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ABSTRACT BOOK

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DPT-001

A Review on: Herbs used as Antimalarial drugs

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People have been using plants as a traditional medicine for thousand years ago. Herbal plants play an important role in preventing and treating of human diseases. Most of the antimalarial drugs have been derived from plants or plants parts which are being used since ancient times for the treatment of malaria. Malaria is one of the most common major health problems all over the world. It is estimated that there are 300–500 million acute cases of malaria worldwide annually. Malaria is an infectious disease caused by single-celled obligate parasite known as Plasmodium and is transmitted to man through the vector Anopheles mosquito. Malaria is caused by a parasite called *Plasmodium,* Which is transmitted via bites of infected mosquitoes. Human malaria is caused primarily by four species of *Plasmodium*, namely *Plasmodium falciparum*, *Plasmodium vivax*, *Plasmodium malariae*, and *Plasmodium oval.* Malaria is a serious cause of mortality globally. This review gives a detail accounts most of the recently-reported of plants possessing significant antimalarial activities.

Key words: Herbal Plants, Antimalarial drugs.

DPT-002

A Review on PEGylated Liposome formulation for targeted drug delievery

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Among several capable new drug-delivery systems, liposomes represent an advanced technology to deliver active molecules to the site of action, and at present several formulations are in clinical use. These closed bilayer phospholipid vesicles have witnessed many technical advances in recent years since their first development in 1965. Extensive research is being carried out using these nano drug delivery systems in diverse areas including the delivery of anti-cancer, anti-fungal, anti-inflammatory drugs and therapeutic genes. Due to new developments in liposome technology, several liposome-based drug formulations are currently in clinical trial, and recently some of them have been approved for clinical use eg. Anastrozole,celecoxib,flavopiridol etc. The major drawbacks of the liposomal formulation is its rapid clearance from blood due to the adsorption of plasma protein to the phospholipid membrane of the liposomes, thereby triggering the recognition and uptake of the liposomes by the mononuclear phagocytic system (MPS) when the surface of the liposomes is modified with a flexible hydrophilic polymer such as polyethylene glycol PEG), the uptake by MPS could be retarded. This technology has resulted in a large number of liposome formulations encapsulating active molecules, with high target efficiency and activity. Additional, by means of synthetic modification of the terminal PEG molecule, PEGylated liposomes can be actively targeted with monoclonal antibodies or ligands. Liposome are prepared by thin film hydration method, Sonication method, solvent dispersion method etc.

Keywords: PEGylated Liposome; Targeted drug delievery ; Novel drug delievery

DPT-003

E-learning in Pharma Education System

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In modern pharmacy education system, e-learning has emerged as a new pedagogy. As students and teachers progressivelystrive for e-learning opportunities for an array of educational and individual benefits, it is essential to assess the effectiveness of these programs. E-learning describes effectiveness measures, and creates the evidence for each measure. It also effectively increases knowledge and is a highly acceptable instructional format for pharmacists and pharmacy students. On the other hand, there is limited evidence that e-learning effectively improves skills or professional practice. There is also no evidence that e-learning is effective at increasing knowledge long term; thus, long-term follow-up studies are required. Translational research is also required to evaluate the advantages of e-learning at patient and organizational levels.

Keywords: Pharmacy education, e-learning, knowledge, Internet

DPT-004

Marine algal steroids: QSAR studies

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The steroids of the brown alga *Turbinariaconoides* were recognized as having mild-to-moderate cytotoxicity in HeLa cell, as it is being investigated towards determination of toxicity with various drugs. The cytotoxicity in HeLa cells was expressed in terms of 50% cytotoxic concentration (CC_{50}). These oxygenated steroids exhibited cytotoxicity against HeLa cells with CC_{50} values ranging from 60.9 µg/mL to >100 µg/mL. To analyse for their cytotoxicity, Quantitative structure activity relationship (QSAR) study was performed. It was done by multiple regression analysis with simulated annealing method of partial least square (PLS) model. A PLS model (r^2 = 0.90, q^2 = 0.80, pred_r^2 = 0.96) was used as a base of consensus prediction of cytotoxicity. QSAR studies indicated the carbon atom (TCO4: 12%) and any atom (T227: 15%) away from the oxygen and double bond respectively, atomic valence connectivity index-order 0 (chiV0: 50%) and distance between most hydrophobic and hydrophilic point on the VanderWaals surface (XAMostHydrophobicHydrophilic distance: 20%) correlating well with mild cytotoxicity while the partial charges of the molecules (dipole moment: 25%) contributing moderate cytotoxicity. The 3D QSAR model further described that less bulkier substituent is required at steric site S_2441. Thus it can be concluded from the present study that cytotoxicity can be achieved by modifying the aromatic ring and preferring less bulky group to reduce steric hindrance.

Keywords: *Turbinariaconoides*, 3D QSAR, HeLa cells.

DPT-005

A study on"Anti-ulcer activity of *Quercus oblongata* ethanolic root extract on Ethanol induced Gastric ulcer in Wistar rats"

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Peptic ulcer is a disorders or defect of the surface of Gastrointestinal tract. Etiologically peptic ulcer disease is the product of imbalance between aggressive factors (Gastric acid, pepsin, *H. pylori*.etc*)* and defensive factors like (mucus, bicarbonate and prostaglandins.) which breaks or damages the mucosal barrier of GIT. Although a number of antiulcer drugs such as H_2 receptor antagonists, proton pump inhibitors and have side effects and limitations. Herbal medicine deals with plants and plant extracts in treating diseases. These medicines are considered safer because of the natural ingredients with no side effects. Banj oak is the most well-known broadleaf tree found generally in the mid height of Central Himalayas in India, botanically known as ***Quercus oblongata*** is a valuable medicinal plant. Traditionally different species of *Quercus* in different formulations were used as an antibacterial, antioxidant, astringent, Analgesic , Anti-inflammatory and Hepatoprotective agent. The research work was designed to explore the anti-ulcer potential of roots of the plant. The finding of the research work showed that ***Quercus oblongata*** might be a potential candidate for further research. As results exhibits that ***Quercus oblongata*** reduced the volume of gastric secretion by **2.083±0.06009** at a dose of 300mg/kg , pH of the gastric fluid was elevated **4.258±0.1734**. The ulcer score , number of ulcer and ulcer index were found to be **0.5833±0.2007, 1.000± 0.3651 and 7.913±0.5540. respectively.**

