PHARMACOLOGICAL EVALUATION OF ANTIDEPRESSANT AND ANTIANXIETY ACTIVITY OF BUPLEURUM FALCATUM IN ANIMAL MODELS

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ABSTRACT

Bupleurum falcatum, belongs to the family Apiaceae. Anxiety and Depression are widespread psychiatric disorders affecting around 5% of the population. Furthermore, it is difficult to predict which patient will respond to any given treatment. In the traditional systems of medicine, many plants have been used to treat anxiety and depression for thousands of years. The present study was designed to evaluate the antianxiety and antidepressant activity of the alcoholic and aqueous extracts of *Bupleurum falcatum* leaves in rodents. Antianxiety activity was tested by exposing rats to unfamiliar aversion in different methods like elevated plus maze model and actophotometer. The results infer that reduced aversion fear elicits antianxiety activity. The antidepressant activity was tested by using forced swim test and tail suspension test. The results infer that reduced immobility time elicits antidepressant activity. It was concluded that alcoholic and aqueous extracts of *Bupleurum falcatum* leaves having antianxiety and antidepressant activity. Alcoholic extract of *Bupleurum falcatum* leaves showing more significant activity over the aqueous extract.

Keywords: *Bupleurum falcatum*, Antianxiety activity, Antidepressant activity, Elevated plus maze, Actophotometer, Despair swim test, Tail Suspension Test.

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Design and Characterization of Selegiline Bio-Nanoparticles as novel drug carriers for Parkinson's therapy

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ABSTRACT: Background: Selegiline is a monoamine oxidase inhibitor used for the treatment of Parkinson's disease. **Aim:** The present study was aimed to formulate Selegiline polymeric nanoparticles by using various polymers, PLGA (poly (lactic-co-glycolic acid) copolymer, TPGS (D-α-tocopherol-polyethylene glycol-1000 succinate) by Solvent dispersion (Nanoprecipitation) method. **Methods:** Absorption maximum of Selegiline was determined and analytical method was developed. The polymeric nanoparticulate formulations were subjected for Particle size, Zeta Potential, Drug Loading and Entrapment Efficiency studies. *In vitro* diffusion studies were conducted and release data was subjected to kinetic analysis. **Results:** The preformulation studies indicated that absorption maximum of Selegiline was corroborated with literature value. Calibration curve showed a high degree of linearity which represents the sensitivity and accuracy of developed analytical methods. The compatibility studies exhibited no interactions indicating drug polymer compatibility. Zeta potential of all polymeric nanoparticles indicates their stability. Formulations exhibited particle size in nano range with good drug entrapment and uniform drug content. Selegiline *In vitro* release studies showed sustained and prolonged release of drug indicates better absorption with patient compliance. Among all F6 formulations, it exhibited maximum drug release and was considered as optimized formulation with respect to its ideal drug entrapment and *in vitro* drug release. Release kinetics analysis of optimized formulation revealed that the F6 formulation followed zero order kinetics of drug release. **Conclusion:** Results obtained from the above studies conclude that Selegiline polymeric nanoparticles could be formulated for targeted drug delivery with better absorption and improved drug action for Parkinson's therapy.

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Keywords: Polymeric nanoparticles, Selegiline, Nanoprecipitation, PLGA, *In vitro* release, Parkinson's therapy.

INTRODUCTION:

Nanotechnology (NT) uses materials that are the devices of nanometric size range (1 to 100 nm) to treat neurodegenerative disorders. Current drug delivery nanosystems have been tailored to deliver drugs and contrast agents to the brain by crossing the blood brain barrier or through sustained local release. Currently, much attention is focused on research aimed at the development of biocompatible nanocarriers for drugs as indicated in Fig 1. Nanoparticles (NPs) are one of the

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THE COMPARATIVE STUDY OF PSYCHOLOGICAL DISTRESS AND QUALITY OF LIFE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE AND IRRITABLE BOWEL SYNDROME

