retinoblastoma Gene) .As this RB gene gets mutated, it will lead to gene mutation and improper translation process. The epidemiological studies states that 80% of students are the victim of uveal melanoma in U.S. Certain factors influence this uveal melanoma like the sitting position of the person while using gadjets, Blinking of eye , Staring at laptops etc. As these blue light rays induces mitotic cell divison and leads to uveal melanoma or Eye cancer. Blue light rays also induces DNA lesions in the gene Suggestion to Improve:The various preventable measures are taken to reduce the incidence of Uveal melanoma. One immediate relevance is the current debate surrounding Intraoccularlens(IOL). These implants are designed to filter out Blue light rays to protect the eye from cancer

Conclusion: In summary the technology is booming in this global and instantly effect the health of human being. Eyes are exposed to certain radiations and induces mitotic cell division. Chemical exposures and radiation in the working place of people has influnced to the Eye Cancer.

Keywords-Uveal melanoma, Technology, Mutation

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SIGNIFICANCE OF QUANTIFICATION OF AFLATOXINS IN HERBAL RAW MATERIALS AND FINISHED PRODUCTS

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Abstract

In recent times, the use of herbal products has increased in the belief that being natural they are safe and harmless. But unfortunately, herbal drug raw materials (HDRM) are prone to infestations by microorganisms. Aflatoxins are a group of secondary metabolites or mycotoxins produced by fungi such as *Aspergillus flavus* and *Aspergillus parasiticus* which are abundant in warm and humid regions of the world. A quarter of world's food crops are estimated to be affected by mycotoxins creating economical loss. Exposure to higher levels of aflatoxin contamination increases cancer incidence including risk of hepatocellular carcinoma. US Food and Drug Administration (FDA) allows aflatoxin at low levels in nuts, seeds, legumes because they are considered as " unavoidable contaminants". They set maximum allowable levels for aflatoxin in food for direct consumption at 20-300 parts per billion(ppb). Aflatoxins were received by joint FDA/WHO expert committee on food additives in 1987 (WHO 1987). Analytical methods for detection and quantification of aflatoxins B1, B2 (AFB) G1, G2 (AFG) includes TLC, HPLC, mass spectroscopy ELISA, electrochemical immunosensor e.t.c. So assessment of fungal and mycotoxin contaminants should be a part of quality check while selecting HDRM for manufacture of herbal products inorder to ensure the safety.

Keywords: HDRM, Mycotoxins, analytical methods, quality check

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MANAGING PUBLIC HEALTH RISKS AT THE HUMAN- ANIMAL- ENVIRONMENT INTERFACE

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Abstract
Zoonoses are of interest because they have increased virulence in populations lacking immunity. Hence, it is necessary to investigate on the public health risks at Human-animal-environment interface. An estimated 60% of emerging human pathogens are zoonotic. These pathogen can switch host by acquiring new genetic combinations that have altered pathogenic potential of host. We discuss causal factors of emergence or reemergence of zoonoses. To study the significant role in the prevention and control of zoonoses to obtain optimal health for people, animals and our environment. A cross-sectional study of the available literature cited from 1967- till present. Inclusion criteria containing publications, professional presentations, book chapters and various scientific reviews. Based on our analysis we found that, there is a great need for maintaining Hygienic and certain preventive measures in controlling the spread of health hazardous diseases in our society.

Key words: zoonoses, Immunity, Antimicrobial resistance, Cross species Transmission, Pathogens, Contamination, Outbreaks, Foodborne illness.

NOSOCOMIAL MRSA INFECTION IN NEONATES ASSOCIATED WITH SURGICAL PROCEDURES

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Abstract
Staphylococcus aureus infections were a common endemic disease, gradually it became an epidemic one and now it is growing like a pandemic explosion. The application of WHO schemes like modified active guidelines for infection control and networks for surveillance of antimicrobial resistance across the countries has been proven to be insufficient towards this scenario. MRSA is given a dangerous face because of the lack of treatments as this organism has shown its resistance power to almost all the antibiotics currently available. The risk factors for MRSA infection varies from person to person according to their physical and biological conditions. Neonates are a peculiar category of population having lowest immunity and needed special care. So the chances of getting HA-MRSA are more common in them. However there are number of ways exists for the transmission of MRSA. In our review we focus on the different surgical conditions of neonates that can lead to MRSA related morbidity and mortality. Here we discuss all the possible complications and risk factors of MRSA invasion associated with surgeries in neonates. Skin & soft tissue infections (SSTIs) developed from surgical sites, orthopaedic surgeries and their implants, laparotomy kind of open surgeries are found to be having more possibilities for MRSA transmission. This review opens up a discussion for preventing and eradication MRSA transmission.

Key words: HA-MRSA, Antibiotics, Guidelines, Surgeries

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CURCUMIN NANOFORMULATIONS IN DRUG DELIVERY

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Abstract
Development of new nanoformulations of traditional medicine with greater efficacy and lesser side effects remains a significant challenge of modern scientific research. Curcumin, a natural polyphenol and essential curcuminoid derived from the rhizome of *Curcuma longa* has a wide range of therapeutic efficiency, but has limited clinical applications due to its limitations like poor water solubility, rapid metabolism and rapid elimination which results in poor bioavailability upon oral administration. In this review we focus on the recent nanotechnology based implementations applied for overcoming the innate constraints of medicinal plant curcumin. This review describes various properties of curcumin including its chemistry, stability, degradation, various nanoformulations and its therapeutic applications. Nanoformulations enhance the aqueous solubility curcumin and tissue targeted delivery prompts to enhance the bioavailability, better drug conveyance, and quicker efficient treatment. The purpose of this review is to provide a brief overview of the plethora of research regarding the use of nano formulated curcumin in various drug delivery techniques.

Key words: Curcumin, *Curcuma longa*, Nanoformulations, Nanotechnology.

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NANOTECHNOLOGY IN CANCER THERAPY

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Abstract
Cancer is one among the foremost common chronic diseases in human being that accounts for millions of new cancer cases and deaths per annum worldwide. The present trend within the management of cancer includes surgery, radiation, and chemotherapy supplemented by biological and targeted therapy in specific cancers. Nanotechnology is that the study and use of structures between 1 nanometre and 100 nanometres in size. Nanotechnology is rapidly growing subdivision of technology that effects on many fields. In cancer treatment, Nano technologically modified methods are often used. One among the developing usage fields of nanotechnology is cancer treatment. Nanotechnology can possess to have better diagnosis with less harmful substances. It provides an efficient drug delivery to tumour cells with liposome and functionalised micelles. The pharmaceutical Nano systems used are carbon Nanotubes, metallic Nano particles, liposomes and dendrimers. The various Nano materials like Nano rods, Nanowires, tubes, fibres and quantum dots are used. Nanotechnology has big variety of applications in health and medicine, electronics, transportation, energy and environment, space and exploration. Nanotechnology features a great ability to enhance present approaches to diagnosis and treatment of patients with various sorts of cancer. Various therapeutic formulations have entered clinical trials and are expected to possess an impression on how cancer treatment is completed within the future. Our goal is to review the summary of present status of nanotechnology in cancer therapy.

Keywords: Nanotechnology, Cancer, Nano particles, Nano systems.

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DOWNSTREAM REGULATORY ELEMENT ANTAGONIST MODULATOR (DREAM): AN EMERGING NOVEL DRUG TARGET

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Downstream regulatory element antagonist modulator (DREAM) is a calcium binding protein with specific functions in different cell compartments. In the nucleus, DREAM is a calcium sensitive transcriptional repressor that binds to DNA and interacts with other nucleoproteins to regulate the expression of several genes such as prodynorphine,fos b gene. Outside the nucleus it interacts with presenilins to regulate amyloid beta protein precursor and with kv4 potassium channels to regulate their membrane expression and gating. DREAM is preferentially expressed in CNS, as well as in non-neuronal tissues. DREAM reported to interacts with several proteins that regulate apoptosis. The therapeutic potential of DREAM is studied in various diseases where an altered apoptosis is reported as the major reason. Experimental evidences suggest that down regulation of DREAM was found to be cause for Alzheimer's disease. DREAM also has a novel non-transcriptional a role in homeostasis and thrombosis.DREAM protein plays a widespread role in pain modulation in multiple tests of pain behavior.Studies in myometrial and amnion cells suggest that DREAM is involved in the production of proinflammatory and prolabour mediators induced by IL-1B, and NF-B and has a role in preterm birth.Dyskinesia is the major side effect associated with L-DOPA administration. Experiments in DREAM protein over expressed transgenic mice showed reduction in L-DOPA induced dyskinesia. So these experimental evidences suggest the potential of DREAM as a drug target.

Key words: DREAM, Transcriptional repressor, Apoptosis

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A REVIEW ON PHYCOCYANOSPHERE: A BOON FROM DULSE

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Abstract
Phycobiliproteins are a group of water soluble proteins with an associated chromophore, responsible for the light-harvesting in cyanobacteria. The identification and quantification of these pigments is very interesting for the large number of applications, in the field of nutrition, food technology, clinical and immunological analysis, and pharmaceutical agent. C-PC demonstrates various pharmacological activities, and the mechanisms underlying their effects have been extensively investigated by scholars. C-PC can inhibit COX-2, modulate the expression of some genes or proteins, and scavenge free radicals, which are associated with diseases, such as tumor, inflammation, CVD, and cataract. However, the main mechanism involved in fighting a specific disease and the mechanism of interaction between different diseases have not yet been well explained. Elucidating the interaction among these mechanisms may improve the effective usage of C-PC and avoid some side effects, although no obvious side effects and toxicity have been found to date. Given the pharmacological effects of C-PC and its property of being natural, nontoxic combination of C-PC with other known drugs that treat a particular disease well has become a trend. Here, the separation and purification, physicochemical properties, physiological and pharmacological activities, and some applications are reviewed to provide relevant basis for the development of natural medicine and applied products.

Key words: Algae, Phycobiliprotein, Production, Isolation, Applications, Products.

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CONTROVERSIAL DRUG PLANTS

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Abstract
Controversy, a state of prolonged public disagreement or heated discussion. Plants are known by different names in various parts of the country. It has created controversies among plants. In Ayurveda, controversial plants are called as Sandigdhadravyas . The purpose of this study gives the importance of proper identification for a single drug in the drug manufacturing section. Here, in this review controversies related Arjuna, Asoka, Chitrak, Rasnaand Kiratatikta has been discussed because of the importance of above drugs in the Ayurvedic pharmaceutical market. There are four drug varieties in the name of Arjuna are used. They are *Terminalia arjuna, Terminalia tomentosa ,Sterculiaurens and Lagerstroemia flosreginae.* From the four drugs, *Terminalia arjuna* is the source for genuineArjuna bark.The two controversial varieties of Asoka are *Saracaasoka* and *Polyalthialongifolia*, it was found that *Saracaasoka* being an endangered plant, *polyalthialongifolia* can be considered as an adulterant. In Chitrak, *Plumbago zeylanica, Plumbago auriculata* and*Plumbago scandens* are the three varieties commonly seen of which *Plumbago zeylanica* has greater potential activity. In the name of Rasna, there are a number of plants are used. Mainly we found that*, Alpiniagalanga* and *Pluchealanceolata* are main controversial plants of Rasna and it is still under doubt. *Swertiachirayita, Andrographis paniculata* and *Swertiaangustifolia* are the three controversial varieties of Kiratatikta. *Swertiachirayita* promote superior quality in therapeutical aspects.

Keywords: Controversy, Arjuna, Terminalia, Asoka, Plumbago, Rasna, Swertia.

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PISTIA STRATIOTES: A PROMISING DRUG OF CHOICE FROM AQUATIC SOURCE

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Abstract
Pistia stratiotes commonly known as water lettuce is one of the most common aquatic plant found in Kerala. Pistia stratiotes is a highly potential and multiuse plant described in traditional system but its medicinal value is not much common among the population . It has been used as a medicine in various diseases for the treatment of eczema, leprosy, piles, stomach disorder and inflammation. This review article is an assemblage of the updated information regarding phytochemical, pharmacological, utilization and management techniques of Pistia stratiotes. The various pharmacological studies conducted by researchers are successful in substantiating their traditional use such as anti-inflammatory, diuretic, antimicrobial, anti dermatophytic, antioxidant, anticancer. These results are very encouraging and must studied broadly to determine the phytoconstituents responsible for these activities and to reveal other potential therapeutic effects and hence proving its proficiency to become a promising source of drug in the near future .

Key words: Pistia stratiotes, Traditional system, Phytochemistry, Pharmacological activities.

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EFFICACY AND CHALLENGES OF OPIOID THERAPY IN THE MANAGEMENT OF CHRONIC NONCANCER PAIN (CNCP)

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Abstract
Chronic Noncancer Pain (CNCP) is seldom understood condition in which the patient feels pain for prolonged periods of time despite the healing or complete absence of demonstrable tissue damage. Although several pharmacological and non-pharmacological treatment modalities are being deployed in the prevailing situation, efficacy of opioids in the management of CNCP always put the physicians in a dilemma. The judicious use of opioid is very effective for the management of chronic non cancer pain as it render a spectrum of clinical benefits to those patients with gruelling pain.The aim of this review is to evaluate the role and use of opioids in the management of chronic non cancer pain. We had evaluated the most recent research and review works related to the use of opioids in CNCP. The review works sequitur that opioids are the best tool for the management of CNCP.The main challenge faced by the physicians in clinical practice while prescribing opioids is that its tendency to foster the abuse potential in chronic use.Due to the misuse, physicians have some reluctance to prescribe opioids.If there is a development and implementation of abuse-deterrent formulations (ADFs) of opioids in India, then it would be a real perquisite to both physicians & patients.

Key words: Chronic Noncancer Pain, Opioid, Misuse, Abuse-Deterrent Formulations.

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TISSUE SCAFFOLDS IN WOUND HEALING

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Abstract
Tissue engineering uses a combination of various technologies and methods to improve or replace damaged biological tissues. Tissue-engineered skin substitutes promote the healing and rapid recovery of cutaneous wounds. Many important researches and discoveries are made in the past decades but currently available skin substitutes for wound healing often suffer from a range of problems including wound contraction, scar formation, and poor integration with host tissue. Engineering skin substitutes by tissue engineering approach has relied upon the creation of three-dimensional scaffolds as extracellular matrix (ECM) analog to guide cell adhesion, growth, and differentiation to form skin functional and structural tissue. The three-dimensional scaffolds has various advantages like covering the wound, giving a physical barrier against external infections as wound dressing, providing support both for dermal fibroblasts and the overlying keratinocytes for skin tissue engineering. The synthesis methods of tissue scaffolds include methods like Nano fibre self-assembly, Solvent casting and particulate leaching, Gas foaming, Electro spinning, CAD/CAM technologies, Laser assisted bio printing, etc.A successful tissue scaffold should exhibit appropriate physical and mechanical characteristics and provide an appropriate surface chemistry, nano and microstructures to facilitate cellular attachment, proliferation, and differentiation. A variety of scaffolds have been fabricated based on materials ranging from naturally occurring ones to those manufactured synthetically.

Key words: Tissue engineering, extracellular matrix, Electro spinning, scaffolds

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EFFECTS OF MEDICINAL PLANTS IN DRUG INDUCED NEPHROTOXICITY: A REVIEW

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Abstract

The common cause for acute kidney injury is nephrotoxicity induced by drugs, mainly Aminoglycoside antibiotics, chemotherapeutic agents, radiocontrast media and nonsteroidal anti-inflammatory drugs *etc*. The main pathogenic mechanisms of nephrotoxicity are changes in glomerular hemodynamic, tubular cell toxicity, inflammation in glomerulus crystal nephropathy and rhabdomyolysis. Medicinal plants are the main source for drug development due to the presence complex chemical constituents such as tannins, flavanoids, steroids and alkaloids. In recent years, many herbs are used as nephroprotective agents due its antioxidant activity. On the curative effects of a variety of medicinal plants against drug-associated nephrotoxicity, we aimed to review the nephroprotective medicinal plants on certain drug induced nephrotoxicity like aminoglycoside antibiotics, chemotherapeutic agents and non-steroidal anti-inflammatory drugs.

Keywords: acute kidney injury, nephrotoxicity, gentamicin, cisplatin, medicinal plants

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NANOCOSMETICS: AN INNOVATIVE APPROACH TOWARDS PERSONAL CARE

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Abstract

Nanotechnology is an imminent science deals with the manipulation of molecules in nanoscale around 80,000 times smaller than the size of a human hair. The use of nanotechnology has entered a new avenue across various streams of science, including electronics to medicine and has now found number of applications in the field of cosmetics by holding the name of nanocosmetics. Nanotechnology in cosmetics offers the advantage of diverse products with aesthetic appeal, high skin penetration, solubility and high bioavailability. Some popular categories of nano cosmetics include skin and hair care products like lipsticks, sunscreen, anti aging creams, hair dyes, hair colorants etc. Different types of vesicles employed in cosmetics include nanosomes, nano sponge , nano structured lipid carriers, gold and silver nano particle , nano sphere , liposome, solid lipid nanoparticles etc. Our review, emphasis on the types of nanomaterial used in cosmetics by various cosmetic brands, the potential risks associated with the products and the regulations undertaken to overcome them.

Key words: nanotechnology, cosmetics, nanosomes, liposome, nano structured lipid carriers.

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A REVIEW ON PHARMACOLOGICAL ACTIVITIES OF MORINDA CITRIFOLIA Linn.

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Abstract

Morindacitrifolia, also known as noni plant belongs to the family of rubiacae. The noni plant is a small, shrubby tree and native to Asia, Australia and Polynesia. This plant possesses many pharmacological activities such as antimicrobial, antioxidant, anticancer, antidiabetic and antihyperurecimic, etc. The antioxidant property of *Morindacitrifolia*can be determined by cell proliferation assay and DPPH free radical scavenging assay. The antidiabetic property of *Morindacitrifolia*can be determined by serum analysis, muscle differentiation and glucose uptake assay, westernblot analysis and also by peroxisome proliferator activated receptor (PPAR)-γ transcription activity assay. Antiviral activity of *Morindacitrifolia* can be determined by *invitro* xanthine oxidase inhibitory activity. These findings suggest that *Morindacitrifolia* is the most important medicinal plant which has diverse uses.