Key words: Peptic ulcer, Antibacterial, Antioxidant, Analgesic , Anti-inflammatory

DPT-006

Nanoparticles : Potential carrier for targeted drug delivery

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Nanoscale drug delivery systems are emerging technologies for the rational delivery of drugs. Design characterization, production and applications of structures, devices and systems by controlling shape and size at nanometer scale (1-100 nm) is refers to nanotechnology. Their use offers improved pharmacokinetic properties, better therapeutic action, better bioavailability, controlled and sustained release of drugs and more importantly, lower systemic toxicity and thus improving patient complaince. Several nanoformulations are successfully used, which includes nanoparticles system (polymeric/solid lipid), liposomes, dendrimers, nanoemulsions, nanosuspension, ligand mediated nanosystems and nanoemulgels. In the current presentation, the aim is to present the overview on nanoparticles, various nanoformulations, their advantages, applications and future aspects.

Keywords: Nanoparticles, Bioavailability, Nanoemulgel.

DPT-007

SELF NANOEMULSIFYING DRUG DELIVERY SYSTEM: POTENTIAL & CHALLENGES

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SNEDDS are the self nano emulsifying drug delivery system consists of oil, surfactant, co-surfactant mixture. Aqueous dilution of SNEDDS produces nano emulsification of oil phases led to formation of nano droplet with size range from 20-200 nm. Physically these are transparent, clear liquid and with low viscosity. Due its small nano droplets size, it owes vast surface for permeation across the gut wall, better solubilization potential of surfactant and co-solvent. It can enhance dissolution characteristics of poorly aqueous soluble drugs. It possesses higher contributing factors which summed up to have better absorption of drug with stability enhancement. Not only SNEDDS improves the bioavailability of poor soluble and poorly permeable drugs, the physical stability of the drugs are also enhanced. Major challenges associated with SNEDDS are limited choice in formulation exicipients available, poor availability of nanoemulsion region in ternary diagram, ageing of droplets size, enzymatic degradation of surfactant in GIT and irritation to GIT mucosa.

Keywords: SNEDDS, nanoemulsion, surfactant, ternary phase diagram, solubilization

DPT-008

Banned Drugs

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All the formulations are meant for prevention or treatment of ailments and diseases, out of which only a few drugs are lifesaving and essential; rest of the drugs are substitutes for each other. When serious problems occur in health care there is always a "knee-jerk" response by many to impose a ban and thus provide an immediate and definitive response to the issue. While such responses may be emotionally satisfying they often represent answers which are "smarter than we are" and may end up causing more harm than good. Banned drugs are still available in developing countries like India due to lack of law enforcement and physician awareness. Some of these drugs namely Nimesulide, Rofecoxib, Phenyl propanamine and other Over The Counter (OTC) preparations are banned by the US FDA due to their side effects such as agranulocytosis, kidney and liver failure etc, but are still being marketed in India. The government needs to enforce laws and provide information to physicians and patients regarding these drugs through drug information centers. The pharmacist should hold public information campaigns and educate consumers, and thus play an important role on eliminating the market for banned drugs.

Key words: Banned drugs, regulatory bodies, unapproved drug.

DPT-009

Cosmeceuticals Containing Herbal Actives

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Cosmeceuticals are formulated using cosmetics and pharmaceuticals having medicinal benefits which affect the biological functioning of skin depending upon types of functional ingredients they contain. They are used to improve the health, beauty of the skin and are used for different skin ailments. The need for the cosmeceuticals have shown a tremendous growth in recent years because products work at cellular levels and treat imperfections. They avoid harsh chemicals associated with cosmetic product .The future trends of cosmeceuticals are concerned with Artificial Intelligence of ingredients discovery and Microbiomics for cosmetics.The current review highlights the market growth of cosmeceutticals in recent years.

DPT-010

Molecular Hybridization: An approach to Design Novel Molecule of Therapeutic Importance

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Molecular hybridization (MH) is an approach of rational design of such ligands or prototypes based on the recognition of pharmacophoric sub-units in the molecular structure of two or more known bioactive derivatives which, through the adequate fusion of these sub-units, lead to the design of new hybrid architectures that maintain pre-selected characteristics of the original templates. Molecular hybridization is a new concept in drug design and development which involves the combination of pharmacophoric moieties of different bioactive substances to produce a new hybrid compound with improved affinity and efficacy, when compared to the parent drugs. Additionally, this strategy can result in compounds presenting modified selectivity profile, different and/or dual modes of action and reduced undesired side effects. The advantage of using molecular hybridization is to activate different targets by a single molecule, thereby increasing therapeutic efficacy as well as to improve the bioavailability profile. Molecular hybridization play an important role in improving the activity of antibacterial, anticancer, Anti inflammatory, Antifungal, Anti HIV, Anti allergic. The development in molecular hybrids of heterocyclic compounds which include benzimidazole, indole, quinoline, pyridine and other compounds are the important class of therapeutically useful antimicrobial drugs.