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ABSTRACT

Background: The mental health of a patient is equally important as the physical health in chronic conditions like IBD and IBS because these conditions involve the gut brain bidirectional interaction. The psychological status of the patient with IBD and IBS was correlated with the Patient's Quality of life. **Aim:** To asses and compare the psychological distress and quality of life in patients with inflammatory bowel disease and irritable bowel syndrome. **Objectives:** To determine the severity of the disease, health related quality of life and to compare the relative impact of the disease on HRQOL, psychological profile and perceived burden of stressful life events in two groups of outputs suffering from IBD and IBS. **Methods:** A prospective observational study was conducted in Asian Institute of Gastroenterology hospital, Hyderabad, over a period of 6 months which includes 319 cases. This study was conducted using validated questionnaires to evaluate severity, mental health, quality of life. **Results:** In our study IBD patients were found more anxious and depressed than the IBS patients. The quality of life of 78 IBD patients (29.6%) was found to be poor compared to the IBS patients where only 14 patients (25%) patient were found with poor quality of life. **Conclusion:** In this study 319

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SOLID STATE INVESTIGATION OF NABUMETONE

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ABSTRACT:

The present report was aimed at solid state manipulation of nabumetone. Nabumetone is a nonsteroidal anti inflammatory agent with slightly low risk of GI side effects. Different crystal forms of nabumetone were prepared using solvents of different polarity by four techniques, namely solvent evaporation, heating, quench-cooling and seeding. Microscopy, FTIR, X-ray diffractometry (XRD), and differential scanning calorimetry (DSC), were used to characterize crystalline forms of the nabumetone. Acicular and rod shaped crystals were obtained. Metastable polymorphs of nabumetone were identified on the basis of low melting points, and converted into stable form as indicated by the high melting point over a period of 2 months. The polymorph was identified as Form II was reported by earlier works. Evidence indicated that there are two different crystal habit of nabumetone. Physicochemical properties such as melting point, solubility and dissolution were evaluated. Crystals obtained from isopropyl alcohol, and isobutyl alcohol had nearly two fold higher aqueous solubility. Crystals obtained from ethanol has gradual and increased dissolution rate. These crystals may have still low risk of GI side effects.

Key words: Nabumetone, Glipizide, Solubility, Ethanol, Dissolution, Crystals.

INTRODUCTION

Polymorphism may be defined as the ability of a compound to exhibit different crystalline forms.Polymorphs may exhibit significantly different pharmaceutically relevant properties, and hence characterization of polymorphs is essential steps in the preformulation.[2] The polymorphism of an API determines its packing, thermodynamic, spectroscopic, kinetic surface, and mechanical properties in the solid state. The crystal structure can have a direct effect on the solubility of a solid. As different lattice energies characterize different crystal structures, the solubility of different crystal polymorphs must differ as well [1-3].

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RESEARCH ARTICLE

Iodine -A Versatile reagent for Vinylogous Mannich Reaction for the Synthesis of δ-Amino γ-Butenolides and *Insilico* Evaluation

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ABSTRACT:
A set of δ-amino γ-butenolides (1-5) were synthesised by a novel method using molecular iodine as a catalyst by mannich reaction. The purity and progress of the reaction was assessed by thin layer chromatography and the compounds characterisation was done by IR, proton NMR and mass spectroscopic techniques. Molecular modeling studies for the compounds such as docking was performed for the synthesized butenolides to understand the drug receptor interactions and analyze structural changes when bound to the active site of the receptor. the results showed that the compounds 2 and 3 showed significant interaction with target enzymes.

KEYWORDS: δ-amino γ-butenolides , molecular iodine, molecular modeling, MOL GRO virual docker.

INTRODUCTION:
Bioactive natural products can be considered very promising starting points for the development of new therapeutic agents[1]. The biological importance of unsaturated lactones is well known. In particular, the γ-alkylidene butenolides skeleton is a useful entity that is present in natural product such as fibrolides, dihydroxerulin, and protoanemonin and its derivatives possess antiviral, antibiotic, anticancer activity[2,3].