Keywords: Noni, *Morindacitrifolia*, DPPH, Antimicrobial, Antioxidant, Anticancer

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PHYTOSOMES- A NOVEL APPROACH TO HERBAL DRUG DELIVERY SYSTEM

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Abstract

Phytosomes are novel drug delivery system containing hydrophilic bioactive phytoconstituents of herbs surrounded and bound by phospholipids (phosphatidylcholine). Most of the bioactive constituents of phytomedicines are flavanoids, these are poorly absorbed due to their poor miscibility with lipids. Phytosomes makes it lipid, compatible molecules with phosphatidyl choline (PC). PC is not merely a passive carrier for the bioactive flavanoids of the phytosomes, but is itself a bioactive nutrient with documented clinical efficacy for liver disease, including alcoholic hepatic steatosis, drug-induced liver damage and hepatitis. Phytosomes or herbosomes are advanced and novel form of botanicals and phytoconstituents that are better absorbed both orally, topically and transdermally. Phytosomes have improved pharmacokinetics and pharmacological parameters and having wide scope in cosmeticology. Phytosome technology has been effectively used to enhance the bioavailability of many popular herbal extracts including milk thistle, *Ginkgo biloba*, grape seed, green tea, hawthorn, ginseng etc. The preparation methods of phytosomes are non-conventional, simple and reproducible. Many areas of phytosomes are to be reported in the future in the prospect of pharmaceutical application. The phytosome technology forms a link between the conventional drug delivery systems of phytoconstituents and novel drug delivery system.In this review, we described about various methods employed in phytosomal preparation and characterization along with the phytosomal advantages over conventional herbal extracts.

Keywords: Phytosome; Phosphatidylcholine (PC); Phospholipid complex; Bioavailability; Flavonoids

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A LITERATURE REVIEW ON CHILDHOOD LEUKEMIA AND LYMPHOMA IN INDIA

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Abstract
Background: Leukemia and lymphoma are the most prevalent cancers globally among children. hese childhood cancers are increasing in magnitude over time and there arises a need to present a gist of an update on epidemiology of childhood leukemia and lymphoma incidence in the changing scenario. A descriptive epidemiological review of leukemia and lymphomas in terms of incidence as a recent update would be of help for clinicians and researchers in better understanding.
Objectives: To provide an updated review on incidence of childhood leukemia and lymphoma incidence from Population Based Cancer Registries (PBCRs) in India.
Method of Study: By reviewing scientific and e journals
Conclusion: A study compared survival of childhood cancer in Chennai, Bangalore and other parts of the world and found survival of the children is lower by 50% for leukemia and around 20% for Hodgkin's and non-Hodgkin's lymphoma compared to other developed countries . Preponderance of leukemia and lymphoma among Indian boys could be multifactorial. The possible gender bias cannot be ignored as such there may be differences in disease biology which could be hormonal as well as genetic. Assigned conditions for treatment, socioeconomic status, awareness and stage of disease were causes of this poor survival . Another study reported that more cases are presented in late stage of the disease . Lack of awareness, low socioeconomic status, less treatment facilities, compliance to treatment, poor nutritional status to tolerate chemotherapy could be other related factors in LMIC . As reported in Chennai survival study the increase in childhood cancer incidence in general might be due to newer facilities for diagnosis of CCH . It is observed that increase in incidence of childhood leukemia and lymphomas might be due to improved reporting of cases in recent years. In conclusion, the study supports the general trends on male preponderance for both childhood leukemia and lymphomas.
Keywords: Childhood cancer incidence,Lymphoma, Leukemia,India

SMURFS (SMAD UBIQUITINATION REGULATORY FACTOR)

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Abstract
The damage to cells caused by free radicals, especially to DNA, plays a role in development of Cancer a disease in which abnormal cells (free Radicals) divide uncontrollably and destroy body tissue. “Smad Ubiquitination Regulatory Factor” 1 or “SMURF1” and “SMURF2” are HCET type E3 ubiquitin ligases and are both “SMURFS” were initially identified to regulate Smad protein stability in TGF-β/BMP signaling pathway. SMURFS act as either potent tumor promoter or as Tumor Suppressor by regulating Biological process that includes metastasis, apoptosis, cell cycle, senescence and genomic stability. In recent years “SMURFS” have exhibited E3 Ligases dependent and independent activities in various kinds of cell. The regulation of SMURFS activity and expression has therefore emerged as Hotspot in tumor biology research.On further analyses of SMURFS’ biological function and influences on molecular pathways could provide novel therapeutic targets and paradigms for cancer diagnosis and treatment.In this review, we summarize these milestones findings and in turn reveal new ventures for the prevention and treatment of cancer by regulating “SMURF”.
Keywords : Ubiquitination ,paradigms , tumor biology research , Smad protein
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HORMONES AS ADJUVANTS IN ANTICANCER THERAPY

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Abstract

Objective: To understand role of hormones in anticancer therapy

Method: Systematic literature review on the topic.

Hormone therapy is used in prostate and breast cancers. This can be used as adjuvants with other cancer treatments. The treatment type depends upon the type of cancer, and its spreading, if it uses hormones to grow and presence of other health problem. Hormone therapy falls in 2 broad groups, those that block the body's ability to produce hormones and those that interfere with how hormones behave in the body. Hormone therapy can make a tumor smaller before surgery or radiation therapy-Neo adjuvant therapy. It can lower the risk of recurrence of cancer after main treatment-Adjuvant therapy .It destroys cancer cell that spreads to other parts of the body.

Hormone therapy can be given as pills. It can be given as injection, by a shot in a muscle including arms, hip, thigh or fatty part of arm, leg or belly. Surgery can be done to remove organs that produce hormones. Hormone therapy is used to lessen the chance that cancer will return .It can prevent symptoms in men with prostate cancer who are not able to receive surgery or radiation therapy.

Conclusion: Hormones can be used as adjuvants in anticancer therapy.

Keywords: Adjuvants, breastcancer, prostate cancer, neoadjuvant therapy.

CHLOROVIRUS: EMERGENCE AS PATHOGEN PYRAMID

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Abstract

Chlorovirus is avowed as chlorella virus, a genus of giant dsDNA viruses in the family phycodnaviridae. It is Acanthocystis turfacea *(*ATCV – 1) DNA known to be large DNA viruses. Analysing the virus infected personage unveiled, decline in visual processing ability and reduced visual motor speed furthermore synaptic plasticity. Pathogen pyramid is the substantial core for capturing the emergence of novel virus. It inheres four levels involving; exposure of humans to a novel pathogen, viruses having capability of infecting humans. Third levels comprises of viruses neither vitiate humans but are also transmitted from one human to another. Level four intertwined to viruses which are endemic in human populations. The species due to its substantial influence have made a pavement in pathological pyramid .Chlorovirus barge in the pyramid by contamination of food and water. The rate of such exposure is determined by coalescence of the distribution and ecology of the non-human host and human activities. Contagion manipulates the gene expression making aberration in the cognitive functioning. Therein lays permutation in the cdk5 pathway, which aids with learning process, bearing alterations in the dopamine pathway. Transmission cause major out breaks enforcing epidemic spread. The revelation of this apparent human–ATCV-1 association led us to conduct further investigations in humans and in mice by using high throughput sequencing methods, PCR procedures, and immunological analyses leading to bewildering facts.

Keywords: cdk pathway, Dopamine pathway, Immunological analyses

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ABSCOPAL EFFECT: IMMUNE MECHANISM OF RADIOTHERAPY

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Abstract
Abscopal effect is referred as a systemic antitumirogenic response that reflects the retrogression of non-irradiated metastatic abrasion at the site distant from primary site of irradiation. According to oncology, abscopal effect is referred to the ability of localized radiation to activate systemic antitumor effect, whereas from biological view point, the term refers to induction if genomic instability, cell death and oncological transformation in normal tissue. Abscopal effect varies significantly depending upon the condition of the patient, different types of cancer and difference in the treatment. The mechanism for abscopal effect is still not clear, though researchers believe on the underlying immune response dependent on the microenvironment (normal cells surrounding the tumor) plays a significant role. Modern regimens were interested in the combination of radiotherapy and immunotherapy. This review will focus on the biological rationale behind abscopal effect and immune response of radiotherapy.

Keywords: Antitumirogenic, Metastatic

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TAKAYASU'S ARTERITIS

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Abstract
Introduction: Takayasu's Arteritis is a rare, chronic, large vessel vasculitis that predominantly affects aorta and its branches. Absence of peripheral pulses has also given it the name pulseless disease. The inflammatory lesions in Takayasu's Arteritis originate in the vasa vasorum and are followed by cellular in filtration. Exact etiology is unknown. Underlying pathologic process is inflammation. There are no specific test to diagnosis Takayasu's Arteritis as it usually present with nonspecific symptoms fatigue, fever, weight loss, and malaise, weakness and vision changes. The gold standard investigation done in Takayasu's arteritis is Angiography. Takayasu's Arteritis has long been considered as a common disease, rather specific to the Far-East; however recent studies shows that disease can be seen in all ethnicities around the world with increase in prevalence rates. Now days it would not be fare to consider Takayasu's Arteritis as a rare disease. Glucocorticoids with subsequent tapering dose are mainstay of medical treatment; however in some cases additional therapy becomes necessary.

Key words: Takayasu's arteritis, Vasculitis, Vasa vasorum

PHARMACOEPIDEMIOLOGY OF ANTIBIOTIC USAGE IN VENOMOUS SNAKE BITE CASES: A MULTICENTRE STUDY IN KERALA

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Abstract
Introduction: Different antibiotics were used in snakebite cases. There were several conflicting recommendations on the use of antibiotics in snake bite victims
Objective: To identify the pharmacoepidemiology of antibiotic usage in venomous snake bites in different hospitals of Kerala
Methodology: Study time: 10 months
Study site: Selected 4 hospitals in Central Kerala (Caritas hospital, Paalana hospital, LF hospital and Charis hospital)
Study design: Retrospective, Observational study
Result: All cases of venomous snake bite cases admitted in general medicine department of selected four hospitals from January 2017 to December 2017 were included in the study. About 26 different types of antibiotics were used. Ornidazole was the most commonly used antibiotic (14.34%) followed by piperacillin (11.81%), metronidazole (11.39%) and ampicillin (10.33%). Other antibiotics used are Cefixime (8.94%), Linezolid (8.64%), Amoxicillin and Clavulanic acid (7.08%), Cloxacillin (5.06%), Cefuroxime (2.95%), Ceftriaxone (2.53%), Azithromycin (1.47%), Ofloxacin (1.26%), Cefoperazone (1.2%), Meropenem (0.63%), Fusidic acid, Vancomycin, Colistin and Clotrimoxazole (0.42%), Levofloxacin, Soframycin, Clindamycin, Ciprofloxacin, Imipenem, Bacitracin and Fluconazole (0.21%). Different formulations of antibiotics used are injection (65%), oral (30%), topical and eye drops (2%). Most of the cases were used more than 3 antibiotics. According to percentage of antibiotics used more than 3 in selected four hospitals of Kerala, Paalana hospital (97.67%), Caritas hospital (29.411%), LF hospital (8.57%) and Charis hospital (6.66%).CONCLUSION: There is a need of region specific antibiograms developed to treat snake bite cases in order to prevent patients from progressing to cellulitis which leads to additional hospital burden.

Keywords: Pharmacoepidemiology, snakebite, formulations.

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NEPHROTIC SYNDROME: AN UPDATE

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Abstract

Nephrotic syndrome (NS) or Idiopathic Nephrotic syndrome (INS) is one of the most common glomerular diseases of the kidney in children and adults that results from increased permeability of the glomerular filtration barrier. It is characterized by 4 major clinical characteristics that are utilized in establishing the diagnosis: proteinuria, hypoalbuminemia, edema, and hyperlipidemia. The target cell of nephrotic syndrome is the glomerular podocyte. INS can be split off into those with a single-gene defect, of which currently at list 53 genes are known to be causative, and caused by the presence of a still-unknown circulating factor or factors. Most cases of NS consider idiopathic or primary; membranous nephropathy and focal segmental glomerulosclerosis are the most common histologic subtypes of primary NS in adults. Despite a lack of evidence-based guidelines, treatment consisting of sodium restriction, fluid restriction, loop diuretics, angiotensin-converting enzyme inhibitor or angiotensin receptor blocker therapy, and careful assessment for possible disease complication is appropriate for most patients. Renal biopsy is often recommended. Immunosuppressive treatment, including corticosteroids, is often used for NS. Ayurvedic polyherbal formulation with properties of immunomodulator, nephroprotective and antioxidant properties can prove more beneficial in treating steroid-dependent or resistant cases of NS, as to add on therapy with modern therapeutics drugs for better results.

Keywords: Nephrotic syndrome, Glomerular Diseases, Immunosuppressive treatment.

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ZOMBIE –DRUGS WHICH TURNS PERSON TO CANNIBAL

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Abstract

Zombie drug or flakka(alpha pyrolidinovalerophenone) a psychoactive drug that constitute a growing and dynamic class of abused drug, that flourish in South Florida, United States, Brazil,Australia,UKetc..Flakka-it is a synthetic drug or commonly known as "STREET DRUG or TABLE SLAT" moreover they are also called "GRAVELS" because of it's white crystal chunks that have be compared to aquarium gravels.It originated at late 1960's.Flakka stimulates the effect of the "KHAT PLANT" which grows in Somalia and Middle East Countries. It is more dangerous than stimulants such as cocaine. It is often missed with combination of drugs like crack cocaine heroine and methamphetamine. Flakka is a man –made designed drug that causes the brain the to became flooded with dophamine , and it's effects are extreme agitation,disorientation,hallucination,violent behavior, rise in body temperature about 107^0C which make them run around naked ,often profound paranoia and superman strength ,which can lead to death. It is admininistrated through intravenously or smoking or swallowing or snorted.when an individual takes this drug it leads to a state of delirium and eventually causes hyperthermia,by this muscles get reactivated and get boosted and moreover leads to RHADOMYOLSIS .The struggle causes dehydration, this can impare filtration function of the kidney and thus finally leads to renal failure. Flakka presence can't be detected by routine urine test; it can only be detected by chromatography and mass spectrometry. Due to its ill effects, zombie drugs was banned on 2012.

Keywords: Rhahdomyolysis, delirium, hyperthermia, paranoia, hallucination.

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ACACIA CAESIA: A REVIEW ON ITS PHYTOCHEMISTRY AND PHARMACOLOGY

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Abstract

Acacia caesiaof Mimosaceae family is a medicinal plant indigenous to Indian subcontinent andis traditionally used by Mizo tribes for various ailments like skin diseases, sexual problems, and wound healing, stomach and tooth problems. The present review aims in compiling the information on different phytochemical and pharmacological aspects of Acacia caesia. The phytochemical report revealed the presence of alkaloids, anthraquinones, flavonoids, glycosides, phenols, indoles, tannins, lignins, steroids, anthocyanidins, terpenoids and saponins etc. in different parts like bark, stem and leaves. The pharmacological review report has revealed the antioxidant, antimicrobial, Cytotoxic; wound healing and cestocidal activity of *Acacia caesia*. The review explores the therapeutical potential of Acacia caesia as a promising drug.

Key words: *Acacia caesia*, antioxidant, antimicrobial, cytotoxic, wound healing, cestocidal.

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SCREENING OF ANTI-ASTHMATIC ACTIVTY OF ACACIA CAESIA

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Abstract

*Acacia caesia*is a medicinal plant indigenous to Indian subcontinent and istraditionally used by Mizo- tribes for various ailments like asthma, skin diseases, sexual problems, and wound healing, stomach and tooth problems. *Acacia caesia* belongs to Mimosaceae family and is a source of many secondary metabolites. The main aim of this project is to scientifically prove the traditional use of *Acacia caesia* leaves in asthma by in vitro anti-asthmatic studies using histamine and acetyl choline induced bronchoconstriction in isolated goat trachea. The leaf powder was subjected to solvent extraction using various solvents like petroleum ether, ethyl acetate, chloroform, methanol and water and the percentage yield was found to be 3.2, 3.1, 0.34, 39.4, 2.43% respectively. Maximum number of active constituents were found in methanol and water extract. By the preliminary phytochemical screening the presence of alkaloids, carbohydrates, flavonoids, proteins, amino acids and phenolic compounds were confirmed. In the present study the histamine (200µg/ml) and acetyl choline (200µg/ml) induced contraction of goat trachea was inhibited by methanolic extract (500µg/ml) of *Acacia caesia* in a dose dependent manner which may be due to their action on H1 and M3 receptors. . Further scope is to isolate and identify the compound responsible for the therapeutic activity and to carry out *in vivo* anti-asthmatic activity studies. Also, toxicological studies can be carried out and can develop a new formulation using isolated phytoconstituents of *Acacia caesia*.

Key words: Acacia caesia, anti-asthmatic, flavonoids

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WONDERS OF PSILOCYBIN –MAGIC MUSHROOM

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Abstract

Cancer patients often develop a chronic, clinically significant syndrome of psychosocial distress having depressed mood, anxiety and reduced quality of life with 40% of cancer patients meeting criteria for a mood disorder. Recent study found that a single dose of psilocybin, a compound found in “magic mushroom”, provides long term relief of anxiety and depression in cancer patients. A psilocybin mushroom is one of the polyphylec groups of fungi that contain psilocybin and psilocin and are mainly found in Mexico, Canada, US, Europe, Asia, Africa, Austrailia and associated islands. These species are usually dark-spotted, gilled mushrooms that grow in meadows and wood of subtropics and tropics. When the psilocybin is ingested, it is broken down to produce psilocin and act by inhibiting the serotonin by binding to the 5HT2A receptors. The effect tend to appear around 20 mins after the injestion and will last for 6 hrs . Physical effects like nausea, vomiting, muscle weakness, drowsiness and lack of coordination may also occur and would last for 3-8 hours depending on dosage, preparation and metabolism.