DPT-011

Nanosponges: A promising nanocarrier systems for drug delivery

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Nanoengineered drug delivery system are generally used to solubilize the hydrophobic drugs, they also carry the drug to the target site and release the drug according to need of the patient and disease condition. These are very effective drug carriers which minimize and resolve the problems of drug toxicity and poor bioavailability as they can load both hydrophilic and hydrophobic drugs. Nanosponges are tiny in size with three dimensional networks. These are highly porous in nature and entrap active moieties and provide an advantage of programmable release. These are prepared by cross linking using many type of cyclodextrin with carbonyl and dicarboxylate compound like cross linker. Nanosponges technology is used for many applications like enhancing the bioavailability of drug and delivery of drug via oral, topical and parenteral routes. These are also used as a carrier for release of enzyme, protein, vaccines and antibiotics.

Key words: Nanocarrier, nanosponges, targeted drug delivery

DPT-012

Pharmacovigilance Programme of India

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Pharmacovigilance is a crucial part of drug development process which helps in assessing any drug's adverse event profile. Years after the start of WHO's International Drug Monitoring Programme, Government of India launched the Pharmacovigilance Programme of India (PvPI) in 2010. The main function of PvPI is monitoring the Adverse Drug Reactions (ADR) efficiently by setting up various Adverse Drug Reaction Monitoring Centres (AMC) across India and training personnel who can perform this function. PvPI has played an important role in generating awareness amongst healthcare professionals (HCPs) about the importance and the process of reporting ADRs which has led to a multifold increase in ADR reporting.

DPT-013

THE DEADLY NIPAH VIRUS

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Objective:- The aim was designed to prepare a review on the Nipah virus.

Review:- Nipah virus (NIV) is a paramyxovirus whose reservoir host is fruit bats of the genus Pteropus. The first outbreak of NIV was recognised in Malaysia , but 8 outbreaks have been reported from Bangladesh since 2001.

Conclusion:- The emergence of nipah virus possess a threat to public and animal health, as well as to commerce and trade. The serious zoonotic nature of niv makes the development of and adherence to safe working practices a prerequisite to any investigation and research.

DPT-014

THE NANO EMULSION

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Nano emulsion are sub micron size emulsion which acts as drug carrier for improving the delivery of therapeutic agents. Nanoemulsion thermodynamically and kinetically stable therefore flocculation, aggregation, creaming and coalescence don not occurs. Nano emulsions are non toxic and non irritant. it provide taste masking. It is important for human resources. **Conclusion:** Nano Emulsion formulation offer several advantages for the delivery of drug,biological or diagnostic agents. Traditionally, Nano emulsion have been used in clinics for more than decades as total parenteral nutritional fluids. Recently, several research papers have been published for the improvement of drug delivery.

DPT-015

CHICKENGUNYA VIRUS

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Chikungunya is an infection caused by the chikungunya virus (CHIKV).The disease was first identified in 1952 in Tanzania. Symptoms include fever and joint pain. These typically occur two to twelve days after exposure. Other symptoms may include headache, muscle pain, joint swelling, and a rash. Most people are better within a week; however, occasionally the joint pain may last for months. The risk of death is around 1 in 1,000. The very young, old, and those with other health problems are at risk of more severe disease. The virus is spread between people by two types of mosquitos: Aedes albopictus and Aedes aegypti. They mainly bite during the day. The virus may circulate within a number of animals including birds and rodents.Diagnosis is by either testing the blood for the virus's RNA or antibodies to the virus.The symptoms can be mistaken for those of dengue fever and Zika fever. After a single infection it is believed most people become immune.

DPT-016

IDENTIFICATION OF RAW MATERIAL BY NIR

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Near infrared (NIR) spectroscopy is an analytical tool that is still not fully integrated into the pharmaceutical industrial environment. However, its advantages are potentially of considerable benefit for the quality control of Raw material (i.e. active and excipients.) Methods were developed to demonstrate the ability of NIR spectroscopy as a quality control method in the different steps of the manufacturing process of Raw material. NIR methods showed several clear benefits, such as speed, low analysis costs and environmental friendliness compared to traditional analytical tools. The information obtained from NIR analysis is, however, different to that provided by separative methods such as high, performance liquid chromatography (HPLC). Qualitative NIR techniques can only confirm whether the sample is of required quality or not, and for quantitative measurements NIR intensities have to be calibrated for the samples properties and do not give any information about any other property. The most labor-intensive part of the NIR analysis is method development. The results of NIR analysis are obtained in less than one minute for a single sample. In contrast, HPLC analysis is time-consuming but very specific, and provides detailed results about the presence or concentration of identity markers. The use of chemometric tools and the study of factors affecting the spectra during feasibility studies are highly informative. They were used to optimize the calibration set, the regression model and the sample presentation mode, and were found to be critical steps in the development of specific and robust NIR models. Pharmaceutical guidelines that are currently in force or in preparation were used and compared for the validation of the NIR methods studied. The validation results proved that the NIR methods were as reliable as the reference analysis methods. NIR spectroscopy is therefore a very suitable analytical tool for the quality control of raw material.

DPT-017

Meditation and alternative medicine: A possible breakthrough for stress, anxiety, panic attacks and insomnia.

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Meditation and alternative medicine go hand in hand, and meditation can be seen as complimentary to natural therapies or as an alternative option all together. Studies have shown that meditation lowers blood pressure and increases learning capabilities. Both meditation and alternative medicine can be seen as viable options to rushing off for a pharmaceutical medication that is likely to have side / adverse effects. A perfect example for contemplation is of people who suffer from insomnia and anxiety. One will be amazed at the power of the mind to turn the situation around, and it saves one from tampering with brain chemicals and having to withdraw from anti-depressants. In addition to supporting general health and vitality there are a number of ways in which herbs can support your meditation. They can interact with your brain via your olfactory system as incense or essential oils, applied topically as herbal oils, or be taken internally as teas or powders. Modulating stress response as adaptogens such as Ashwagandha, Schisandra, Ginseng , Releasing Muscular and Mental/Emotional Tension and Anxiety – Skullcap, Passionflower, Chamomile. Shifting States of Consciousness such as: Holy Basil, lavender , L-Theanine. Deepening and improving breathing teas of Mint or Thyme, Lobelia or green tea. Improving concentration, Mate, or Calamus may enhance meditative focus and alertness. Optimizing cognitive capacity and memory – Herbs such as Bacopa, Gotu Kola and Gingko. A perfect healthy state encapsulates physical, behavioral, emotional, mental and spiritual patterns. Imbalance in our lifestyle and diet can result in symptoms of varying subtlety from an overt pathology to a maladaptive behavioral or emotional pattern. Herbal and lifestyle practice (meditation) can return the individual to a healthy balance thereby creating an optimal state for healthy lifestyle.

DPT-018

Neuroprotective effect of a bliss molecule released during meditation

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Meditation is a practice where an individual uses a technique, such as focusing their mind on a particular object, thought or activity, to achieve a mentally clear and emotionally calm state. The practice of meditation is of prehistoric origin, and is found throughout history, especially in religious contexts. It has been reported that the deep state of rest produced by meditation triggers the brain to release various neurotransmitters, which are linked to different aspects of happiness. One of these neurotransmitters, which are profoundly released in a deep state of meditation, is reported to be a bliss molecule i.e., anandamide. It has been called the "natural euphoriant." It is a lipid mediator that acts as an endogenous ligand of cannabinoid CB1 receptors. These receptors are also the primary molecular target responsible for the pharmacological effects of Δ9-tetrahydrocannabinol. And it has been hypothesized that stimulation of CB1 receptor protects ischemic neurons via inhibiting the opening of mitochondrial permeability transition pore (MPTP) and induces neuroprotection. Therefore, accumulating evidences indicate the neuroprotective effect of this bliss molecule (anandamide) released in deep state of meditation.

DPT-019

ZIKA VIRUS: A challenge and an opportunity

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Today the world has suffered to the Zika virus (ZIKV); it is a flavivirous related to yellow fever, dengue, West Nile and Japanese encephalis virus. Zika virus causes acute, serious illness which is often fatal if it is not treated. Its name comes from the Zika forest of Uganda. Zika is a mosquito born disease. The disease may be spread from mother to child in the womb and cause microcephaly Diagnostic test for ZIKAV infection include PCR tests on acute phase serum samples. There is currently no approved medication/ vaccine for ZIKV, though several vaccines are in development. This opens up the gate for new avenues in the field of pharmacy for intriguing novel molecules from chemical and natural origin to combat ZIKV; so it is a challenge and an opportunity.

DPT-020

EBOLA VIRUS – A FATAL THREAT

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Ebola virus disease formally known as Ebola Haemorrhagic fever is a disease caused by the ebola virus in severe fatality rate , 90% affected humans and non human primates. Ebola HF sympotoms include a sudden onset of fever , intenese weakness , headache , muscle pain and soar throat. This is followed by vomitting , diarrhoea , rash , impaired kidney and liver function and in some cases both internal and external bleeding.The virus is transmtted to people from wild animals and spread in human population through human to human transmission. Healthcare workers have also been frequently injected in medical facilities. No specific treatment is yet available for Ebola HF but new promising drug therapies have been evaluated. Early supportive care with rehydration symptomatic treatment improves survival. There is yet no licensed treatment proven to neutralise the virus but a range of blood immunological and drug therapies are under development. Community engagement is key to succesful controlling outbreaks . Good outbreak control relies on applying a package of of interventios namely case management , infection prevention and control practices , surviliance and contract tracing , a good laboratory service , safe burials and social mobilization.

DPT-021

THE NUTRACEUTICALS

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Nutraceutical is non-toxic food component that is scientifically proven health benefits, including diseases, treatment or prevention. Many nutraceuticals like glucasamine, melatonin, DHA, caretonoids, lotein, lycopene are used in diseases like joint health, cardio vascular health, eye health, cancer prevention respectively. Nutraceuticals available in market by the brand name like – Betatene, Xangold, Generol, Premium probiotics, Soylife, Fenulife, etc. Which shows functions like – immune function, eye health, potent anti-oxidant, bone health. Research over the past several decades have primarily focussed on different nutraceuticals. Nutraceuticals have proven health benefits and their consumption will keep disease at bay and allow humans to maintain an overall good health.

DPT-022

NOVEL DRUG DELIVERY SYSTEM IN HERBAL FORMULATION FOR CANCER TREATMENT

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Plants have been used since time immemorial for treatment of diseases.The use of 'herbs' in the treatment of various diseases with fewer side effects has significantly increased. Herbal drugs are difficult to process, identify, extract and deliver, thus needs modification to overcome these problems. Now a days plants are being used as natural remedies for the treatment of various health concerns like allergies, wounds, burns, gastrointestinal disorders and even for cancer. Novel Drug Delivery System is also beneficial for cancer treatment. It has modified the herbal drugs to increase their therapeutic value, reduce toxicity, achieve sustained and controlled release, improve solubility, bioavailability and increase patient compliance. Novel Drug Delivery System includes various novel carriers like LIPOSOMES, PHYTOSOMES, MICROSPHERES, MICROEMULSIONS, TRANSFEROSOMES, ETHOSOMES, and SOLID-LIPID NANO PARTICLES.