Keywords: Cancer patients, psychosocial distress, mushroom.

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A STUDY ON USE AND PREVALANCE OF SELF-MEDICATION IN DERMATOPHYTOSIS IN A TERTIARY CARE HOSPITAL

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Abstract

Background: Dermatophytosis is a contagious health problem caused by filamentous fungi commonly called as dermatophyte leading to the infection of keratinized tissues. Aim: The study was conducted to assess the use and prevalence of self-medication practice of patients with dermatophytosis attending a private tertiary care referral hospital to ascertain the growing menace of over the counter drug abuse and its implications in dermatophytosis. Methods: We used data'sof all persons aged 13-60 years, however pregnant population was excluded, derived from observational-cross sectional study performed in KIMS Al ShifaHosptalPvt. Ltd, situated in perinthalmanna, Malappuram district of Kerala. Results: A total of 48 patients among the 107 patients took self-medication for dermatophyte infection which contributes to 44.9% of the total population. Out of 39 male patients, only 23 (48%) patients have taken self-medication whereas 25 (52%) patients among the 43 female patients. Similarly it was found that 55.1% (59) of the population approached the physician directly when the clinical symptoms were presented. Among the different anatomical area affected tinea cruris was found to be the most prevalent followed tinea pedis. From the study, 58.3% of patients obtained medicines from nearby community pharmacies and 31.3% of patients based on the suggestion from the relatives or friends. A small percentage of population received medication from their own experience (6.3%) as well as from previous physician's prescription.

Conclusion: It was confirmed that the adolescent age group have mostly chosen self-medication for dermatophyte infection. Tinea cruris was the most common.

Key Words: dermatophytosis, self-medication

IMPACT OF CLINICAL PHARMACIST INITIATED PATIENT COUNSELLING IN PATIENTS WITH METABOLIC SYNDROME IN A TERTIARY CARE

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Abstract

Background: The National Cholesterol Education Programes Adult Treatment Panel III report (NCEP ATP III) identified the metabolic syndrome (MetS) as a multiplex risk for cardiovascular disease .

Objectives: Systematically review whether a pharmaceutical care intervention can result in better understanding about MetS.

Methodology: An observational interventional study was carried out prospectively for a period of 6 months by assessing all MetS. Study had a pre- interventional phase, post interventional phase. Patient information leaflets were provided to patients After 3 months follow up were conducted for them.

Results And Discussion: The sample chosen was 90. Among them 61 were males and 29 females and majority falls between the age group of 40-50. 41.1%were overweight, 35.6% falls into obese category. Most of the patients in our study were nonalcoholic (81.1%) and nonsmokers (67.8%). Most of them were following mixed diet (47%) and vegetarians were least (14.4%). WHO QoL-BREF questionnaire were used to analyze the QoL of the patient in phase I and phase II which showed there is a significant hike in QoL of patients after the counselling phase.

Conclusion: The study provided a complete evaluation, categorization and systematic analysis of MetS. The key strength of study was patient counseling which improves the patient understanding about the illness, medication, diet, lifestyle modification. The result of this study clearly highlights the necessity to continue surveillance of various criteria of MetS. The guided risk management strategy was effective in improving the knowledge and attitude of patients regarding the prevention ofMetS.

Keywords: Metabolic syndrome (MetS), Quality of life (QOL)

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A COMPARATIVE STUDY ON THE EFFECT OF WARFARIN V/S ACENOCOUMAROL IN PATIENTS WITH ATRIAL FIBRILLATION

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Abstract
Background: Warfarin and acenocoumarol are two anticoagulants that are commonly used for Atrial Fibrillation. Since there exists variants of anticoagulants, it is important to identify the comparatively better agent.Aim: To compare and evaluate the effectiveness of warfarin and acenocoumarol in atrial fibrillation patients.Methods: It was a prospective observational study for a period of 1 year. The effectiveness was determined by comparing individual mean TTR calculated using "Fraction of INR in range" method as well as by evaluating stroke risk using CHA_2DS_2VASc scores. The safety of the drug therapy was assessed from the ADR occurred after the drug administration. Result: A total of 218 patients were selected for the study. Mean TTR was found to be 56.54% ± 19.67 vs 50.69% ± 23.57 for acenocoumarol and warfarin respectively ($p < 0.05$). After the drug initiation, 12 patients experienced stroke episodes in acenocoumarol group while 24 patients experienced stroke in warfarin treated group ($p < 0.05$) . A total of 463 ADRs were observed during the study period, of which 174 belong to acenocoumarol treated patients and 289 to warfarin group. Among these, bleeding (127 patients) was the main ADR (55 vs 72). Statistically significant betterment of quality of life was seen in acenocoumarol patients than warfarin group in domains like physical functioning, general and mental health.Conclusion: This study concluded that acenocoumarol is a better oral anticoagulant compared to warfarin while considering various factors like mean TTRs, ADRs observed, stroke incidence and QOL of patients.

Keywords: Acenocoumarol, Warfarin, TTR, Atrial fibrillation.

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PHARMACOVIGILANCE: PRESENT SCENARIO AND FUTURE GOALS

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Abstract
Pharmacovigilance is the science and activities associated with gathering, recognition, appraisal, checking and counteractive action of untoward impacts with pharmaceutical items. Pharmacovigilance essentially sheets safety of medicine. Pharmacists have key roles in wellbeing frameworks to keep up the reasonable and safe utilization of medicine for they are medicate specialists who are unequivocally prepared in this field. The perspective of drug store understudies on pharmacovigilance and ADR revealing has additionally been examined with an intend to center the need to improve content identified with ADR announcing and pharmacovigilance in undergrad drug store educational programs. Globally, despite the fact that the job of pharmacists inside national pharmacovigilance frameworks contrasts, it is exceptionally all around perceived. Reconciliation of ADR announcing ideas in instruction educational modules, preparing of pharmacists and deliberate commitment of pharmacists in ADR revealing is imperative in accomplishing the safety objectives and preservation of general wellbeing. Likewise, these learning holes can be placated through nonstop expert improvement projects and fortifying hypothetical and reasonable information in undergrad drug store educational programs. Without adequately distinguishing and acknowledging preparing requirements of pharmacists and other human services experts, the capability of national pharmacovigilance frameworks is probably not going to enhance which may trade off patient's safety.

Keywords: Pharmacovigilance, Utilization of Medicine, ADR.

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OCCURRENCE OF CANCER AMONG PESTICIDE APPLICATORS: A SYSTEMATIC REVIEW

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Abstract

Objective: To do a systematic review to identify and analyze the research done on the occurrence of cancer among pesticide applicators

Method: Search was done in Google Scholar with search terms "PESTICIDE APPLICATORS", "CANCER" using Boolean operator "AND". All primary research articles retrieved were used in the study and meta-analysis and research articles were excluded from the study.

Result: A total of 30 studies relating to the topic were identified among which the average sample size was found to be 50,000. All the studies showed an association between pesticide application and cancer occurrence but with varying relative risk ratio and odds ratio. Two-third of the studies showed insecticides and one-third herbicides and fungicides associated with cancer occurrence. Among the insecticides, organophosphates and organothiophosphates were mostly associated. Among the various cancers, lung cancer (n=9 studies) and multiple myeloma (n= 8 studies) were the most in pesticide applicators followed by prostate, bladder, colorectal and Non-Hogkin Lymphoma.

Conclusion: This study revealed that there is a high risk of cancer incidence among the pesticide applicators. It thereby signifies to limit Pesticide Use And The Need To Educate And Train The Workers On Following Adequate Safety Measures While Handling Pesicides.

Keywords: Pesticide application, cancer risk

A SYSTEMATIC REVIEW ON MANAGEMENT OF STROKE

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Abstract

Objective**:** To evaluate the nature and rate of Drug Related Problems and to improve patient's adherence towards prescription in regard with ischemic and hemorrhagic stroke conditions.

Technoques: A forthcoming observational investigation was completed for a time of a half year in both ischemic and hemorrhagic stroke patients with age bunch between 18 – 90 years. Understanding segment and other information's were gathered utilizing information assortment structure and Moriskey prescription adherence scale 8 (MMAS 8) was utilized to gauge persistent medicine adherence. All information was examined utilizing SPSS form 20 and measurable noteworthiness for our examination was broke down by chi-square test.

Conclusion: Clinical drug specialists can contribute improved patient results by checking the medication treatment and can likewise advance balanced utilization of medications. The drug specialists could offer powerful patient consideration by methods for their intercession in pharmaceutical consideration and thus improved restorative result could be come to.

Key words: Medication adherence scale; drug related issues; stroke ;heamorrhagic, ischeamic

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TRENDS IN HIGH INTENSITY STATIN USE AMONG SECONDARY PREVENTION PATIENTS 76 YEARS AND OLDER

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Abstract

Background: High intensity statin therapy (HIST) is the gold standard therapy for decreasing the risk of recurrent atherosclerotic cardiovascular disease (ASCVD); however, little is known about the use of HIST in older adults with ASCVD.

Objectives: The aim of this cross-sequential study was to determine trends in statin intensity in older adults over a 10-year timeframe.

Methods: The study was conducted in an integrated healthcare delivery system. Patients were 76 years or older with validated coronary ASCVD. Data were collected from administrative databases. Statin intensity level was assessed in eligible patients on January 1st and July 1st from January 1, 2007 to December 31, 2016.

Results: Overall, a total of 5,453 patients were included with 2,119 (38.9%) and 3,334 (61.1%) categorized as HIST and Non-HIST, respectively. Included patients had a mean age of 79.8 years and were primarily male and white and had a cardiac intervention. The rate of HIST use increased from 14.5% to 41.3% over the study period ($p<0.001$ for trend). Conversely, the rates of moderate and low intensity statin use decreased from 61.8% and 9.8% to 41.2% and 4.8%, respectively (both $p<0.001$ for trend). Similar trends were identified for females and males.

Conclusions: The percentage of patients with ASCVD 76 years and older who received HIST substantially increased from 2007 to 2016. This trend was identified in both females and males. Future comparative effectiveness research should be conducted in this patient population to examine cardiac-related outcomes with HIST and Non-HIST use.

Keywords: High intensity statin therapy, atherosclerotic cardiovascular disease, 76 years, cardiac-related outcomes.

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MONOCLONAL ANTIBODIES BASED TARGETED DRUG THERAPY AND ITS PHARMACOECONOMICS WITH FUTURE PERSPECTIVES

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Abstract

Background: Monoclonal antibody (mAb)-based orphan drugs have led to advances in the treatment of diseases by selectively targeting molecule functions. However, their high treatment costs impose a substantial cost burden on patients and society.

Objectives: The study aimed to systematically review the impact of mAb based targeted drug therapy and its cost effectiveness with future perspectives.

Methods: By reviewing scientific and research publications and journals.

Conclusion: After 30 years of development, therapy with MAbs has been recognized as a promising therapeutic tool. Its clinical use is most widespread in the field of oncology, where half of the agents approved for routine clinical use are employed and a large number of molecules are currently undergoing clinical trials. Use of these expensive drugs, however, can raise an equity issue which concerns fairness in access to treatment. The issue of equal access to drugs needs to be considered alongside other societal values in making the final health policy decisions.

Keywords: Antibodies, chemotherapy, immunity, pharmacoeconomics.

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IT CAN BE IDENTIFIED BEFORE IT APPEARS;

"GENETIC VARIATIONS AS GENETIC MARKERS"

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Abstract

Lynch syndrome or Hereditary Nonpolyposis Colorectal Cancer (HNPCC) is an autosomal dominant genetic condition which predisposes a person to have a high risk of colon cancer as well as other cancers including endometrial cancer, ovarian cancer, stomach cancer etc.It accounts for 2-5% of all colorectal cancers over the globe.People with Lynch syndrome have a 10-80% lifetime risk for colorectal cancer and 15-60% lifetime risk for endometrial cancer. This condition is mainly caused due to an inherited mutation in one of the DNA mismatch repair genes(MMR) .In HNPCC, a mutation that inactivates an MMR gene eventually leads to the accumulation of cell mutations and increases the likelihood of malignant transformation and cancer.The main genes involved are MLH1,MSH2,MSH6,PMS2 and EPCAM.If a person is diagnosed with lynch syndrome there is a 50% chance that the variant gene is inherited by the next generation.Hence efforts to identify as many individuals with Lynch Syndrome as possible will prevent cancers and save lives.This includes "cascade testing" which involves genetic counseling and testing in blood relatives of individuals who have been identified with specific genetic mutation. The two specific tests for Lynch Syndrome are the- Microsatellite Instability Testing (MSI) and Immunohistochemisty testing (IHC) .Nowadays universal tumour screening for Lynch Syndrome is being done.The primary goal for this relies completely on testing and counseling as many at-risk individuals as possible .This approach must be optimized to achieve high family reach.The management involves surgical removal of the particular part affected and chemotherapeutic medications.

This study aims at improving the awareness of general population on Lynch syndrome and helping them to identify the condition as early as possible so as to decrease the mortality and increase the life time.

Key words:lynchsyndrome,genecascading,immunohistochemistrytesting,microsatellite instability testing

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A STUDY ON USE AND PREVALANCE OF SELF-MEDICATION IN DERMATOPHYTOSIS IN A TERTIARY CARE HOSPITAL

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Abstract

Background: Dermatophytosis is a contagious health problem caused by filamentous fungi commonly called as dermatophyte leading to the infection of keratinized tissues.

Aim: The study was conducted to assess the use and prevalence of self-medication practice of patients with dermatophytosis attending a private tertiary care referral hospital to ascertain the growing menace of over the counter drug abuse and its implications in dermatophytosis.

Methods: We used data'sof all persons aged 13-60 years, however pregnant population was excluded, derived from observational-cross sectional study performed in KIMS Al ShifaHosptalPvt. Ltd, situated in perinthalmanna, Malappuram district of Kerala.

Results: A total of 48 patients among the 107 patients took self-medication for dermatophyte infection which contributes to 44.9% of the total population. Out of 39 male patients, only 23 (48%) patients have taken self-medication whereas 25 (52%) patients among the 43 female patients. Similarly it was found that 55.1% (59) of the population approached the physician directly when the clinical symptoms were presented. Among the different anatomical area affected tinea cruris was found to be the most prevalent followed tinea pedis. From the study, 58.3% of patients obtained medicines from nearby community pharmacies and 31.3% of patients based on the suggestion from the relatives or friends. A small percentage of population received medication from their own experience (6.3%) as well as from previous physician's prescription.

Conclusion: It was confirmed that the adolescent age group have mostly chosen self-medication for dermatophyte infection. Tinea cruris was the most common.

KEY WORDS: dermatophytosis, self-medication

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IMPACT OF CLINICAL PHARMACIST INITIATED PATIENT COUNSELLING IN PATIENTS WITH METABOLIC SYNDROME IN A TERTIARY CARE

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Absyract
Background: The National Cholesterol Education Programes Adult Treatment Panel III report (NCEP ATP III) identified the metabolic syndrome (MetS) as a multiplex risk for cardiovascular disease .
Objectives: Systematically review whether a pharmaceutical care intervention can result in better understanding about MetS.
METHODOLOGY: An observational interventional study was carried out prospectively for a period of 6 months by assessing all MetS. Study had a pre- interventional phase, post interventional phase. Patient information leaflets were provided to patients After 3 months follow up were conducted for them.
Results and Discussion: The sample chosen was 90. Among them 61 were males and 29 females and majority falls between the age group of 40-50. 41.1%were overweight, 35.6% falls into obese category. Most of the patients in our study were nonalcoholic (81.1%) and nonsmokers (67.8%). Most of them were following mixed diet (47%) and vegetarians were least (14.4%). WHO QoL-BREF questionnaire were used to analyze the QoL of the patient in phase I and phase II which showed there is a significant hike in QoL of patients after the counselling phase.
Conclusion: The study provided a complete evaluation, categorization and systematic analysis of MetS. The key strength of study was patient counseling which improves the patient understanding about the illness, medication, diet, lifestyle modification. The result of this study clearly highlights the necessity to continue surveillance of various criteria of MetS. The guided risk management strategy was effective in improving the knowledge and attitude of patients regarding the prevention ofMetS.
Keywords: Metabolic syndrome (MetS), Quality of life (QOL)

Occurrence of Cancer among Pesticide Applicators: A Systematic Review

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Nirmala College of Pharmacy, Muvattupuzha

Abstract
Objective: To do a systematic review to identify and analyze the research done on the occurrence of cancer among pesticide applicators
Method: Search was done in Google Scholar with search terms “PESTICIDE APPLICATORS”, “CANCER” using Boolean operator “AND”. All primary research articles retrieved were used in the study and meta-analysis and research articles were excluded from the study.
Result: A total of 30 studies relating to the topic were identified among which the average sample size was found to be 50,000. All the studies showed an association between pesticide application and cancer occurrence but with varying relative risk ratio and odds ratio. Two-third of the studies showed insecticides and one-third herbicides and fungicides associated with cancer occurrence. Among the insecticides, organophosphates and organothiophosphates were mostly associated. Among the various cancers, lung cancer (n=9 studies) and multiple myeloma (n= 8 studies) were the most in pesticide applicators followed by prostate, bladder, colorectal and Non-Hogkin lymphoma.
Conclusion: This study revealed that there is a high risk of cancer incidence among the pesticide applicators. It thereby signifies to limit pesticide use and the need to educate and train the workers on following adequate safety measures while handling pesicides.
Keywords: Pesticide application, cancer risk.

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EPIDEMIOLOGICAL STUDY ON MENSTRUAL HYGIENE AND MENSTRUAL IRREGULARITIES AMONG YOUNG HEALTH CARE PROFESSIONALS

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Abstract

The normal length of the menstrual cycle is typically between 24 to 38 days. A normal menstrual period lasts up to 8 days. As per the American college of obstetricians and gynecologist, there are 14% to 25% of women have irregular menstrual cycles and other associated problems. The aim of our study is to evaluate the menstrual hygiene and associated menstrual irregularities among the young health care professionals in healthcare institutions in Kerala, India. This is a community based, cross sectional survey based study, was conducted among 415 health care professional subjects of age group 17-25 years. The questionnaire for the survey study was prepared using Google forms. Certain factors such as menstrual hygiene, diet, environment, thyroid levels, and their regular medications were considered and their influence over the menstrual irregularities was analyzed.Out of 415 samples, 33.3% (138) have reported with irregular menstrual cycles and among these subjects 7.2% was diagnosed with PCOD. In 33.3% (138), 42.02% subjects have found that their menstrual cycle was affected by climate changes. When considering their food habits 83.3 % (115) subjects include non-veg in their diet and in this, 72.17% subjects prefers chicken the most. It reveals that changing food habits and climate have an influence over menstrual problems. These were found to be the major cause for morbidity among this population. The results shows that the health care professional were reluctant to maintain menstrual hygiene and to seek medical treatment. Appropriate health care education should be given in this regards.

Keywords: Menstruation, menstrual cycle,menstrual hygiene,menstrual irregularities,irregular menstrual cycles

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OVERALL SURVIVAL AND COST-EFFECTIVENESS ANALYSIS OF RIBOCICLIB PLUS HORMONE THERAPY VERSUS PALBOCICLIB PLUS HORMONE THERAPY AND HORMONE MONOTHERAPY AS FIRST-LINE TREATMENT FOR HR+/HER2- ADVANCED BREAST CANCER

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Abstract

Background: Hormone Receptor Positive (HR+) and Human Epidermal Growth Factor Receptor 2 Negative (HER2-) tumors constitute 65% of all breast cancer. CDK4/6 inhibitor (ribociclib, palbociclib) with hormone therapy (HT) have been approved as the first-line therapy for HR+/HER2- breast cancer. Clinical trials have established that combination of CDK4/6 inhibitor with HT increases overall survival than taking hormone monotherapy. Cost-effectiveness studies are essential to inform the payers and clinical decision makers on money value of cancer therapy.Objective: To determine the overall survival (OS) and cost-effectiveness of ribociclib plus HT versus palbociclib plus HT and hormone monotherapy as first- line treatment for HR+/HER2- advanced breast cancer.Method: A comprehensive literature search (Pubmed, Cochrane controlled trials register) was undertaken to identify articles that focused on overall survival and cost-effectiveness of ribociclib verses palbociclib both in combination with HT and hormone monotherapy for HR+/HER2- breast cancer.Results: The addition of CDK4/6 inhibitor to HT resulted in longer OS than hormone monotherapy. Estimated OS was 43.3 months for ribociclib plus HT ,38.9 months for palbociclib plus HT and 33 months for hormone monotherapy. Cost-effectiveness analysis showed that ribociclib plus HT resulted in cost saving and incremental quality-adjusted life years(QALYs) compared to palbociclib plus HT and hormonemonotherapy.Conclusion: The results demonstrate that ribociclib plus HT enable prolonged OS and is the cost-effective therapeutic option compared to palbociclib plus HT and hormone monotherapy as first-line treatment for HR+/HER2- advanced breast cancer.

Keywords: HR+, HER2-, CDK4/6 inhibitor, ET, cost-effectiveness, overall survival, QALYs

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MONOCLONAL ANTIBODIES BASED TARGETED DRUG THERAPY AND ITS PHARMACOECONOMICS WITH FUTURE PERSPECTIVES

Gautham Krishna*[1], Dr.Dhanya Dharman[2], Prof.Dr.Shaiju s Dharan[3].
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Abstract

Background: Monoclonal antibody (mAb)-based orphan drugs have led to advances in the treatment of diseases by selectively targeting molecule functions. However, their high treatment costs impose a substantial cost burden on patients and society.

Objectives: The study aimed to systematically review the impact of mAb based targeted drug therapy and its cost effectiveness with future perspectives.

Methods: By reviewing scientific and research publications and journals.

Conclusion: After 30 years of development, therapy with MAbs has been recognized as a promising therapeutic tool. Its clinical use is most widespread in the field of oncology, where half of the agents approved for routine clinical use are employed and a large number of molecules are currently undergoing clinical trials. Use of these expensive drugs, however, can raise an equity issue which concerns fairness in access to treatment. The issue of equal access to drugs needs to be considered alongside other societal values in making the final health policy decisions.

Keywords: Antibodies, chemotherapy, immunity, pharmacoeconomics.

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REVIEW ON THE ROLE OF PHARMACIST IN REGULATING THE DRUG RELATED PROBLEMS ASSOCIATED WITH SELF MEDICATION

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Abstract

Background: Self-medication can be defined as obtaining and consuming drugs without the advice of a physician either diagnosis, treatment or monitoring. Although over-the-counter (OTC) drugs for self Medication are of proven efficacy and safety, improper use of abuse may lead to serious Consequences, especially in paediatrics, geriatrics, pregnancy and lactation. The prevalence of self Medication practises is alarmingly high in health care professionals, despite knowingly consequences and potential risks.

Objectives: the role of pharmacist in regulating the drug related Problems associated with self-medication. The increased self medication trend is not only observed in countries .Some Examples of conditions where self medication is appropriate are cold, flu, sore throat, sunburn etc. Self medication varies among different populations and are influenced by many factors like age, gender, education, family, society, low availability of drugs, exposure to advertisements and nature of illness. Various previous studies concluded that self medication of non-steroidal anti inflammatory Drugs is predominant. In one study it was reported that increase in reporting of adverse drug reaction to self-medication. Taking self-medication without doctor's supervision can be dangerous as it may Lead to dangerous drug interaction and adverse effects. Increasing cost of treatment and poor socio-Economic status may increase use of self-medication. Public education, enforcing and implementing Laws about prescribed medications can help decrease the rate of self medication as shown by previous Researches in developed countries.

Keywords: Self-medication, public education, adverse effects, efficacy

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IMPACT OF MEDICATION REVIEW WITH VERSION 2 STOPP AND START CRITERIA IN ELDERLY PATIENTS UNDER THE MEDICAL ONCOLOGY DEPARTMENT

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Abstract
Background:Inappropriate prescribing is common for older people than younger ones.Version 2 STOPP START criteriause evidence based rules to avoid commonly encountered instances of potentially inappropriate medications and prescribing omissions due to existence of various comorbidities in elderly cancer patients.Aim: To evaluate the impact of medication review by clinical pharmacist in the Medical Oncology department and to improve medication appropriateness
Methodology: A prospective, observational study using Version 2 STOPP START criteria conducted at the department of Medical Oncology department,AIMS from August 2019 to January 2020
Results:The study sample consisted of 100 patient.Majority of the patients were in the age group of 65-69(48%) and 70-75(28%), male patients (60%) were predominant than female patients.(40%).The most common comorbidities were hypertension (70%) and diabetes (45%).Majority of patients having Hematological malignancies (36%), lung cancer (11%). prostate cancer (10%).20 patients were utilized medication inappropriately according to STOPP criteria and medication omissions were identified in 9 patients with START criteria.A total of 26 potentially inappropriate medications were stopped and corresponding drug changes were occured and 9 potentially prescribed omissions were started.Outcomes of the medication review were measured for each resident and one of them were showed any ADR or prolonged hospitalization
Conclusion:Medication review using version 2 STOPP and START criteria is useful for detecting and correcting inappropriate prescribing to that which would be sustainable and efficient the medication review should be based on the medical record and performed in association with the physician in charge of residents
Key words: inappropriate prescribing,STOPPSTART,olderpeople,cancer
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PUZZLING DIAGNOSIS FOR BUDD CHIARI SYNDROME: A RARE CASE REPORT

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Abstract
The Budd Chiari Syndrome (BCS) is a rare life threatening and clinically challenging disorder defined by obstruction of hepatic venous outflow anywhere from the small hepatic veins to the suprahepatic inferior vena cava. A 42 years old man having BCS who underwent DIPS procedure 2 years back for recurrent variceal bleeding and was on anticoagulation since then. Now admitted over the complaints of multiple episodes of hematemesis with melena, for an emergency OGD was done which revealed grade 2 esophageal varices with bleeding. DIPS venography and pressure gradiant measures showed raised gradients suggestive of stent dysfunction thus recession done. Patient had history of Iron deficiency anemiaspenomegaly, liver parenchymal disease, cholilithiasis, and fatty liver. Now the patient had elevated ALP to 203U/L (38-126U/L), Bilirubin to 3.4 mg/dl (1-1.2mg/dl). Decreased blood urea to 8mg/dl (15-45mg/dl), decreased PCV, MCHC, MCV, Platelet count, total RBC and Hb level. Elevated ESR and CRP were also noted. INR level was elevated to 1.43sec.During admission patient was treated with antibiotics, anticoagulant and hepatic drugs. BCS is an unusual clinical condition which requires an accurate and prompt diagnosis and an aggressive treatment. BCS can mimic constrictive pericarditis because it shares many clinical and histologic features.Clinicians must continue reassess patients given histologic data that are not specific for a particular disease entity.
Keywords: Budd Chiari Syndrome, life threatening, 42 years old man, liver.

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A COMPREHENSIVE REVIEW OF PALLIATIVE CARE IN PATIENTS WITH CANCER

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Abstract

One of the most challenging roles for the psychiatrist is to help guide terminally ill patients physically,psychologically and spiritually through the dying process. In fact, surveys suggest that psychologicalsymptoms such as depression, anxiety, and hopelessness are as frequent, if not more so, than pain and other physical symptoms in palliative care settings. Psychiatrists have a unique role and opportunity to offer competent and compassionate palliative care to those with life-threatening illness. In this article we provide a comprehensive review of basic concepts and definitions of palliative care and the experience of dying, and the role of the psychiatrist in palliative care including assessment and management of common psychiatric disorders in the terminally ill, with an emphasis on suicide and desire for hastened death. Psychotherapies developed for use in palliative care settings, and management of grief and bereavement are also reviewed. By reviewing scientific and e journals, Patients with advanced cancer, and other life-threatening medical illnesses are at increased risk for developing major psychiatric complications and have an enormous burden of both physical as well as psychological symptoms. For most patients with advanced cancer, the palliative care that they receive matches what they consider important. Support for patients experiencing fatigue may need more attention. When symptoms are difficult to control, Doctors and nurses may still provide emotional support and practical advice. Furthermore, we recommend that doctors discuss patients' need for information about the expected course of their illness.

Keywords: Cancer therapy, palliative care, psychiatric complications

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SMALL BOWEL TRANSPLANT - OBSERVATIONS FROM INITIAL SETBACK

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Abstract

Background: Small bowel transplants are done world over with acceptable success rates. Most western countries have well established nationally controlled systems for intestinal transplants. The lack of a good public health care delivery system makes intestinal transplant much more challenging in India. We describe our experience of three small bowel transplants.

Methods: Deceased donor small bowel transplant was performed for 3 patients with intestinal failure, 2 for short gut syndrome following surgery and one for visceral myopathy. All were on pre-operative total parenteral nutrition for varying periods of time (6 to 13 months). There were multiple episodes of line sepsis in all patients. Posttransplant, all received induction immunosuppression with anti-thymocyte globulin (first two patients) or Alemtuzumab (3 rd patient). All had systemic venous drainage and stoma. Protocol weekly intestinal biopsies were done in all patients.

Results: All patients died in hospital at 24, 12 and 28 days following surgery. Biopsy proven rejection was observed in only patient who had received ABO-compatible non-identical graft (O to A). This patient subsequently developed vascular thrombosis necessitating explant of the graft. Sepsis due to multidrug resistant bacteria was the reason for mortality in the remaining two patients.

Conclusion: Despite the absence of technical complications, successful small bowel transplant seems to be an elusive entity for the Indian transplant community.

Keywords: Small bowel transplant, Intestinal failure, Total parenteral nutrition

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CORONAVIRUS; A RECENT OUTBREAK

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Abstract
The novel coronavirus was recognised as causative pathogen of coronavirus outbreak in 2020. First case reported in Wuhan. Phylogenetic analysis suggests that an animal sold at seafood market is the host of new virus. Thousands of people already contracted with new coronavirus. The death toll is at 258, and is rising daily. The WHO declared the outbreak "public health emergency of international concern". Coronavirus belongs to large family of virus which are zoonotic in nature. Signs of infection by this virus: respiratory diseases, fever, cough, dyspnoea, headache, hypoxemia, pneumonia, sore throat. Mode of transmission of SARS-CoV[2002] & MERS-CoV[2012] was by cat and dromedary camels. Coronavirus is causing severe acute respiratory syndrome indicated by elevated levels of aminotransferase and lymphopenia; alveolar damage can occur. Etiologic agents of respiratory diseases are human coronavirus HKUI& HCOU-NL63 and for common cold, it is coronavirus OC43 &229E.Murine coronavirus exhibits various levels of virulence and tropisms. Antibody &cell mediated responses needed for its prevention. Porcine coronavirus are cause of viral enteritis & foetal diarrhoea. The coronavirus spike protein- mediators of cell – cell transmission. 1) spike cleaves by proteases.2) then enter cell by plasma membrane route. 3) Finally replicate in particular cell based on ability to bind with receptors. [2019nCoV – can bind to ACE-II receptors]. The demographic states: male: female sex ratio is [2.7- 1] and age range [21- 76] among the infected. Prevention include: regular handwashing, cover mouth while coughing, thoroughly cook meat and egg. The company Reckitt & Benckiser says that Dettol can kill some CoV strains.

Keywords: novel coronavirus, Wuhan, public health emergency of international concern, respiratory diseases.

CANCER CHECKMATES NIVOLUMAB ALONE AND IS COMBINED WITH IPILIMUMAB IN ADVANCED NSCLC AND RCC: RANDOMISED TRIAL WATCH

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Abstract
Background: Immune check-point inhibitors, nivolumab alone and in combination with Ipilimumab significantly improved prognosis in advanced unresectable cancer in many studies. Hence we conducted this review to identify the safety and effectiveness of nivolumab monotherapy over nivolumab plus ipilimumab combination in patients with Advanced Renal Cell Carcinoma (RCC) And Non-Small Cell Lung Cancer (NSCLC).
Objectives: The main purpose was to highlight the evidence from published randomized control trials on the overall survival, progression free survival, and safety parameters in advanced RCC and NSCLC treated with Nivolumab alone or in combination with Ipilimumab.
Methods: Relevant electronic databases searched include the Cochrane review, PubMed and Google scholar. The retrieved records were screened independently for eligibility.
Conclusion: Patients with advanced RCC or NSCLC, long term survival of at least 5 years was observed in a greater percentage of patients who received nivolumab plus ipilimumab or nivolumab alone, with no apparent loss of quality of life after chemotherapy. Long term safety profile was tolerable with manageable toxic effects that appeared less frequently than with chemotherapy. While advanced RCC and NSCLC have high morbidity and mortality, combining nivolumab and ipilimumab led to an improvement in progression free survival and objective response rates when compared with monotherapy. These were the characterizing factors associated with long-term survival, and may provide treatment approaches for future clinical trial development in immune-oncology.

Keywords: Nivolumab, Ipilimumab, Renal cell carcinoma, Chemotherapy, Overall survival.

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A COMPARITIVE STUDY ON AUTISM AND ASPERGER'S SYNDROME

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Abstract

Objective: Comparing prevalence of Autism in metropolitan of Atlanta and India. To classify Autism and Asperger's syndrome based on various parameters and to formulate guidelines. Measures to rectify these condition based on each individual's situation.

Technique: Pubmed, Science direct, New England journal of medicine, 15 other journals based on autism were reffered.

Autism is a developmental condition and it can be distinguished from Asperger syndrome through speech, IQ/intellect, vocabulary, day to day skills and verbal communication.

According to a study conducted based on the prevalence of autism in the Metropolitan of Atlanta it was found that 3.6 per 1000 aged between 3-10 years was Autistic and according to a study in India prevalence was found to be 0.11 per 1000 in rural children and 0.09 per 1000 in urban children .

Conclusion: From the comparative study it was found that Asperger syndrome is a less severe condition and they can live a happy, independent life compared to those with autism.

Treatment and management have to be specifically tailored according to each child and include specialised education programmes and behaviour therapy to maximise the quality of life.

Guidelines can be formulated for both conditions and points can be awarded for their scale of symptoms, thus the extend of condition can be found out.

Keywords: Autism, Asperger's syndrome, speech, independant

SNAKEBITE ENVENOMATION: PATHOPHYSIOLOGY MANAGEMENT & TREATMENT

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Abstract

Envenomation after snakebite is an underestimated and neglected public health issue responsible for substantial illness and death as well as socioeconomic hardship to impoverished populations living in rural and tropical areas. Scarcity and delay of administration of antivenom, poor health services, and difficulties with transportation from rural areas to health centers are major factors that contribute to the high case-fatality ratio of snakebite envenomation. This work reveals about the pathophysiology, treatment and management of snakebite envenomation. Cross sectional analysis of available guidelines and articles related to Snakebite Envenomation and its management. Delayed medical management & lack of public awareness results in increased Mortality. Identification of the species of snake responsible for the bite is important for optimal clinical management. Antivenom is the only effective antidote for snake venom. Awareness about the appropriate first aid for snakebite is necessary.

Key words: Envenomation, Antidotes, Venom, Torniquet, First-aid.

A CASE REPORT ON PLUMMER VINSON SYNDROME

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Abstract

Plummer–Vinson Syndrome is a rare disease characterised by classical triad of dysphagia , iron deficiency anemia and esophageal webs .It can be treated effectively with iron supplementation and mechanical widening of esophagus . A case report on 36 yr old woman admitted to gastroenterology department over the complaints of dysphagia , odynophagia since long ,regurgitation ,weight loss and anemia .Physical examination revealed face and conjunctival pallor .Laboratory findings were consistent with microcytic hypochromic anemia with iron deficiency (haemoglobin 8g/dL , serum iron 14 ug/dL, TIBC 519 ug/dL , ferritin 1.78 ng/mL).Gastrointestinal endoscopy and barium –swallow esophagography detected a web consistent with motility disorder and .Patient was treated with CRE Balloon dialatation along with endoscopic needle knife incision and iron supplementation .The webs were easily disrupted without complication . Plummer Vinson Syndrome , its identification and follow up is considered relevant due to increased risk of squamous cell carcinoma of pharynx and esophagus ,the patient should be followed closely .