DPT-023

Herbal Drugs and It's Current Scenario

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Human beings have been using herbal medicines for thousands of years. The advantages of this type of therapeutics include good availability, individual preferences, the increasing demand for natural and organic products. The scientific studies of these drugs are established to confirm the therapeutic effects. With the study of these drugs we can discuss the possible advantages of herbal medicines instead of the truth and myths of these drugs may lead to better and promising relation between the modern medicines and traditional medicines.

DPT-024

HERBAL PHARMACOVIGILANCE

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Any substance that is capable of producing a therapeutic effect can also produce unwanted or adverse effect. It is important to understand basic concept related to adverse drug reaction (ADRs): epidemiology, classification, predisposing factors, evaluation parameters, and surveillance methods. Pharmacovigilance is defined as the science and activities relating to the detection, evaluation, understanding and prevention of (ADRs) or any other drug related problem. It involve patience medical professionals, the pharmaceuticals industries, drug regulatory agencies, and academic scientists. The functioning of international regulatory agencies and drug safety department of pharmaceutical industries has been greatly influenced by pharmacoinformatics. Pharmacoinformatics has changed in which healthcare practiced. It will play a major role in the future development and practice of pharmacovigilance.

DPT-025

HERBAL DRUGS FOR DIABETES MELLITUS: A REVIEW

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Diabetes mellitus (DM) is a metabolic disorder of the endocrine system characterized by hyperglycemia, hyperlipedemia, hyperaminoacidemia, and hypoinsulinaemia. Type 2 Diabetes Mellitus is the most common form of diabetes mellitus and accounts for about 95% of all diabetes cases. In India, indigenous remedies have been used in the treatment of diabetes mellitus since the time of Charaka and Sushruta. Medicinal plants as a traditional medicine is being used by about 60% of the world's population and India is major contributor to produced herbal drugs. Herbal drugs becomes advantageous over allopathic drugs due to their safety, low cost, complete accessibility with enhance tolerance. A number of herbal plants have been evaluated for their potential to treat different types of diabetes. Many of herbal plants and formulations founded effective in treatment of DM. This review is mainly focused on herbal plants as antidiabetics in various traditional medicines and explores the herbal plant, isolated active principle and formulation with antidiabetic activity.

Keywords: Diabetes Mellitus, Herbal drugs, traditional medicine.

DPT-026

Fabrication and Optimization of Asymmetric Membrane Capsules of Lycopene for Improved and Controlled Release

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The aim of the present investigation was to develop and optimize the osmotically controlled asymmetric membrane capsules (AMCs) of lycopene with improved and controlled release. Solid dispersions of lycopene with -cyclodextrin in different ratios were prepared using solvent evaporation method. Solubility studies showed that the solid dispersion with 1:5 (lycopene: -cyclodextrin) exhibited optimum solubility for osmotic controlled delivery. Asymmetric membrane capsules (AMCs) were prepared on glass mold pins via dip coating method.Membrane characterization by scanning electron microscopy showed inner porous region and outer dense region. Central composite design response surface methodology was applied for the optimization of AMCs. The independent variables were ethyl cellulose (1), glycerol (2), and NaCl (3) which were varied at different levels to analyze the effect on dependent variables (percentage of cumulative drug release (1) and correlation coefficient of drug release (2)). The effect of independent variables on the response was significantly influential. The F18 was selected as optimized formulation based on percentage of CDR (cumulative drug release) of 85.63% and correlation coefficient of 0.9994. The optimized formulation was subjected to analyze the effect of osmotic pressure and agitational intensity on percentage ofCDR.Thedrug release was independent of agitational intensity but was dependent on osmotic pressure of dissolution medium.

Keywords: Asymmetric Membrane Capsules, -cyclodextrin, CDR, Osmotic Pressure

DPT-027

Formulation and Characterization of Microsponges of Curcumin for Colon Specific Delivery

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Microsponges have the ability to retain on the surface of colon for prolonged period of time. Curcumin has been used extensively in ayurvedic medicine for centuries, as it is nontoxic and has a variety of therapeutic properties including anti-oxidant, analgesic, anti-inflammatory and antiseptic activity. So the aim of work was to develop the microsponges of curcumin for inflammatory bowel disease. The present study was aimed to formulate the microsponges of curcumin for colon specific drug delivery in a view to bypass the upper GIT for enhanced therapeutic effect. Quassi emulsion solvent diffusion method was used to formulate microsponges, based on 3^2 full factorial design. The effects of independent variables like volume of ethanol and Eudragit L100 content were determined on the particle size, encapsulation efficiency, percentage yield and drug loading of 9 formulations F1-F9. The optimized formulated was further subjected to *in-vivo* study using acetic acid induced colitis in rats. The F4 was considered as optimized formulation based on the particle size of 41.638µm, %EE of 70% and %CDR= 73% and was selected for *in-vivo* study. The optimized colon-targeted microsponge formulation shielded curcumin in gastrointestinal region and selectively delivered the drug to colon. The pharmacodynamics study revealed that curcumin loaded microsponges showed significant decrease in edema, necrosis, and hemorrhage as compared to free curcumin. The results suggested that curcumin loaded microsponges can be used as a promising treatment for ulcerative colitis.

Keywords: Curcumin, Eudragit, Factorial Design, Microsponges

DPT-028

3D Printing of Pharmaceutical Drug Delivery Systems: Emerging Trend in Pharmaceuticals Manufacturing

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Three dimensional printing (3DP) technology is a novel technique for rapid prototyping, which constructs solid objects by deposition of several layers in sequence. The three-dimensional (3D) printing technology has endless potential in the fabrication of patient-specific drug delivery devices (DDD) and dosage forms. 3DP can fabricate solid dosage forms with variable densities and diffusivities, complex internal geometries, multiple drugs and excipients. Although 3DP can address the problems related to delivery of poorly water-soluble drugs, peptides, potent drugs and the release of multi-drugs, etc, but problems like availability of suitable binders, excipients and the pharmaco-technical properties of final products restrict the applications of 3DP in commercially. Further advancement in process performance is required to overcome these issues where 3DP technology can be successfully combined with novel drug delivery system (NDDS). The present article highlights some advantages, limitations, challenges and perspectives in concerning to3DP of pharmaceutical grade formulations and polymers used for drug delivery systems.