Key words: Plummer Vinson Syndrome ,odynophagia ,regurgitation .

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A CASE REPORT ON HYDROURETERONEPHROSIS CONSISTENT WITH MALIGNANT PECOMA

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Abstract

Malignant perivascular epitheliod cell tumour (PEComa) is a type of mesenchymal tumor, that can occur at any region of body and consist of pathological behaviour which is not predictable. A 59 year old female patient presented with the complaints of abdominal pain and urinary incontinence. On lab investigation, Hb and albumin was low (6.9 and 3.1 respectively) while WBC (37,930), total bilirubin (1.3), alkaline phosphatase (197) was high. The CT of abdomen and pelvis showed large heterogeneously enhancing solid lesions abutting each other measuring 15×10 cms and 8×7 cms in the pelvis extending into the lower abdomen displacing the small bowel loops and with locoregional extension, causing bilateral distal ureter, moderate hydroureteronephrosis, consistent with malignant PEComa. Mild ascites, minimal left pleural effusion and cardiomegaly were present. Based on these objective data the patient was diagnosed with malignant PEComa. The condition was primarily treated by mTOR inhibitor EVEROLIMUS 5 mg OD 21/28 days and other conditions were symptomatically managed. The prevalence of PEComa is 0.13%. The condition is difficult to diagnose due to its rarity and standardized treatment protocol are controversial at present.

Keywords: Malignant PEComa, Hydroureteronephrosis

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EOSINOPHILIC MENINGITIS: A RARE CASE REPORT

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Abstract

Eosinophilic meningitis is defined as the presence of higher percentage of eosinophils (more than 10%) in the cerebrospinal fluid (CSF). The usual causes are certain parasitic diseases and coccidioidal meningitis.The three important parasitic infections associated with eosinophilic meningitis are Angiostrongylus cantonensis (Rat lungworm), Baylisascaris procyonis, and Gnathostoma spinigerum. A 10 month old female baby was brought to hospital with history of recurrent episodes of low grade fever and increased irritability for the past one month. On clinical examination, the temperature was found to be 100.6 degree F. The haemogram showed an elevated level of TC as 33000, 43% of eosinophils, 6 lakh platelets and increased inflammatory markers. Peripheral smear reported to have normocytic normochromic blood picture with eosinophilia, leucocytosis, and thrombocytosis. LFT showed mild transaminitis.RFT/URE were normal. There were no lung infiltrates in the chest X-Ray. Manteaux and gastric aspirate for AFB smear were negative. As the child had significant eosinophilia, a detailed history was taken. Mother had noticed the presence of snails in and around the house and once she has seen the child with a snail in her mouth. CSF sent for cytopathological studies showed presence of 50-60% of eosinophils with low glucose and high normal protein. MRI of brain with contrast was normal. Thus the diagnosis of eosinophilic meningitis was made. Inj.ceftriaxone was started after sending for relevant cultures. She was treated with steroids and albendazole. The child improved symptomatically with the treatment given. At the discharge the child was afebrile, alert and hemodynamically stable.

The prevalence of the condition is less than 1% in 1 lakh population. It can affect multiple organ systems in the body if left untreated. So a detailed history and examination is required to diagnose the condition.

Keywords: Eosinophilic meningitis, Eosinophilic count.

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BLINATUMOMAB FOR RELAPSEDB - CELL ACUTE LYMPHOBLASTIC LEUKEMIA IN CHILDREN

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Abstract

Objective: To understand the benefits of blinatumomab in children forRelapsed/Refractory B-ALL.

Methods: Systematic review of blinatumomab in children.

Blinatumomab is a novel bispecific T-cell engaging antibody which binds a cluster of differentiation CD19 antigens on blast cells and also binds and activates the CD3/T cell receptor complex causing cell lysis or it is a CD19/CD3 bispecific antibody designed to redirect Tcells towards malignant B cell and thereby causing cell lysis. It is mainly developed for the the treatment of haematological cancer and now it is approved for the treatment of ph-negative relapsed/refractory B-cell precursor acute lymphoblastic leukemia(BCP-ALL).Acute lymphoblastic leukemia(ALL) is a rare and rapidly progressing cancer of blood and bone marrow. ALL is curable in one third of patients and the results may vary according to different clinical, immunologic,genetic characteristic along with pharmacokinetic response of early treatment.Modern therapy consists of standard and high dose chemotherapy along with hematopoietic stem cell transplantation. Blinatumomab is a much more effective bridge to transplantation and has improved the survival rate in children compared to chemotherapy.It has distinctive side effects compared to chemotherapy specifically cytochrome release syndrome and neurological toxicities.It is useful as a single agent but further studies will be needed to determine whether combination therapy is more useful in improving the quality of life of patient.

Conclusion: Hence we can conclude that blinatumomab is successful as a single agent and the first to enter the clinic from many targeted immunotherapies. It is cost effective and have less side effects compared to chemotherapy.

Keywords: Blinatumomab, Acute lymphoblastic leukemia, BCP-ALL ,cancer.

MERKEL CELL CARCINOMA-A CASE REPORT

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Abstract

Background: Merkel cell carcinoma (MCC) of the skin is a rare, aggressive cutaneous malignancy that predominantly affect older adult with light skin types.The reported annual incidence of Merkel cell carcinoma (MCC) is 0.2-0.45 case per 100,000 population. This rare cancer occurs 100 times less frequently than does melanoma. It increases with advancing age from 0.1 to 9.8, among age group 40 to 85years.MCC has a propensity to recur and to cause local and distant metastases where regional lymph node is common.Its deadly disease with a poor likelihood for survival.

Case Description: A 73 year old male patient with a medical history of diabetes, cerebrovascular accident and hypertension came with complaints of painful, firm and non-tender lesions on right thumb since 9 years. Recently diagnosed with carcinoma lung managed with inj.Etoposide, inj.Cisplatin and supportive care medications. A total of 4 courses of chemotherapy were completed. Biopsy was performed and histopathological examination showed infiltrative tumor in dermis with frequent apoptotic bodies indicating merkel cell carcinoma. He was presented with recurrent infections over the thumb and was managed with antibiotics and wound debridement.

Conclusion: Merkel cell carcinoma occurs in sun damaged skin and due to lack of systemic symptoms it is often left unnoticed. If early diagnosis was done with a biopsy report the prognosis of the disease could have been improved .In this case the underlying cause was left undiagnosed since nine years.

Keywords: MCC, 100,000 population, carcinoma.

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PACLITAXEL – A POTENT ANTICANCER DRUG

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Abstract
Objective: To understand the benefits of paclitaxel and its derivatives over other anticancer drugs. Method: Systematic literature review on the topic. Paclitaxel, a plant alkaloid is in clinical use for treating a variety of malignancies, including ovarian, breast and non-small cell lung cancer also in AIDS related kaposis sarcoma. It is a highly lipophilic compound and very poor aqueous solubility.New approaches are reported to solubilise it using cosolvent and inclusion complexes. This compound lacks functional group that are ionisable, it lead to increase in solubility with change in PH. Long circulating diglycolate prodrug nanoparticles provided significantly enhanced therapeutic activity over commercially formulated paclitaxel at the maximum tolerated dose. Docetaxel, a semisynthetic derivative of paclitaxel has shown an exceptional clinical results and was approved by the FDA for the treatment of breast cancer in 1996. At the molecular level paclitaxel exerts the antitumour activity through the stabilisation of microtubule assemblies, thus interrupting mitosis and cellular division. Conclusion: Paclitaxel is one of the most widely used cancer therapeutic agent in human patient with broad activity in several cancer histologies ranging from sarcoma to several epithelial cancer and melanoma.

Keywords: Paclitaxel, breast cancer, ovarian cancer, small cell lung cancer

ADVANTAGES OF TENELIGLIPTIN OVER OTHER ANTIDIABETIC AGENTS

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Abstract
Introduction: Teneligliptin is a dipeptidyl peptidase- 4 –inhibitor .It acts by inhibiting the degradation of GIP and GLP-1, thus increasing the effects of these endogeneous incretins on insulin secretion and glucagon inhibition. Teneligliptin has been systematically evaluated in type 2 DM as monotherapy with diet and exercise and in combination with metformin, sulphonylureas, and insulin in short and long term (12-52 Weeks). These studies have reported a reduction in HbA1C of 0.8-0.9% within 12 weeks of therapy.
Objective: To assess the efficacy of teneligliptin over metformin in type 2 diabetes patients.
Method: A study was conducted to assess the effectivenes of metformin in combination with teneligliptin in indian patients with type 2 DM who were having inadequately controlled blood sugar with metformin monotherapy.About 120 subjects who were eligible for the study were selected .From these 2 groups with 60 subjects each were formed .Group A was given teneligliptin 20 mg along with metformin. The mean baseline HbA1C was 8.0 %. Group B was given metformin alone and they were having a HbA1C 7.8%.
Conclusion: After 24 weeks the HbA1C of 2 groups were compared the mean HbA1C of group A was obtained as 7.17% and that of group B was 7.62%. From this it can be concluded that group 1 HbA1C was significantly reduced.

Keywords: Teneligliptin, HbA1C, Metformin, DPP4, sulphonylureas, insulin

ADVANTAGES OF CLOPIDOGREL OVER ASPIRIN

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Abstract
Objective: The goal of this study to compare the efficacy of clopidogrel versus aspirin. Method: Ischemic events mainly affects cerebral, coronary and peripheral arteries that results in thrombus formation .The platelet is an important mediator in the initiation and propagation of thrombus formation. Thus, antiplatelet agents have a key role in preventing further ischemic events.Aspirin,an inhibitor of thromboxane A2 pathway of platelet activation. Clopidogrel an inhibitor of adenosine diphosphate (ADP) induced pathway for platelet aggregation..Patients with a history of more than one ischemic event are at risk of developing another event.According to a subgroup analysis of the clopidogrel versus aspirin in patients at risk of ischemic events trial(CAPRIE) have found that in such patients the benefits of clopidogrel over aspirin are amplified. If patients have a history of multiple cardiovascular events ,they are better off being treated with clopidogrel rather than aspirin.Clopidogrel when compared to aspirin associated with a non-significant number of intracranial haemorrhage.Clopidogrel(75mg daily) and aspirin(325mg daily) were compared in the prevention of the composite outcome event vascular death, nonfatal stroke or nonfatal myocardial infarction.Clopidogrel reduced the annual risk of such a vascular event in comparison with aspirin. Conclusion: In summary, clopidogrel appears to be more effective than aspirin.Among patients with an ischemic stroke while taking aspirin, clopidogrel initation was associated with fewer recurrent vascular events than aspirin reinitiation.The absolute benefit of clopidogrel over aspirin is seem to be amplified in such high risk patients.

Keywords: Aspirin, clopidogrel, cerebral ischemia.

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EFFECTIVENESS OF VEDOLIZUMAB FOR LONG TERM TREATMENT OF IBD

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Abstract

Objectives: To evaluate the long term effectiveness of vedolizumab in patients with IBD. Method: Vedolizumab, a α4β7 integrin antagonist provides a newer option for ulcerative colitis and crohn's disease. The GEMINI trial, a long term safety trial with continuous Entyvio (vedolizumab) was carried out in 894 patients with ulcerative colitis and 1,349 with crohn's disease for a period of 9 years conducted between May 2009 and October 2017. In phase 3 trial, vedolizumab continuous to show long term efficacy than in trials of TNF inhibitors.Reasons may be due to its different mechanism of action and having longer half-life than TNF inhibitors.So there is less immunogenicity or less development of anti-drug antibodies and emphasising the long term efficacy of vedolizumab. During study,adverse events were observed in patients but which are not new or unexpected side effects.The patient who continued vedolizumab therapy throughout the entire study was able to maintain clinical response. Conclusion: VEDOLIZUMAB has shown efficacy and safety in patients who failed TNF-α antagonist and refractory to conventional treatments.It can be considered for the first line treatment with other biologicals for steroid dependent, steroid refractory patients and for patients not responding to immunosuppresant.This review describes the efficacy,safety and tolerability of vedolizumab reported in both randomised,controlled,clinical trials and from real world experience in patients with ulcerative colitis and crohns disease in order to identify its place in treatment algorithm for IBD.

Key Words: Effectiveness, Vedolizuma, IBD

PATIENT WITH ULCERATIVE COLITIS AT RISK FOR COLORECTAL CANCER

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Abstract

Objective: To assess the risk of colorectal cancer (CRC) in ulcerative colitis (UC) patients compared with extend & duration of ulcerative colitis & geographic variation.Method: Inflammation of the colon can lead to continuous turnover of cells in the intestinal lining, which causes irregularities that may lead to cancer. Meta-analysis by Eaden et al in 2001 shows that incidence of UC-associated CRC was estimated based on 116 articles involving 54478 patients in whom 1698 CRC cases were detected. Based on the 41 studies, the duration of UC was 3 cases per 1000 person-years, ie, an annual risk of 0.3% or 1 in 333 patients. Population based studies (within past 5 years) shows that this risk has decreased over time, despite the relatively low frequency of colectomies. Conclusion: Risk of colorectal cancer for patient with UC is found to be elevated & is estimated to be 2 % after 10 years, 8 % after 20 years & 18 % after 30 years of disease. Severe or extensive colon inflammation, 8-10 year history of Crohn's disease & UC, primary sclerosing cholangitis (rare condition that can cause bile duct inflammation & scarring), dysplasia, and family history of colorectal cancer are the significant risk factor for colorectal cancer.

Key Words: Risk Factors, Ulcerative Colitis, Colorectal Cancer

CHOCKING GAME: A REVIEW OF DESCRIPTIVE STUDIES

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Abstract

Background: Recently there is an increase in the number of adolescents engaging in thrill- seeking activities like "chocking game"-strangulation/asphyxiation by self or with a partner, inducing a state of euphoria due to decreased cerebral oxygen supply. Deaths due to chocking game are often reported as suicide or as accident which may result in underreporting of such cases. Objective: To conduct a systematic review of descriptive studies on the chocking game. Methodology: PubMed database was searched from inception to January 2020 without any restrictions using the keywords 'chocking game', 'asphyxial games' and 'self-strangulation'. Only descriptive studies with full text articles were selected for systematic review. Result: There were 5 studies including one case series with a total of 90 probable chocking game cases. There was a male preponderance of 87% among study population. The age of the study population varied from 6 years to 19 years with a mean of 13.3 years. Out of 90 cases only 4 cases survived the chocking episode. Electroencephalogram changes were observed in 2 cases and all of them had breathing difficulty. They were provided with several episodes of psychological counseling. They were discharged in general condition once their social and mental health was found reassuring. Conclusion: This review highlights the importance of value based education system with periodic psychological counseling for teenagers to make the teenagers aware of the ill effects of thrill-seeking games.

Keywords: Chocking game, Asphyxial games, Self-strangulation

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A CASE REPORT ON PATENT DUCTUS ARTERIOSUS WITH EISENMENGER SYNDROME

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Abstract
Patent Ductus Arteriosus is a persistent opening where the ductus arteriosus fails to close after the birth and this condition leads to Eisenmenger's syndrome. This syndrome is evident with ventricular septal defects and other congenital heart defects which is left untreated that leads to pulmonary hypertension, reversal of flow and cyanosis. A 40 year old female patient admitted with the complaints of shortness of breath and chest pain she is a known case of Eisenmenger syndrome, severe suprasystemic PAH and biventricular failure. She was on Tab.sildenafil 50 mg,Tab.ambrisentan 5 mg .On lab investigations ,Hb (17 gm%) and creatinine (1.3 mg/dl) found to be elevated. ECG report - right and left atrial enlargement, incomplete right bundle branch block, possible right and left ventricular hypertrophy, ST deviation and moderate T wave abnormality. Based on the objective data patient was diagnosed with Right and Left heart failure along with Eisenmenger's syndrome. The condition was managed with the help of inj furosemide 20 mg TID, T.spironolactone 25 mg BD, Inj.Ceftriaxone 1 gm BD along with past medications and condition were symptomatically managed. The prevalence of ES is 1-9 cases out of 10 lakh. ES requires regular cardiac monitoring as it can affect multiple organ system.

Keywords: Patent ductus arteriosus, Eisenmenger's syndrome, Pulmonary artery hypertension.

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A CASE REPORT ON EVANS SYNDROME

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Abstract
Evans syndrome is a very rare autoimmune disorder characterized by either simultaneous or sequential development of Autoimmune Haemolytic Anaemia (AIHA) and Idiopathic Thrombocytopenic Purpura (ITP) in absence of known underlying aetiology. A 60 year old male patient presented with the complaints of low grade fever since 3-4 days, loss of appetite, constipation, yellow coloured urine. On lab Investigation Hb, Platelet, PCV were found to be very low and serum bilirubin (indirect) was elevated. On further evaluation Direct Coomb's test was positive, increased serum iron and reticulocyte count. The peripheral smear report showed Haemolytic anaemia possibly of autoimmune aetiology. Based on the objective data the patient was diagnosed with Evans syndrome. The condition was initially treated with corticosteroid - prednisolone 60 mg OD, platelet transfusion. Later on azathioprine 50 mg was added, but the patient developed leucopoenia and the drug was switched over to monoclonal antibody rituximab. The patient was clinically better. The patient was maintained on prednisolone 2.5 mg OD. Evans syndrome is a rare chronic, relapsing and refractory disease sometimes may present acutely. It is diagnosed in less than 5 % of all patients with either ITP or AIHA at onset. Mean age at the time of diagnosis is 52 and is more prevalent in females.

Keywords: Evans syndrome, Autoimmune Haemolytic Anaemia

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A CASE REPORT ON OXALIPLATIN INDUCED ANAPHYLACTIC SHOCK

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Abstract
Oxaliplatin is a third generation platinum compound which is used as an antineoplastic agent. It interacts with DNA to form intra-strand/inter-strand cross linking and thereby affect DNA base pairing, replication, gene transcription and finally leads to cell death. Anaphylactic reactions related to platinum compounds are potentially life threatening. Comparing with other platinum compounds, oxaliplatin is less frequently associated with these reactions. A 67 year old female patient, a known case of Carcinoma Ovary ,previously underwent surgery and multiple lines of chemotherapy is now presented with progressive disease.Patient had history of allergy to carboplatin. After pre chemo evaluation, 1st cycle of chemotherapy with cyclophosphamide + oxaliplatin + bevacizumab was administered. Sudden after the administration of oxaliplatin patient had developed fatigue, weakness along with breathing difficulty, change of sound and cyanosis. Patient was diagnosed with anaphylactic shock induced by oxaliplatin. Patient was shifted to MICU and managed with Inj. Adrenaline (1/1000),salbutamol nebulizer, Inj. Magnesium Sulphate 1 amp in 100 ml NS, Inj. Calcium Gluconate 1 amp in 100 ml NS. Patient was improved and shifted to ward. At the time of discharge patient was better and hemodynamically stable. According to previous studies, the estimated incidence of oxaliplatin induced serious anaphylactic reactions was less than 2%.

Key words: Oxaliplatin, Anaphylactic shock, Antineoplastic agent

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A CASE REPORT ON STEROID REFRACTORY IDIOPATHIC THROMBOCYTOPENIC PURPURA

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Abstract
Idiopathic thrombocytopenic purpura (ITP) is an autoimmune disorder characterized by reduced platelet count. Steroid refractory ITP does not respond to or relapse after high dose steroid treatment given to reduce the risk of bleeding. A 35 year old female patient was admitted in the emergency department with the symptoms of fever, ecchymosis, conjunctival haemorrhage, angina bullosa haemorrhage in oral cavity, and vaginal bleed. Her platelet count was found to be 15000/cumm. On the next day her platelet count dropped to 1000/cumm. Immediately she was transfused with platelets. Lupus anticoagulant test, β2-glycoprotein IgM test and cardiolipin antibody tests were normal. Peripheral smear showed no features of leukaemia. She was started with high dose dexamethasone 40mg and IV immunoglobulin 1gm/kg/day. After that her platelet count increased to 59000/cumm and was symptomatically better. On the next day she had severe headache and vomiting that necessitated to take MRI scan which showed haemorrhage in the frontal brain. Within the next few days her platelet count subsequently dropped to 5000/cumm. So a second line treatment was started with rituximab 500 mg IV once weekly for 4 weeks along with tab.eltrombopag 50 mg and tab.mycophenolate 500 mg. Diagnosis and management of steroid refractory ITP is difficult which makes this case rare.

Key words: Idiopathic thrombocytopenic purpura, steroid refractory

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A CASE REPORT ON HYDATIDIFORM MOLE (VESICULAR MOLE)

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Abstract
Molar pregnancy is a type of gestational trophoblastic disease (GTD). A Hydatidiform mole is characterised by an abnormal proliferation of trophoblastic villi, leading to the formation of a grape-like mass in the uterus. It has the potential to locally invade the uterus and metastasize. A 27 year old woman in her first trimester of pregnancy came to the hospital for routine checkup. She had a medical history of one Full Term Normal Delivery (FTND) and 3 spontaneous abortions. On USG examination of the uterus, features of complete Hydatidiform mole with multiple cystic areas that appeared like a bunch of grapes with no obvious foetal parts were noted. Moreover her Beta-Human Chorionic Gonadotropin (HCG) level was found to be elevated (116245 mIU/ml), while all other lab investigations were in the normal range. Therefore, she was initially treated with mifepristone (200 mg) and then after 48 hours misoprostol (200 mcg) was administered for inducing abortion. After expulsion of the growth, dilation and curettage was done. After which the sample collected was sent for histopathological examination (HPE) and the result was found normal. Prompt identification of patients at risk for Molar pregnancy, to initiate early USG and histopathological examinations are critical due to its rare nature and life threatening outcomes of the disease, Gestational Trophoblastic Neoplasm (GTN) being one among them.

Keywords: Hydatidiform mole, Gestational Trophoblastic Disease, Gestational Trophoblastic Neoplasm

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CASE REPORT ON GULLION BARRE SYNDROME

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Abstract

Gullion Barre syndrome is a rare and serious autoimmune disorder which mainly affects the peripheral nervous system , the condition further cause weakness and paralysis of various muscles. This disease usually occurs after an infection. A 53 year old male patient presented with the complaints of insidious onset of difficulty in moving limbs. He was unable to stand or walk and also has difficulty in breathing when supine. The counts were checked and they were normal. The examination of limbs shows power grade 2/5 in the right upper limb and 1/5 in all other limbs. Deep tendon reflexes were completely absent and muscle tone was reduced. The nerve conduction study shows, abnormal/subnormal amplitude M wave which suggest axonopathy with no classical features of radiculopathy. The condition was managed by intravenous immunoglobulin 35 gram daily for five days. Intranasal oxygen at 2L/minute, subcutaneous enoxaparin 40 mg daily, vitamin supplements were also given for supportive care. Oral Pregabalin was also given for neuropathic pain. Further management of the condition was done through physiotherapy.

Keywords: Gullion Barre syndrome, autoimmune disorder, axonopathy, intravenous immunoglobulin.

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PHARMACOEPIDEMIOLOGY OF ANTIBIOTIC USAGE IN VENOMOUS SNAKE BITE CASES: A MULTICENTRE STUDY IN KERALA

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Abstract

Introduction: Different antibiotics were used in snakebite cases. There were several conflicting recommendations on the use of antibiotics in snake bite victims

Objective: To identify the pharmacoepidemiology of antibiotic usage in venomous snake bites in different hospitals of Kerala

Methodology: Study time: 10 months

Study site: Selected 4 hospitals in Central Kerala (Caritas hospital, Paalana hospital, LF hospital and Charis hospital)

Study design: Retrospective, Observational study

Result: All cases of venomous snake bite cases admitted in general medicine department of selected four hospitals from January 2017 to December 2017 were included in the study. About 26 different types of antibiotics were used. Ornidazole was the most commonly used antibiotic (14.34%) followed by piperacillin (11.81%), metronidazole (11.39%) and ampicillin (10.33%). Other antibiotics used are Cefixime (8.94%), Linezolid (8.64%), Amoxicillin and Clavulanic acid (7.08%), Cloxacillin (5.06%), Cefuroxime (2.95%), Ceftriaxone (2.53%), Azithromycin (1.47%), Ofloxacin (1.26%), Cefoperazone (1.2%), Meropenem (0.63%), Fusidic acid, Vancomycin, Colistin and Clotrimoxazole (0.42%), Levofloxacin, Soframycin, Clindamycin, Ciprofloxacin, Imipenem, Bacitracin and Fluconazole (0.21%). Different formulations of antibiotics used are injection (65%), oral (30%), topical and eye drops (2%). Most of the cases were used more than 3 antibiotics. According to percentage of antibiotics used more than 3 in selected four hospitals of Kerala, Paalana hospital (97.67%), Caritas hospital (29.411%), LF hospital (8.57%) and Charis hospital (6.66%).

Conclusion: There is a need of region specific antibiograms developed to treat snake bite cases in order to prevent patients from progressing to cellulitis which leads to additional hospital burden.

Keywords: Pharmacoepidemiology, snakebite, formulations.

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A CASE REPORT ON NEUROLEPTIC MALIGNANT SYNDROME

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Abstract
Neuroleptic Malignant Syndrome is a life threatening rare reaction to anti psychotic drugs that treat mental health conditions like schizophrenia, bipolar disorder etc. mainly associated with high fever, confusion, rigid muscles, variable blood pressure, and tachycardia and sweating. A 70 year old male patient presented with the complaint of fever, confusion and tremor. Patient had a history of psychiatric illness and have a medication history of oxcarbazepine 300mg, quetiapine 200mg, trihexyphenidyl 2mg, divalproex sodium 500mg, haloperidol 5mg, nitrazepam 10mg.Previous reports showed that patient had bipolar disorder mainly characterised by decreased sleep and wandering over. On lab investigation Creatinine Phosphate Kinase was found to be elevated. Urine examination showed elevated white blood cell count. Patient also had low and high blood pressure. From the data it was diagnosed as Neuroleptic Malignant Syndrome. The atipsychotic drugs was discontinued and the condition was managed with bromocriptine 2.5mg. Other conditions are symptomatically managed. Incidence rate of neuroleptic malignant syndrome range from 0.02-3% among patients taking antipsychotic medication.

Keywords: Neuroleptic Malignant Syndrome.

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A CASE REPORT ON KAWASAKI DISEASE (MUCOCUTANEOUS LYMPH NODE SYNDROME)

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Abstract
Kawasaki disease (KD) is rare conditioncharacterised by acute, systemic inflammatory processes that cause fever, exanthematous rash and vascular disease in young children. A misdiagnosed 7 year old male patient with severe febrile illness was transferred from another hospital to intensive care unit of our hospital with chief complaints of cervical node enlargement, rashes all over the body, dry fissured lips, and fever since 2 weeks, periungual peeling, bilateral non purulent conjunctivitis and strawberry tongue. Laboratory investigation showed low levels for hemoglobin (9g/dl) and albumin (2.6 g/dl) but with levels higher than normal for WBC count (20,470cumm), platelet count (5, 94,000 lakhs), ESR (97mm/hour) and CRP (6.8mg/L). Peripheral smear reported normocytic normochromic anaemia, moderate leucocytosis, severe eosinophila and thrombocytosis. The child was diagnosed for KD based on typical diagnostic criteria and treated with a single dose of immunoglobulin-G 2g/kg over 12 hour and daily dose of aspirin 150mg 2 tabs Q6H resulting in considerable clinical improvement. A single site study from Chandigarh was the only published epidemiologic study for KD in India. Study reported that KD was found to be ten times more common than rheumatic fever and when left undiagnosed it resulted in coronary sequale in young adulthood. KD is treatable with early diagnosis by including it in the differential diagnosis of all febrile illness that persists more than 5-7 days thereby preventing a large portion of cardiac burden.

Keywords: Kawasaki disease, cardiac aneurysm, eosinophila.

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FANCONI SYNDROME IN FEBRILE NEUTROPENIC CARCINOMA PATIENT:A CASE REPORT

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Abstract

Fanconi syndrome is associated with the impairment of proximal tubular reabsorption, which leads to Renal Tubular Acidosis(RTA) characterised by increased excretion of electrolytes. Febrile neutropenia(FN) is a condition commonly seen in chemotherapy patients, with the signs of fever and low Absolute Neutrophil Count(ANC).A 72 year old male patient was admitted with the complaints of fever, breathlessness for the past two days, with one episode of haemoptysis. It is a known case of carcinoma lung® undergoing chemotherapy in other hospital. He had a temperature of 100°F.Supportive measures were taken. The haemogram showed Total Count(TC) as 2400cells/mm3, 8.1g% of Haemoglobin and 126mmol/L of sodium. Managed with 3%NS(100ml) and blood transfusion .On third day,ANC was 700cells/cumm, TC decreased to 1200cells/mm3 and CRP was 266.07mg/L, which indicates FN. Managed with Filgrastim(300mcg/0.5ml) along with Piperacillin-Tazobactam 4.5gQ6H and Gentamycin-80mgBD.Then, the patient had massive haemoptysis, managed with Tranexamic acid(100mg/5mlQ8H) .Later, serum potassium was found to be consistently low(3.6-2.1mmol/L),but improved to 3.7mmol/L with intensive potassium replacement therapy(20.25g in ten days).On the day of discharge, the levels of magnesium and bicarbonate was found to be 0.6mg/dl and 18mEq/L respectively. Thus, the diagnosis of Aminoglycoside induced Fanconi syndrome and Type 2 RTA was made. Gentamycin was withdrawn, supplementations were given and the patient got discharged for the next cycle of chemotherapy. The prevalence of FN condition is 17.5% in one lakh population. Patients undergoing chemotherapy are at high risk of electrolyte imbalance and haemogram variations. Therefore, careful monitoring is required for oncology patients with complications.

Keywords: Febrile neutropenia, Fanconi Syndrome

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A CASE REPORT ON PAEDIATRIC ANAPLASTIC ASTROCYTOMA WITH PIK3CA GENE MUTATION

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Abstract

Anaplastic astrocytoma is a rare malignant, diffusely infiltrating, astrocytic, brain tumour categorised under the high grade gliomas (WHO grade III-IV).A 12 year old male patient who is a known case of anaplastic astrocytoma, WHO GRADE III,1p/19q non-codeleted (diagnosed 07/03/2019) was admitted with complaints of fever, generalised weakness and excessive sleepiness. He was treated previously with chemotherapeutic drugs temozolomide, irinotecan, bevacizumab and PCV regimen but no progress was obtained and hence discontinued. The patient was given IV fluids, antibiotics, antiedema and anti-seizure medicines and other supportive measures. Tumour genomic DNA and RNA isolated from FFPE was used to perform targeted gene capture and clinically relevant mutation was identified in the PIK3CA gene of the subject on 20/01/2020. A missense variation that results in the amino acid substitution at codon 542 was detected in the PIK3CA gene of this subject. An FDA approved treatment regimen including a targeted PIK3CA inhibitor is available for specific subtypes of breast cancer. While PIK3CA variants are highly prevalent in many other cancer types, targeted therapies for PIK3CA variants are still in early clinical trial phases in other cancer types. However, the role of the variant identified in the subject is not very well documented in the medical literature for the tumour type in the subject.

Keywords: Anaplastic astrocytoma, gliomas, PIK3CA gene mutation.

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ESCITALOPRAM INDUCED HYPONATREIMA: A CASE SERIES

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Abstract
Escitalopram is a drug of choice for major depression, generalized anxiety belonging to class of SSRI. The Escitalopram induced hyponatremia is less common but very serious and fatal condition. This case series reports 4 cases 1. A 58-year-old female having psychosis and generalised anxiety developed hyponatremia on administration of Nexito on 5th day (Na-125). It was managed symptomatically and withheld the drug. 2. A 32-year-old female having major depression, taking Escitalopram for 1 month, presented to emergency department due to fatigue and generalised weakness on checking electrolyte it was found to be severe hyponatremia (Na-119). Immediately drug was withdrawn with corrective measures and after patient became stable Escitalopram was started again. 3. A 72 years old male with CPOD and depression prescribed with Nexito developed hyponatremia (Na-128) managed clinically without De-challenging. 4. A 50-year-old female patient with generalised anxiety prescribed with Nexito, complained of weakness on 7th day and found to be hyponatraemic (Na-123) and the condition was managed symptomatically by withholding the drug. On ADR probability scale, it was found to be certain for 3 and probable for 1 in WHO scale and Probable in Naranjo scale. This indicates need for ADR monitoring of most commonly prescribed Escitalopram with continuous monitoring of serum sodium.

Keywords: Escitalopram, Hyponatremia

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MYASTHENIA IMPENDING CRISIS: A CRITICAL PERIOD TO INTERVENE

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Abstract
Myasthenic crisis is a serious occurrence, affecting up to 27% of patients with myasthenia gravis. It is caused by severe weakness of respiratory muscles, upper airway muscles (bulbar myasthenia) or both. It is typically precipitated by poor control of generalized disease, medical treatment for bulbar myasthenia (steroids and anticholinesterases) and other recognized triggers like infection, emotional stress, hot environment, sudden elevation of body temperature and hyperthyroidism and certain drugs. Myasthenia impending crisis is the beginning of myasthenia crisis.A 55 yr old male patient with history of Diabetics Mellitus, Hypertension and myasthenia gravis was presented with chief complaints of fever for 1day and cough. The diagnosis made was Myasthenia Gravis impending Crisis with elevated CRP(21.1mg/L), increased WBC(12,770cells/cmm), PCT(0.35ng/ml) and low lymphocyte counts(7%).past medications include antidiabetics, antihypertensive, acetylcholine inhibitors and immunosuppressants (prednisolone 10mg half OD and azathioprine 50mg BD) .RFT and electrolytes were normal. Precipitant of this crisis could be respiratory infection. Infection could have resulted from steroid induced immunosuppression .Current therapy for respiratory illness was antihistamines, antitussives, antibiotics, antivirals and bronchodilators. Typically, anticholinesterase inhibitors are discontinued to avoid excessive secretions while the patient is experiencing respiratory failure. But in this case, Patient was treated with two acetylcholine inhibitors neostigmine 15mg BD and pyridostigmine 60mg qid which has has less evidence. Patient was prophylactically given antiemetics and probiotics to prevent cholinergic crisis like nausea, vomiting and diarrhoea. Patient's condition improved after 5 days of treatment with normal CRP (1.8mg/L), WBC(8810cells/cmm) and lymphocytes (25%).

Keywords: Myasthenia crisis, acetylcholine inhibitors, precipitants

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CASE REPORT ON PEMPHIGUS VULGARIS

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Abstract

Pemphigus vulgaris is an uncommon, potentially fatal, autoimmune disorder characterized by intraepidermal blisters and extensive erosions on apparently healthy skin and mucous membranes. It usually occurs in middle-aged patients, with very rare reports among children (0.5-3.2 cases per 100,000 population). The exact etiology is not known, it's supposed to be the genetic tendency coming in contact with environmental triggers, like chemicals or drugs, leading to production of autoantibodies against desmosomes.

A 75-year-old female patient came with complaints of itching all over the body with acute onset of blisters on lips, trunk and limb for 2 months. The patient had no previous history of medications. On examination, the patient had multiple bullous lesions and erosions on lips, oral mucosa, trunk and limbs. All lab parameters were found to be normal and the skin biopsy reflected lack of epidermal cohesion specific for pemphigus vulgaris. The patient was managed with corticosteroids, immunosuppressants, anti-histamines, antibiotics and discharged once she was symptomatically better.

Most patients are initially misdiagnosed and improperly treated for months or even years. Physicians must be sufficiently familiar with clinical manifestations to ensure early diagnosis and rational treatment, since it determines the prognosis and course of the disease.