DPT-029

A Review on : Drug discovery and Drug development

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The development of a drug from an initial idea to its entry into the market is a very complex process which can take around 5-10 years and cost $1.7 billion.Drug discovery is the process through which potential new therapeutic entities are identified,using a combination of computational,experimental, translational, and clinical model.The process of drug discovery involves the identification of candidates, synthesis, characterization, screening & assays for therapeutic efficacy.The advent of molecular biology, along with numerous developments in the screening and synthetic chemistry technologies, has allowed learning both, the knowledge about the receptor and random screening to be used for drug discovery.Today, more or less all pharmaceutical industries follow common techniques for discovering drugs. Currently, all existing therapies together hit only about 400 different drug targets. It is estimated that there are at least 10 times as many potential drug targets that could be exploited for future drug therapy. Drug invention programs result in the synthesis of compounds that are tested in assays and animal models.Challenges for the future are to give its traditional medicine a strong scientific base and develop research and clinical capability to consistently produce new drugs based on advances in modern biological sciences.

Keyword: Drug discovery, Drug development, Clinical trial

DPT-030

Review on Therapeutic Drug Monitoring

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Therapeutic drug monitoring (TDM) is the clinical practice of measuring specific drugs at designated intervals to maintain a constant concentration in a patient's bloodstream, thereby optimizing individual dosage regimens. TDM involves measuring drug concentrations in various biological fluids and interpreting these concentrations in terms of relevant clinical parameters. Clinical pharmacists and pharmacologists use pharmacokinetic principles to assess these interpretations. The science of TDM introduced a new aspect of clinical practice in the 1960s with the publication of initial pharmacokinetic studies linking mathematical theories to patient outcomes .Therapeutic drug measuring is only one part of TDM that provides expert clinical interpretation of drug concentration as well as evaluation based on pharmacokinetic principles.It is vital to obtain the blood sample for measuring the drug concentration at the correct time after dosing. Errors in the timing of sampling are likely responsible for the greatest number of errors in interpreting the results. For most drugs, the blood sample can be drawn into a heparinized tube or allowed to clot, and there are no important restrictions on storage before measurement.Clinicians routinely monitor drug pharmacodynamics by directly measuring the physiological indices of therapeutic responses, such as lipid concentrations, blood glucose, blood pressure, and clotting.Digoxin increases the strength and efficiency of heart contractions, and is useful in the treatment of heart failure and control the rate and rhythm of the heart. It is extracted from the leaves of a plant called digitalis lanata. Digoxin increases the force of contraction of the muscle of the heart by inhibiting the activity of an enzyme (ATPase) that controls movement of calcium, sodium, and potassium into heart muscle.

DPT-031

SUSTAINDED RELEASED DRUG DELIVERY SYSTEM

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Pharmaceutical invention and research are increasingly focusing on delivery system which enhance desirable therapeutic objectives while minimising side effects. Oral drug delivery system represents one of the frontier areas of controlled drug delivery system. Such a dosage forms having a major advantage of patient compliance. Sustained release dosage forms are designed to release a drug at a predetermined rate in order to maintain a constant drug concentration for a specific period of time with minimum side effects. Now a days as a very few drugs are coming out of research and development and already existing drugs are suffering the problem of resistance due to their irrational use specially in case of drug like antibiotics. Hence, change in the operation is a suitable and optimized way to make the some drug more effective by slight alteration in the drug delivery. Sustained release is also providing promising way to decrease the side effect of drug by preventing the fluctuation in the therapeutic concentration of the drug in the body.

DPT-032

Nanoparticulate Drug Delivery System As a Tool For Drug Targeting

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Nanoparticulate have been used as a physical approach to alter and improve the pharmacokinetic and pharmacodynamic properties of various types of drug molecules. They have been used in vivo to protect the drug entity in the systemic circulation, and to deliver the drug at a controlled and sustained rate to the site of action. Nanotechnology is therefore emerging as a field in medicine that is expected to elicit significant therapeutic benefits. The nanodelivery systems mainly include nanoemulsions, lipid or polymeric Nanoparticles and liposomes. Nanoparticulate have been improving the therapeutic effect of drugs and minimize the side effects. Basically, Nanoparticulate have been prepared by using various techniques as such dispersion of preformed polymers, polymerization of monomers and salting out ,solvent evaporation or co-acervation of hydrophilic polymer.

DPT-033

PROCESS OF QUALITY CONTROL ON TABLET

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A Tablet must fulfill certain parameter for a quality drug like disintegration test (disintegrate with in prescribed time), dissolution test (determine similarity with the dissolution requirement for solid, semisolid, and suspension dosage form), uniformity of weight of single dose preparation (weight of API), uniformity of content of single dose preparation (based on assay of individual API), friability (physical strength of tablet). Aim of the study was to provide quality of drug according to indian pharmacopoeia.

DPT-034

ADVANCED MEDICINAL AND SYNTHETIC ASPECT OF PYRROLES: AN OVERVIEW

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Pyrrole is a privileged scaffold with assorted nature of biological activities. Many active compounds have been developed by amalgamation of different pharmacophores in a pyrrole ring system. Pyrroles are an active component of complex macrocycles, including the porphyrins of heme, chlorins, bacteriochlorins, chlorophyll, porphyrinogens. Pyrrole and its derivatives are widely used as intermediates in synthesis of pharmaceuticals, agrochemicals, dyes, photographic chemicals, perfumes and other organic compounds. The pyrrole skeleton is an imperative structural framework found in extensive range of biologically active natural products and pharmaceutically active molecules. They are an element of polymers, indigoid dyes and large aromatic rings. Pyrroles are utilized as a catalyst for polymerization process, corrosion inhibitor, preservative, solvent for resins and terpenes. It is functional in various metallurgical process, luminescence chemistry, spectrochemical analysis and transition metal complex catalyst for uniform polymerization. Furthermore, some of the compounds are useful intermediates in the synthesis of biologically important naturally occurring alkaloids and synthetic heterocyclic derivatives. In this review, attempts are made to disclose various tactical approaches to synthesize pyrrole and its derivatives. The structure activity relationship studies have been discussed along with their pharmacological applications.

Keywords: Spectrochemical, Pyrrole, Pharmacophores.

DPT-035

Study of Wound Healing Effects of Phototherapy

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In an attempt to discover effective treatments, Photo-biostimulation or Phototherapy has emerged as a promising field of research. Laser phototherapy is a highly effective therapeutic strategy for tissue repair and pain relief. Despite the advocacy of this treatment, there has been a reluctance to accept it due to a lack of understanding of the underling mechanism of action. Phototherapy has been shown to increase the speed and quality of tissue repair by decrease of inflammatory cells, increase in fibroblast proliferation, stimulation of angiogenesis and collagen synthesis, and granulation tissue formation. Study indicated that phototherapy resulted in pronounced stimulation of healing in burn wounds by significant wound area concentration and enhanced collagen accumulation, cellular proliferation and re-epithelialization in comparison to control burn wounds.

DPT-036

The Yellow Card Scheme: Reporting Medicine Side Effects

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It has been estimated that 6.5% of hospital admissions are related to adverse drug reactions (ADRs) and that at least 60% of ADRs are preventable. The Yellow Card Scheme acts as an early warning system for identifying previously unrecognized adverse reactions and has proved to be successful in the early detection of several important safety issues with medicines. The Yellow Card Scheme is the UK system for collecting information on suspected adverse drug reactions(ADRs) to medicines. The scheme allows the safety of the medicines and vaccines that are on the market to be monitored. The Yellow Card Scheme is the **UK system** for collecting information on suspected adverse drug reactions (ADRs) to medicines. Yellow Cards should be submitted directly to the MHRA (Medicines and Health Care Products Regulatory Agency). The resulting data are used to detect 'signals' of emerging drug safety problems. The Yellow Card Scheme is vital in helping the MHRA monitor the safety of all health care products in the UK to ensure they are acceptably safe for patients and those that use them. Side effects reported on Yellow Card are evaluated, together with additional sources of information such as clinical trial data, medical literature to identify previously unknown safety issues. These reports are assessed by a team of medicine safety experts made up of doctors, pharmacists who study the benefits and risks of medicines. Yellow card schemes (YCS) were applied to spontaneous reporting systems. The YCS is run jointly by the Medicines Control Agency (MCA) which is the regulatory agency and the Committee on Safety of Medicines (CSM) which is the experts committee. Since 1991, the YCS has been enhanced by a new computer system, the ADROIT (Adverse Drug Reaction Online Information Tracking) system. ADROIT is different from other databases. Not only does it store the details of the report, but also the image of the yellow card in the optical system. Multiple users can view any yellow card on screen at the same time. The reports are prioritized so that serious adverse drug reactions receive early attention.

Key Words: Adverse drug reactions, Yellow Card, safety, MHRA.

DPT-037

OBESITY PLAY A FAVOURABLE ROLE IN THE SPREADING OF INFLUENZA A VIRUS

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It was found that obesity may increase the spreading of influenza transportation and it may be considered in medication and prevention policies. According to the research obese persons have the greater chance of carrying influenza A virus almost more than 50% in comparison to non obese patient. Research was done for 10 to 13 days and was minutely observed and recorded for the three consecutive seasons where approximately 1800 individuals and 320 families were examined. The researchers found that the individuals who were obese get the influenza A virus about 48 to 52% longer period of time than the non-obese adults at an average 5.23 days versus 3.68 days. It was also found that there was no connection between obesity and spreading of influenza B virus. In the increased rate of carrying of influenza A virus increases both the duration as well as the quantity of viral existence. It also increases the severity of influenza virus infection. Thus it helps in the transportation of influenza A virus in the obese adults with more effectively in the rise of obesity.

Keywords: Obesity, Influenza A virus, Transportation.

DPT-038

OBSTRUCTIVE SLEEP APNEA

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Obstructive sleep apnea (**OSA**) is the most common type of sleep apnea and is caused by complete or partial obstructions of the upper airway. It is characterized by repetitive episodes of shallow or paused breathing during sleep, despite the effort to breathe, and is usually associated with a reduction in blood oxygen saturation. These episodes of decreased breathing, called "apneas" (literally, "without breath"), typically last 20 to 40 seconds. For milder cases of obstructive sleep apnea, your doctor may recommend lifestyle changes. Millions of people all over the world suffer with Sleep Apnea. This condition causes major issues not only with a person's health, but also with their daily lives and the lives of those around them. Most sufferers resort to using a CPAP machine while they sleep. Although CPAP can help the condition, it can be very cumbersome and awkward to use. Without CPAP offers tips and techniques to naturally help relieve the symptoms caused by Sleep Apnea, with no drugs whatsoever. The exercises contained in this review can dramatically improve the lives of those suffering from Sleep Apnea.