Keywords: Pemphigus vulgaris, desmosomes

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BEHCET'S DISEASE (SILK ROAD DISEASE): A RARE AUTOIMMUNE DISORDER

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Abstract

Behcet's disease (Silk Road disease), a rare autoimmune multisystem inflammatory disorder characterised by recurrent oral and genital ulcer, relapsing uveitis, mucocutaneous, articular, gastrointestinal, neurological & vascular manifestations, with no cure. A 55-year-old male patient was admitted with C/o joint pain in lower limbs, oral ulcer and scrotal ulcer. On physical examination the patient was conscious and oriented with B/L ankle joint effusion. All Lab investigation including RA factor was normal, with decreased Serum vitamin D. HLA B51, ANA were checked and oral mucosal biopsy was done. The earliest sign showcased was oral erosion, multiple shallow ulcer and few eroded nodules in the scrotum. Then the patient presented with joint pain and numbness on right leg. On neurological examination, an abnormal motor nerve conduction observed with right tibial neuropathy. Initially, suspicion with syphilis and tarsal tunnel syndrome and after 7-8 days of admission, diagnosed as Behcet's disease based on dermatological, rheumatologic and neurological manifestations. Treatment given was symptomatic and supportive with pain relievers, corticosteroid, antibiotics, IV fluids, PPI, vitamin supplement, laxative and local anaesthetic. Without adequate knowledge it's difficult to diagnose, due to rarity and standardized treatment protocol are controversial at present.

Keywords: Behcet's disease, ulcers, joint pain, neuropathic pain

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5-FLUROURACIL INDUCED CARDIAC TOXICITY; A CASE REPORT

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Abstract

5-FU is an integral part of the chemotherapy for colorectal cancer. It is known as the second most common drug to cause cardiotoxicity during chemotherapy with manifestations of chest pain, acute coronary syndrome and death.

A 62-year-old male patient with rectal cancer and liver secondaries was admitted for his 2nd cycle of chemotherapy with FOLFOX6. At the time of admission, the patient was stable with no fresh complaints. After pre medication while the patient was on flow with 5FU over 16hrs, he developed chest discomfort which lasted for 5 minutes with no radiation and diaphoresis.

ECG showed new onset hyper-acute, T waves for which he was shifted to MICU. Echo showed fair LV, RWMA and mild PE. Troponin I was elevated initially from 14.5 to 67.7 on subsequent days. Patient was treated with anti-platelets, vasodilators and statins. Symptoms relieved upon cessation of 5-FU with consequent drop in Troponin I level.

Thus, the above case report adds on with the other published articles signifying 5-FU induced cardiac toxicity and thereby reveals the need of close cardiac monitoring in patients treated with the drug.

Keywords: FOLFOX6, Cardiac Toxicity, 5Flurouracil

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BRAIN METASTASES IN ALK-POSITIVE NON-SMALL CELL LUNG CANCER

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Abstract

Tumors harboring a translocation of Anaplastic Lymphoma Kinase (ALK) gene constitute a distinct genetic Non-small cell lung cancer (NSCLC) subtype. The prevalence of ALK mutation in NSCLC is about 8-10% and out of these, brain metastases occur in approximately 30% of the patients.

A 61-year old female patient was admitted with general weakness, headache and ataxia. She was a recently detected case of ALK-positive NSCLC with brain metastases on Crizotinib 250mg BD. MRI scan on 21/1/2020 showed severe edema of parietal-occipital lobes and mass lesions in right para sagittal occipital lobe. She was managed with radiation therapy (3000cGy/10F), corticosteroid, mannitol (medical decompression), acetazolamide, levetiracetam and morphine. A follow up NECT on 4/2/2020 failed to show any improvement in her condition which lead to the addition of Bevacizumab 100mg to the regimen. This showed a rapid improvement in the patient's condition. At the time of discharge, the patient was stable and she was prescribed with T. Ceritinib 450mg OD.

The addition and substitution of the right chemotherapeutic drug at various points during treatment is usually done with the appearance of toxicities, or unexpected disease progression. Though there are previous conclusive reports of Bevacizumab being used in cases with brain metastases, its combination with an ALK-inhibitor is rare and such pronounced results are of clinical importance.

Keywords: ALK-positive NSCLC, Crizotinib, Bevacizumab

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STEROID REFRACTORY CHRONIC IMMUNE THROMBOCYTOPENIC PURPURA: A CASE REPORT

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Nirmala College of Pharmacy, Muvattupuzha

Abstract

Idiopathic thrombocytopenic purpura(ITP) is an autoimmune disorder in which the immune system attacks and destroy it's own platelet cells resulting in excessive bruising and bleeding.Steroid refractory is a case in which patients either never respond or initially respond and develop recurrence while continuing steroid treatment.This is a case of a 47 year old male patient was admitted on ninethoctober who came with the complaint of purpura in multiple areas of the body.He had seen the rash many times on his body but was ignored.AnAyuvedic doctor under whom he was under a treatment of backpain at that time took first notice at it as a result of which he was admitted in the hospital. His Peripheral smear showed severe thrombocytopenia. Platelet count was initially 12000/cumm so he was started with dexamethasone 40mg OD. On the next day his platelet count was significantly increased to 20,000/cumm.He was discharged on eleventh October as his platelet count showed a gradual increase to 52,000/cumm and was found to be symptomatically better. but he again came with the same complaint on first November steroid refractory and was diagnosed with a Steroid Refractory case.His platelet count on the first day was 11,000.He was managed with dapsone 100 mg which is the second line given for ITP and a combination of tranexamic acid 250mg and ethsylate 250mg.As there is an improvement in the platelet count to 23,000 seen he was discharged.Only 20-30% of ITP cases fail to respond to steroids which makes this case rare.

Keywords: Idiopathic Thrombocytopenic Purpura, Steroid Refractory.

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A STUDY ON THE ASSESSMENT OF THE EFFECTIVENESS OF BARICITINIB IN PATIENTS DIAGNOSED WITH RA

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Abstract

Background: Rheumatoid Arthritis (RA) is a chronic systemic autoimmune disease with joint inflammation leading to loss of joint function as well as cartilage and bone damage. The aim of RA treatment is remission or reduction of disease activity. The Treatment Options are NSAIDs, glucocorticoids, cDMARDs, biologic DMARDs, biosimilar DMARDs, and targeted synthetic DMARDs. Baricitinib is an oral targeted synthetic (ts) DMARD that mainly inhibits JAK1 and JAK2 and the drug of choice in patients with inadequate response/intolerance to cDMARDs/ biological DMARDs. OBJECTIVE: The study was done to assess the effectiveness of Baricitinib in patients diagnosed with RA. METHODOLOGY: Study design: Retrospective Observational Study. Based on the inclusion criteria, all 7 RA patients receiving T. Baricitinib 4 mg OD along with other cDMARDs during the period of July 2018 to November 2019 were included in the study. Disease activity was measured based on DAS 28 score. Baseline DAS 28 was calculated and compared with the DAS 28 score after 3 months to evaluate the efficacy. RESULT: Baseline mean DAS 28 score was found to be 6 and after 3 months it had reduced to 2.86, which can be considered as a significant improvement in the disease activity. Four patients discontinued the therapy and the reason was found to non-availability and affordability issues as it cost around Rs 21000/- per month. CONCLUSION: Baricitinib was found to be an effective alternative choice of treatment of RA. However, the high cost of therapy is the major concern that reduces the patient adherence to this medication.

Keywords: DMARDs, Baricitinib.

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TOXICITY PROFILE OF MULTIPLE MYELOMA PATIENTS TREATED WITH DIFFERENT THERAPEUTIC REGIMENS

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Abstract

Background: Multiple myeloma (MM) is a neoplasm of the plasma cells that affects approximately 6.5 / 1,00,000 and is the second most common haematological malignancy.Pharmacologically MM is managed by targeted therapy, chemotherapy, steroids, and stem cell transplantation. Choice of regimen depends on the baseline characteristics and progression stage. However, increased toxic events can decrease the prognosis

Objective: To study the toxicity profile of multiple myeloma patients treated with different therapeutic regimens.

Methodology: 45 patients with newly diagnosed MM from a multi – specialty hospital from 2015 to 2019 were retrospectively analyzed. MM patients completed the regimens (Lenalidomide and Dexamethasone – RD, cyclophosphamide, bortezomib and dexamethasone – CyBorD; bortezomib and dexamethasone – BD; Thalidomide and Dexamethasone – TD, bortezomib, lenalidomide and dexamethasone - VRD) and follow up of at least 6 months were selected. Toxicity profile was categorized by using National Cancer Institute Common Terminology Criteria for Adverse Events (CTCAE) version 5.0.

Results: A total of 293 toxicity events were found. Toxicity profile of TD, BD, VRD, RD and CyBorD were 21.5%, 27.64%, 35.83% and 15.01% respectively. About 147 grade *1* toxicities, 92 grade *2* toxicities, 46 grade *3* toxicities and 8 grade *4* toxicities were identified. Among this, 209 were hematological, 43 were CNS, 39 were hepatobiliary and urinary system, and few other adverse effects noted were pedal edema, alopecia, cutaneous and skin infections.

Conclusion: The RD had comparatively greatest toxicity profile while CyBorD showed least toxicity profile. The study also pinpoints the need for systematic ADR profiling and follow-up in Cancer patients.

Keywords: Multiple myeloma, bortezomib, toxicity profile.

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THE USE OF ARTIFICIAL INTELLIGENCE IN CLINICAL DIAGNOSIS OF HEPARIN INDUCEDTHROMBOCYTOPENIA

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Abstract

Heparin induced thrombocytopenia (HIT) is a life threatning condition due to immunemediated side effect of heparin. HIT must be suspected when a patient who is receiving heparin has adecrease in the platelet count, particularly if the fall is over 50% of the baseline count. Diagnosis ofHIT needs both clinical and laboratory evaluation and remains a challenge . The combination ofclinical findings, thrombocytopenia characteristics and laboratory studies of HIT antibodies help indiagnosing HIT.Artificial intelligence use in bayesien algorithm help in early detection of HIT. Thebaysien algorithm for HIT incorporated 'four Ts' (4Ts) scoring and a stratified interpretation of ananti-PF4/H enzyme-linked immunosorbent assay (ELISA).

Objective: The use of artificial intelligence in clinical diagnosis of heparin inducedThrombocytopenia. Method The incorporation of artificial intelligence in interpreting early markers in HIT the 4Ts scoring(thrombocytopenia,timing of platelet count fall,Thrombosis or other sequelae .Other causes ofthrombocytopenia) 0-3: Low probability 4-5: Intermediate probability 6-8: High probability of HIT helps as a tool .This scoring system help in initiating steps to prevent the incidence of HIT when the scoring is in theprobable range and therapeutic management of the patient.Further laboratory tests like anti-PF4/H ELISA and serotonin release assay (SRA) can done in the highly probable cases to conform the diagnosis.

Conclusion: The incorporation of artificial intelligence would increase the monitoring on patients using heparin and decrease the incidence of heparin induced thrombocytopenia.

Keyword: HIT ,artificialintelligence,diagnosis,baysien algorithm.

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CERVICAL CANCER: A GLOBAL THREAT

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Abstract
Cervical cancer is the fourth most common cancer in women worldwide and the second most common female cancer in women aged 15-44 years old worldwide. The key risk factors for cervical cancer are prolonged HPV infections and HIV/AIDS, sexual activity before age of 20 years old, multiple sexual partners, tobacco smoking, oral contraceptive pill use for more than 5 years, history of cervical cancer in the family, high parity (more than 3 children born), and immune-depression due to malnutrition or other systemic diseases . A clear causal relationship has been established between human papilloma virus (HPV) infection and the development of **cervical cancer**. According to the data from UNAIDS, 79.9% of HIV is reported in Subsaharan Africa, followed by Asia and Pacific (10.4%). The incidence of cervical cancer, as reported by GLOBOCAN, was higher in Asia and Pacific (53.1%) and the sub-Saharan Africa (18.4%)
Keywords: Cervical cancer, women, second most common.

LYMPHEDEMA IN BREAST CANCER SURVIVORS: INCIDENCE AND MANAGEMENT

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Abstract
Background: Lymphedema is a chronic and progressive condition that impacts many breast cancer patients who may have had their axillary nodes (Axilla or armpit) removed as a part of breast cancer treatment. Infections and lymphangiosarcoma were prevalent in breast cancer survivors undergone surgery.OBJECTIVE: To review recent literatures on the occurence of lymphedema following breast cancer and its management.METHODOLOGY: Pubmed, newspapers were searched for recent articles. The literature search focused on systematic reviews based on lymphedema in breast cancer survivors.RESULT: Systematic studies report the incidence of breast cancer related lymphedema (BCRL) to a range of 0-3% after lumpectomy and 65-70% after modified radical mastectomy. Surgeons treating breast cancer find it safer to remove a number of lymph nodes from the arm pit (ALND) to check for spraed of disease but the resulting lymphatic system prevent the lymph flow and causes accumulation,leading to lymphedema. A new technique - Sentinal node biopsy,in which the affected nodes are identified and removed. Eventhough the prevalence have decreased , the chance cannot be subsided for lymphedema. Lowe incidence of lymphedema were found in patients who exercised regularly, who received education regarding lymphedema prior to surgery , and who performed preventive self-care activities. Treatment plan includes exercises, massaging ,compression, complex decongestive therapy (CDT) to increase flow of lymph-fluid.CONCLUSION: The review highlights the incidence of lymphedema in breast cancer survivors and importance of patient education , complex decongestive thearpy and other self care activities in subsiding lymphedema.
Keywords: Lymphedema , breast cancer, sentinal node biopsy , CDT .
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COMPARISON OF EFFICACY OF TACROLIMUS V/S CYCLOSPORINE IN ORGANTANSPLANT PATIENTS

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Abstract
Introduction: Immunosuppresants Has A Key Role In Prevention Of Organ TansplantRejection.Calcineurin Inhibitors Such As Tacrolimus(Fk506) And Cyclosporine Play A Vital Role In Prevention Of Allograft RejectiontheseImmunosuppresants Inhibit T Cell Activation By Binding To Intracellular Immunophilins
Objective: Comparison Of Eeficacy Of Tacrolimus V/S Cyclosporine In Organ Tansplant Patients.
Method: Calcineurin Inhibitors Are The Mainstay Of Immunosuppression In Renal Transplantation. Macrolide Molecule Inhibits Expression Of Il-2 By T Lymphocytesfda Approved Tacrolimus Effective Alternative To Cyclosporine.They Are The Cornerstone Immunosuppressant In Renal Transplantation.Tacrolimus Decrease Acute Rejection ,And Has Long Term Outcome. Cyclosporine Decrease Glomerular Filtration Rate,Renal Blood Flow,Increase Renal Vascular Resistance.Tacrolimus Has 6 Year Graft Survival ,Longer Graft Half Life,Better Renal Function,Decrease Blood Pressure ,Cholesterol.Mechanisms And Toxicities Are Similar Of Both. Tacrolimus Is 50 Fold More Potent Than Cyclosporine ,Has Proven To Be An Effective Rescue Agent In Recurrent Acute Allograft Rejection.Once Daily Tacrolimus Has Benefits In Clinical Transplantation Improving Medication Compliance,DecreasePkVariability,Reduce Risk Of Rejection.
Conclusion: Tacrolimus Can Prevent Acute Rejection.Late Acute Rejections In Tacrolimus Is Less Frequent,Lower Histological Grade Than In Cyclosporine Me Group.Tacrolimus Is Highly Efficacious In Immunosuppression In Organ Transplantation.Tacrolimus Is More Effective In Achieving Complete Remission As Compared To Cyclosporine With Less Side Effects.Tcrolimus Has Lesser Side Effects Compared To Cyclosporine.Tacrolimus 30-100 Times More Potent Than Cyclosporine.Tacrolimus Cause Lowering Of Ldl Cholesterol , Apolipoprotein B, Triglycerides.
Keywords: Immunosuppresants, Organ Transplantation, Allograft Rejection.

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ASSESSMENT OF PUBLIC OPINION ON VARIOUS METHODS ADOPTED FOR SAFE DISPOSAL OF UNWANTED MEDICATION IN MUVATTUPUZHA

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Abstract

Background: Improper disposal of drugs is an emerging serious issue that can affect the environment and human life by contaminate the air, earth and water bodies.

Objective: To assess the disposal practices adopted for unused medications.

Methods: By utilizing a predesigned questionnaire, distributed and filled by general public in Muvattupuzha, Kerala to assess their awareness, knowledge, and practice toward disposal of expired and unused drugs.

Results: A total of 509 participants were included in the study, 388 males and 122 females, with 179 graduates and 331 undergraduates. It was observed that 78.0% dump their unused medications to the garbage and 49.9% said antibiotics were disposed of by throwing into sewage.68.2% respondents stated that they didn't receive any guidelines for disposal of drugs. On analyzing overall result 28.35% of the total population were disposing drugs safely, and one-third population (71.64%) were disposing by harming the environment. Thus indicating, need for proper medicine disposal scheme as pointed out by 88.6% of respondents.

Conclusion: This study shows that gaps exist in the knowledge and practice about the proper disposal of expired and unused medications, with need for proper disposal scheme.

Key Words: Drug Disposal, Expired and Unused drugs.

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NATURAL AND SMALL MOLECULEINHIBITORS OF TYPE III SECRETION SYSTEM OF *Salmonella entereca*: A CRITICAL REVIEW

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Abstract

The importance of developing new antibiotics has long been recognized by the scientific community. The bacterial type III secretion system (T3SS) is an attractive anti virulence target as it is essential in the pathogenesis of many Gram-negative bacteria. Recent studies to develop T3SS inhibitors revealed that salicylideneacylhydrazide, syringaldehyde and thiazolidinone derivatives with 3,5 dimethoxy 4 phenol group possessed better T3SS activity. Moreover, many natural products have been identified to possess type III secretion system T3SS inhibitory properties. However, their biological targets remain unknown. The chemical diversity of T3SS inhibitors suggests that there are many different targets for T3SS inhibitors. This complicates the further design of new and more potent analogs. In this review we focused on specific inhibitors of Salmonella T3SS, to understand their structural features in relation to activity. A number of laboratories in the past few years, have made extraordinary efforts to discover new synthetic T3SS inhibitors but none of them advanced into the clinical studies. One major issue, along with anonymity of target, is that the current small molecule T3SS inhibitors have limited potency, with IC_{50} values in the single digits of micro-molar concentrations. Also, structurally related compounds demonstrated different efficiencies and consequences.If the complete structural elucidation of all of the T3SS structural proteins, effector proteins and chaperones can be achieved, the clear targets for T3SS inhibitors will be within reach. With a better understanding of their binding partners and mechanism of action, modern methods of analog design (e.g., computational modelling) can be employed effectively. This review provide an overall picture of the structure of T3SS,the history of development of T3SS inhibitors, Important chemical parameters required for the development of potent T3SS inhibitors and critically analyse the barriers for development of potent T3SS inhibitors.

Key words: T3SS inhibitors, Anti virulence target, Salmonella entereca

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DEVELOPMENT OF A HERBAL SUNSCREEN FORMULATION AND ITS EVALUATION

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Abstract

Ultraviolet radiation particularly UV-A and UV-B from the sun is the major cause of sunburn, erythema and non-melanoma skin cancer in humans. The incidents of harmful effects are increasing day by day.

Photoprotective agents like sunscreens and anti-oxidants are used for protection against harmful UV rays. Both synthetic and natural sunscreens are available in the market where sunscreens from natural origin gained greater acceptance because of much safety and greater protection. The purpose of this research is to develop a polyherbal sunscreen prepared from the extracts of *Vitis vinifera* and *Calendula officinalis.* These two are selected because of their acceptable antioxidant and photoprotective activity.

The polyherbal cream was prepared by incorporating the extracts. The various physiochemical properties of the cream were determined. Using UV spectrophotometric method, the sun protection factor (SPF) of the creams and using DPPH method the invitro antioxidant activity of the extracts were determined. The formulated sunscreen cream shown to have desirable SPF and anti-oxidant activity offering skin protection against UVA/UVB rays from the sun.

Key words: Sunscreen, Herbal, SPF, UV

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EVALUATION OF COUMARIN DERIVATIVES FOR ANTI COAGULANT AND ANTIBACTERIAL PROPERTIES

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Abstract

Background: Antibiotics such as Trimethoprim/Sulfamethoxazole, Ciprofloxacin, Levofloxacin, Metronidazole, Fluconazole, Azithromycin, and Clarithromycin are considered to be high risk when administered along with warfarin. They interfere with warfarin metabolism via CYP2C9, CYP1A2+, CYP3A4 and intestinal flora that synthesis Vitamin K leading to significant bleeding events. We hypothesise that introduction of appropriate groups in coumarins (warfarin derivatives) may impart antibiotic property without affecting it's anticoagulant property.

Objective: To identify coumarin derivatives which have significant antibiotic as well as anticoagulant property.

Materials and methods: Three (2a, 2b and 2c) coumarin derivatives were synthesised by Pechmann condensation reaction and characterised. They demonstrated significant antibiotic activity when tested against gram positive bacteria *Staphylococcus aureus* and gram negative *Escherichia coli* using agar well diffusion method and Amoxicillin as standard. The anticoagulant studies were done on these compounds by PT time method and compared with Warfarin. To get an insight on the mode of action, a molecular docking study was performed, using Autodock4 program and Vitamin k epoxide reductase enzyme (PDB:3KP9) as the target protein.

Conclusion: This study identified three coumarin derivatives with significant antibacterial activity. Two compounds showed comparable anticoagulant property, to that of warfarin. Interestingly, one compound, in contrast, improved overall coagulation effect on normal blood. Our studies proved that antibiotic activity can be induced into coumarin derivatives by introducing appropriate functional groups, while retaining their anticoagulant property.

Key words: Coumarin, warfarin, anticoagulant, antibacterial

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FORMULATION AND EVALUATION OF CONJUGATED MUCOADHESIVE MATRIX TABLETS CONTAINING ESOMEPRAZOLE PREPARED BY TIMERx TECHNOLOGY

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Abstract

Background: The recent advances in the emergence of gastro retentive controlled drug delivery systems envisages the development of mucoadhesive controlled release tablets for the treatment of gastric ulcers.Objective:This work deals with the formulation and evaluation of mucoadhesive controlled release tablets containing Esomeprazole magnesium hydrochloride prepared by TIMERxtechnology.The blend of TIMERx polymers Xanthan gum and Locust bean gum enhanced the duration of drug release in more controlled way.A total of 6 formulations namely F1,F2,F3,F4,F5 and F6 tablets were prepared by TIMERx technology containing bioadhesive polymers Chitosan,Carbopol 974P,Polyvinyl pyrrolidine,SodiumCMC,Sodium Alginate and Polaxomerrespectively.Materials and Methods:The prepared tablets were subjected to pre and post compression evaluation studies.The flow properties were shown to be excellent for all powder blends assessed from their Carr's Index values.F4 shown maximum hardness whereas F4 and F5 shown maximum mucoadhesion time with minimum swelling.Conclusion:Consideringmucoadhesiontime,swelling index and mucoadhesive strength F5 was selected and subjected to invitro dissolution studies and kinetic data analysis,which are compared with the marketed controlled release tablets of Esomeprazole.F5 showed the maximum cumulative percentage release of 64.20% following zero order release pattern,whereas marketed formulation showed a release of 36.62%.F5 had proved to be the best candidate considering maximum percentage drug release in controlled pattern.Mucoadhesion time and strength are prerequisites for Esomeprazole intended to be released on stomach and upper part of gastrointestinal tract,potentially decreasing gastric acid secretion in peptic ulcer patients.

Keywords: TIMERx, Esomeprazole ,Locust bean gum ,Xanthan gum,Controlled Drug Delivery System

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FORMULATION AND EVALUATION OF TOPICAL GEL INCORPORATED WITH NIMESULIDE LOADED MAGNETITE NANOPARTICLES

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Abstract

Nimesulide is a relatively COX-2 selective, non-steroidal and anti-inflammatory drug(NSAIDS) with analgesic and pyretic properties. It is used for the treatment of acute pain, inflammation and for the symptomatic treatment of osteoarthritis. But nimesulide is banned in many countries due to liver failure. Thus the present study was aimed to develop a suitable dosage form to apply topically at inflammatory conditions, without affecting internal organs. This study covert nimesulide into magnetically modulated topical gel for topical application. The magnetic field over the applied field helps to retard the movement of drug into the deeper tissues. This results in accumulation of dosage form and delivery of drug at controlled rate in the target site. Nanosized magnetite particles using HPMC K15M, PVP and HPMC E5 rate controlling polymers. The polymer and its concentrations were optimized. The prepared drug loaded magnetite particles were converted into topical gel preparation.

Keywords: Magnetite nanoparticles, nimesulide gel, co-precipitation, powder coating.

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DORZOLAMIDE OCUSERT FORMULATION FOR THE TREATMENT OF GLAUCOMA

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Abstract

Glaucoma is a neurodegenerative disorder characterized by the rise in intraocular pressure (IOP). The disease progressively damages the retinal ganglion cells (RGC) by introducing pressure to the optic nerve head. This may lead to the permanent loss of vision. Ocular hypertension occurs either due to the decreased outflow or increased production of the aqueous humour which is originally produced from the ciliary body. The IOP elevations are controlled in normal physiology by the flow of the aqueous humour. Current treatment methods available for the disease include the use of beta blockers, carbonic anhydrase inhibitors, cholinergic agonists, prostaglandins etc. Ocuserts are ocular inserts placed usually to the cul de sac, through which the drug is delivered at a constant rate. The objective of this work is to formulate the dorzolamide ocuserts by solvent casting method and evaluate it for the treatment of glaucoma. The ocuserts were prepared by mixing different concentrations of hydroxy propyl methyl cellulose and poly vinyl alcohol. Each ocusert were evaluated individually for identifying the weight variation, thickness, folding endurance, drug content uniformity, percentage moisture absorption, percentage moisture loss, surface pH and in-*vitro* drug release. Ideal physicochemical properties with controlled release profile suitable for ophthalmic use are obtained for all these parameters. The study results indicated that the ocusert formulation of dorzolamide will be a suitable alternative for its eye drop for the treatment of glaucoma; as it can prolong the ocular residence time and there by reduces the frequency of administration of conventional eye drop.

Keywords: Glaucoma, Intraocular pressure, Ocusert.

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NANO DRUG DELIVERY SYSTEM TO OVERCOME CANCER DRUG RESISITANCE

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Abstract

Objective: To overcome cancer drug resistance by nano drug delivery systems.

Methods: An evolving form of treatment which emphasis on alternative drug delivery is nanomedicine. It reduces unfavourable side effects to normal tissues and progresses the efficacy of treatment. Resistance towards cancer drug treatment is a complicated process .To overcome these problems nanomedicine can be used.. It reduces unfavourable side effects to normal tissues and progresses the efficacy of treatment. Cancer nanotherapeutics have overcome several limitations of conventional therapies, such as nonspecific biodistribution, poor water solubility, and limited bioavailability. Nanoparticles are designed to passively or actively deliver anti-cancer drugs to tumor cells. By using either passive or active targeting strategies, nanoparticles can increase the intracellular concentration of drugs in cancer cells thereby preventing toxicity to normal cells. Nanoparticles are usually surrounded by endosome, therefore escaping P-glycoprotein recognition,[9] one of the main mechanisms of drug resistance. Conventional chemotherapeutics possess some serious side effects including damage of the immune system and other organs with rapidly proliferating cells due to nonspecific targeting, lack of solubility resulting in impaired treatment with reduced dose and with low survival rate. Nanoparticles can be used for recognizing the cancerouscells and giving selective and accurate drug delivery avoiding interaction with the healthy cells

Conclusion: A number of underlying mechanisms regarding progression, metastasis, and invasion have been elucidated at both cellular and molecular levels, which serve as promising traits to focus on for nanodrug therapy when surgery, radiation, and chemotherapy are insufficient. Nanomedicines have increased circulation time, precise multiple targeting mechanisms, enhanced drug accumulation at the tumor site

Keywords: nanodrug, drug delivery, tumor multidrug resistance

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NOVEL METHOD FOR SYNTHESIS OF INDAZOLE DERIVATIVES AND EVALUVATION OF ITS ANTIMICROBIAL PROPERTY

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Abstract
Background:Indazole derivatives exhibit a versatile biological activity and have attained position in the field of medicinal chemistry.Objective:to synthesis indazole derivatives through a novel method and analyse the structure by IR,NMR and MASS spectra and evaluvate its biological activity like antimicrobial.Method: The substituted groups of aldehyde(chlorbenzaldehyde) and ketone(benzil) is reacted with hydrazine hydrate in presence of DMF to give a derivative and that upon the action of methyl iodide, KOH and acetone gives the indazole derivative.And the structure was evaluvated by spectral studies and its anti microbial effect through agar diffusion well method .Conclusion:indazole containing derivatives were synthesized from both aldehyde and ketone compounds through this novel method and it possess anti-microbial action(against E.coli).

Keywords: Indazole, IR, MASS, NMR, anti-microbial, novel method.

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MOLECULAR DOCKING STUDIES IN LETHAL FACTOR OF ANTHRAX TOXIN

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Abstract
Anthrax, a rare but serious infection which is caused by a spore forming bacterium bacillus anthrax, which is widely used as a biological warfare agent. Because of its high fatal rate, low cost of production, easy to weaponize as odourless invisible aerosols it is used extensively as biological warfare agent and this spore can remain viable for decades. This rod-shaped bacterium infects humans through the respiratory system, skin, or digestive tract. Upon inhalation, spores get adhered to the alveolar macrophages and germinate. Bacteria which migrated to the lymph node secrete an exotoxin comprised of protective antigen (PA), lethal factor (LF) and edema factor (EF) that constitute the anthrax toxins (AT). LF is a Zn-dependent metalloprotease that cleaves several members of the MAPKK family near the N-terminus thereby abrogating an essential signal transduction pathway of the host macrophage which ultimately cause cell death. LF is therefore considered the dominant virulence factor of anthrax. We performed molecular docking studies using x ray coordinates of lethal factor which propose several new opportunities to the drug design against anthrax.In this work we are discussing structural characteristics required for designing compounds as safe and effective antitoxin inhibitor which specifically act on lethal factor.

Keywords: - anthrax, lethal factor, biological warfare agent, molecular docking

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INSIGHTS ON Sip-B ACTIVE SITE AND ITS INHIBITORS: AN IN SILICO APPROACH

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Abstract
Salmonella enterica serovar Typhi (S. Typhi) and S. Paratyphi, namely typhoidal Salmonellae, are the cause of (para) typhoid fever, which is a devastating systemic infectious disease in humans. Salmonella enterica possesses two virulence-related type III secretion systems that deliver more than forty effectors. Type III secretion systems are molecular machines used by many Gram-negative bacterial pathogens to inject proteins, known as effectors, directly into eukaryotic host cells. SipB, SipC, and SipD are a group of proteins known as translocators that are themselves secreted through T3SS1. The cell invasion protein, SipB has been identified as a potential target which is known to be involved in important functions like host cell entry, transfer of other effector proteins into the host cell, inducing macrophage apoptosis, activating proapoptotic enzyme Caspase I for inducing autophagy. Inhibitors of SipB can be developed as potential anti virulent agents. Currently, 75 natural compounds have been identified as inhibitors of SipB. In this review we compiled inhibitors of Sip-B and identified their important interactions and structural characteristics required on the active site of Sip B using Autodock.

Key words: In silico, SipB, autodock, antivirulant.

PHYTOCHEMICAL SCREENING AND ANTI-INFLAMATORY ACTIVITY OF CENTELLAASIATICA

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Abstract
*Centellaasiatica*is a valuable medicinal herbaceous aromatic creeper which has been valued for centuries in ayurvedic medicine. Phytochemical analysis of *Centellaasiatica*(Apiaceae) plant extracts revealed the presence of various biochemical compounds such as alkaloids, flavonoids, glycosides, phenolic compounds, triterpenoids and saponin etc. Since phenolic compounds, triterpenoids and flavonoids have remarkable anti- inflammatory, anti-arthritic and antioxidant activities, so our present work aims at evaluating the in vitro anti-inflammatory activity by Human Red Blood Cell (HRBC) membrane stabilization. The inhibition of hypotonicity induced HRBC membrane lysis was taken as a measure of the anti-inflammatory activity. The maximum membrane stabilization of *Centellaasiatica*extracts was found to be 94.97% at a dose of 2000 µg/ml. The results show that the extracts of Centellaasiatica exhibited anti- inflammatory activities. *Centellaasiatica*is a profusely branched prostate herb consisting of active principles such as Vallarine, Asiaticoside, Sitosterol, Tannins, Oxy - asiaticoside. Asiaticoside is used in the treatment of leprosy. Sitosterol and tannin possess antiprotozoal and spasmolytic property. According to Siddha literature, its leaves are used in the treatment of syphilis, all types of fever, children's abdominal disorder, elephantiasis and hydrocele and these features are highlighted in thisarticle.

Keywords: Centellaasiatica, Anti-inflammatory, HRBC membrane stabilization.

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GC- MS ANALYSIS: A VALUABLE TOOL IN CHEMICAL CHARACTERIZATION OF ESSENTIAL OILS

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Abstract

In last few years, there has been an increase in the use of aromatic medicinal plants and their essential oils in scientific research and industrial applications including nutritional, pharmaceutical, and cosmetic uses. Gas chromatography/mass spectrometry (GC/MS) is the most ubiquitous analytical technique for the identification and quantitation of organic substances in complex matrices like essential oils. Decades after it was firstly performed, the GC-MS technique provides unsurpassed advantages, such as the robustness and the availability of EI spectral libraries.The GC-MS is indispensable in the fields of environmental science, forensics, health care, medical and biological research, health and safety, the flavor and fragrances industry, food safety, packaging, and many others. At present, approximately 3000 essential oils are known, 300 of which are commercially important especially for the pharmaceutical, agronomic, food, cosmetic, and perfume industry. Terpenes in essential oils can be identified and quantified at picogram levels by GC-MS.Since it is impossible to identify some terpenes by mass spectrum only, the Adams library with retention times and Kovat's indices is the only terpene library that one can use to identify more than 95% of the components in common essentials oils with certainty.

Keywords: Aromatic Medicinal Plants, Gas chromatography, Mass Spectrometry. Essential Oils.

DEVELOPMENT OF NOVEL MULTITARGETING ANTICANCER DRUGS FROM PHYTOCHEMICALS

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Abstract

Objective: To determine the role of phytochemicals in chemoprevention of cancer.

Method: Cancer is the most life threatening health problem affecting people of all ages .According to WHO ten million cases and around 6 billion deaths are attributed to cancer per year globally and about 10-70% of human cancer mortality is attributed to diet.The NCI(National Cancer Institute) has identified around 35 plant based foods which have cancer preventive properties. In this context capsaicin, curcumin, diallysulfide, genitein are considered as potential alternative sources of safer chemicals which possess chemoprevention. Chemoprevention involves the use of chemical agents to inhibit, reverse or retard tumor genesis. Lee Wattenberg proposed chemopreventive agents in to blocking agents and suppressing agents. These inhibitory influences suppress the final steps of carcinogenesis.

Conclusion: Efficacy of chemotherapy now has significant limitation by the intrinsic and cancer cells develop resistance to anticancer drugs. Currently available synthetic anticancer drugs possess severe immunosuppression and mortality rate due to organ failure .The induction of apoptosis in a neoplastic cell without affecting normal cells of body is a key of taking phytochemicals and these modulate the molecular targets of cancer and induce cytoprotective enzymes and it detoxify an remove dangerous reactive substances formed by cancer inducing agents. Further exploration of anticancer potential of these agents may pave the way for the development of novel multitargeting anticancer drugs from phytochemicals.

Keywords: Phytochemicals, Carcinogenesis, Cytoprotective.