DPT-039

Design, Synthesis and Biological Evaluation of Some Novel Antiubulin Agents

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In recent decade, 4-Aminoquinazoline derivatives have gained pronounced importance due to their wide spectrum of biological activities including anticancer activity. In that view, we aimed to find new 4-Aminoquinazoline derivatives having potential anticancer activity. We designed some novel 4-Aminoquinazoline derivatives by using molecular modeling study, and synthesized them by using suitable synthetic methodologies. Synthesized compounds were characterized by spectral methods. Synthesized compounds were subjected to tubulin polymerization essay to find their antitubulin activity. Most active compound of the series showed robust inhibition of tubulin polymerization. Compounds, showing potential antitubulin activity, are planned to be screened for *in vitro* and *in vivo* anticancer activity.

Key words: 4-Aminoquinazoline derivatives, antitubulin, anticancer, spectral methods.

DPT-040

Nose to Brain Targeting by using Nanoparticulated *in situ* Nasal Gel

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Many drugs are difficult to reach the central nervous system (CNS) from the systemic blood circulation because the blood-brain barrier (BBB) and the blood- cerebrospinal fluid barrier (BCSFB) form a very effective barrier which prevents most molecules from passing through. Amongst the various approaches to overcome this problem, delivery of drug through a novel route like intranasal is one of the best approaches. Due to the anatomy and physiology of the nasal passage such as large surface area for absorption, highly vascularized sub epithelial layer, drugs entry to brain and low proteolytic activity, nasal administration has gained importance. The drug delivery system through nasal mucosa is a popular novel drug delivery method because mucous membranes of nasal cavity are relatively highly permeable, allowing for the rapid uptake of a drug into the localized and systemic circulation and to avoid the first pass metabolism. Drug loaded nanoparticles was prepared by using modified nanoprecipitation technique. Different polymers like ethyl cellulose, Eudragit S100 and Eudragit L100 were used in different ratio. The prepared nanoparticles were then subjected to several evaluation parameters like measurement of particles size, zeta potential, surface morphology, surface entrapment and drug content etc. Drug loaded nanoparticles were suspended in prepared in situ nasal gel for application into the nasal mucosa. In situ nasal gel was prepared by using Cold technique with different non ionic surfactants. Prepared insitu gel was also subjected to several evaluation parameters like gel forming temperature, gel melting temperature, effect of rpm and temperature on viscosity, spreadibility and pH etc. Finally, in vitro diffusion study of drug loaded nanoparticulated insitu nasal gel was carried out. The current research work is focus to formulate and evaluate a nanoparticulated in situ nasal gel of Escitalopram (modeldrug) so that the BBB get bypassed which results in increased bioavailability reduced dose and increased patient compliance.

DPT-041

Rationale behind Anti-ulcer Therapeutic Potential of Oil Isolated from *Tagetes erecta* L. (Family: Asteraceae) Leaves and Flowers

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The plant *Tagetes erecta* L. locally known as Genda Phool in Hindi is stout branching herb native to Mexico and other warmer parts of America and naturalized elsewhere in the subtropics including India and Bangladesh. *Tagetes erecta* L. is a member of Asteraceae family, containing about 50 species of annual or perennial herbaceous plant. The plant *Tagetes erecta L.* has been shown to contain quercetagetin, a glucoside of quercetagetin, phenolic, syringic acid, methyl-3,5-dihydroxy-4-methoxy benzoate, quercetin, thienyl and ethyl gallate. Lutein is an oxycarotenoid or xanthophyll, it is one of the major constituents and the main pigment of *Tagetes erecta* L. The distillation was conducted in Clevenger apparatus in which boiling, condensing and decantation was done. The essential oil, obtained from the fresh leaves of the plant *Tagetes erecta* L. by Steam distillation method in Clevenger apparatus contains limonene, and terpinolene. The oil composition was analyzed by Gas chromatography–mass spectrometry (GC-MS), analytical method. Beta-sitosterol, daucosterol and gallic acid are also isolated from its leaves and these compounds were reported to possess anti ulcer activity. The hydro-ethanolic extract of the flowers of *Tagetes erecta* L. contains alkaloids, flavonoids, glycosides, carotenoids and triterpenoids. Twenty five compounds were identified in the *Tagetes erecta* L. flower oil the main constituents are linalool (22.5 %), 2-hexyl-l-decanol (18.3 %), piperitone (13.4 %), 4-terpinyl acetate (7.8 %) and caryophyllene (6.6 %). The plant was traditionally reported to possess anti-ulcer activity.

Key Words: *Tagetes erecta*, Clevenger apparatus, beta-sitosterol, daucosterol, gallic acid, anti-ulcer

DPT-042

*Balanites aegyptiaca*a Novel Plant Seeds Activity on Hemorrhoids and Irritable Bowel Syndrome

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Balanites aegyptiaca (Family: Zygophyllaceae) is scientifically proven to have expensive medicinal vales. In the present research work an effort has been taken to explore its seeds kernel for the potential activity against croton oil induced hemorrhoid modal in rat and against irritable bowel syndrome induced by acetic acid in rats**.** The results show that anti-hemorrhoidal and anti-IBS activity of *Balanites aegyptiaca* seed kernel extract at the dose of 100/200 mg/kg body weight was comparable with anti-hemorrhoidal activity of standard drug treatment 20 mg/kg body weight of hydrocortisone. For IBS the intestinal movement of rat ileum given by 10% solution of seed extracts was compared with standard drug 0.01mg/ml atropine solution. The data also supplement for severity score, Recto anal coefficient and histopathological study of ractoanal tissue section of rat. Antihemorrhoidal and anti-IBS activity of seed kernel extract of *Balanites aegyptiaca* showed significant p value of, $P \leq 0.01$ and $P \leq 0.01$.

Keywords: *Balanites aegyptiaca,* Irritable bowel syndrome, Hemorrhoid