The direct method for the synthesis of γ-butenolides is the addition of 2-trimethylsiloxyfuran to imines in the presence of Lewis acids such as $BF_3.OEt_2$, TMSOTf, $SnCl_4$, $Bi(OTf)_3$, and $SiCl_4$ under strictly anhydrous and low temperature reaction conditions.[4,5] The presence of even a small amount of water lower the yields of the product probably due to the rapid decomposition or deactivation of the promoters. Therefore, the development of new reagents that are more efficient and provide improved yields and selectivity are well appreciated.[6]

Recently, molecular iodine has received considerable attention as an inexpensive, non-toxic, readily available catalyst for various organic transformations; affording the corresponding products with high selectivity in excellent yields. The mild Lewis acidity associated with iodine enhanced its usage in organic synthesis to perform several organic transformations using stoichiometric levels to catalytic amounts. Owing to advantages associated with this eco-friendly catalyst molecular iodine has been explored as a powerful reagent for various organic transformations.

The unique features of iodine prompted us to explore further applications of iodine as catalyst in various carbon-carbon bond forming reactions. The present work was aimed to develop a novel method for the synthesis of δ-amino γ-butenolides by the condensation of 2-trimethylsiloxyfuran with various imines in presence of iodine under mild conditions and perform insilico evaluation by docking with prostaglandin E synthase1 and phospholipase A2 using Molegro virtual docker.

MATERIALS AND METHODS:
The chemicals used were of synthetic grade purchased from local chemical vendors. Infrared spectra are recorded on Perkin Elmer model 283B and Nicolet 740 FT-IR instruments and values are given in cm^{-1}Proton magnetic resonance spectra are recorded on Varian Gemini 200, Varian unity 300 and Advance-300 MHz

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PACIFIERS: THE DILEMMA BETWEEN TRADITION AND NEW FINDINGS

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ABSTRACT

Pacifiers are devices which babies can suck on to help them calm down and sooth them when they cry, get restless or are struggling to sleep. These are made of a silicon or rubber teat which is attached to a plastic shield, which stops the baby from swallowing or choking on it while being helpful in handling the device. These are generally used to replace the mother's nipple and facilitate and medium for sucking which helps the mother take a break from breastfeeding. When babies suck on a pacifier, toy or thumb, it's called non-nutritive sucking (as it yields no nutrition). Pacifier use during the child's sleep has been associated with the prevention of Sudden Infant Death Syndrome [SIDS] and has been said to help babies learn to control their feelings, relax them, and make them feel secure. Pacifier use has been reported to be associated with a reduced risk of sudden infant death syndrome (SIDS), but most countries around the world, including the United States, have been reluctant to recommend the use of pacifiers because of concerns about possible adverse effects. In this review we shall see the different types of pacifiers, the materials used in their manufacture, the complications arising by their use, and the role they play in preventing Sudden Infant Death Syndrome [SIDS].

Keywords: Pacifiers, non-nutritive sucking, Sudden Infant Death Syndrome.

INTRODUCTION

Types of Pacifiers:

1. Orthodontic pacifiers: The nipples of these are flattened at the bottom and rounded at the top. During sucking these types of pacifiers flatten the baby's mouth which reduces pressure on the developing teeth.
2. Round tip baby pacifiers: These types of pacifiers mimic the shape of an actual nipple, which is why they are often suggested for breastfed babies to prevent nipple confusion.
3. Silicon baby pacifiers: These types are sturdier, easier to clean and more widely available.
4. Latex baby pacifiers: These types tend to be softer and more flexible but the softness of the material also means that there is a potential for tearing with older children with teeth.
5. Multiple-piece baby pacifiers: These are the most common types of pacifiers. These usually consist of a nipple, a guard and a ring which are each manufactured separately before being combined into the traditional pacifier.

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Materials used for the manufacture of pacifiers:

1. Silicon:
   It is a chemical element with the atomic number 14.
   It is a hard, crystalline solid with a slight metallic lustre. Its melting point is 1,414 °C.

These are easier to clean pacifiers which are widely available. They are made up of a single moulded piece of plastic, silicon or latex.

Effects:

Certain children can suffer from latex allergies and this is said to be due to vaccinations especially Hepatitis B vaccinations.

The latex used in this may also lead to health issues. Thought latex provides a smooth and flexible finish to the

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CLINICAL OUTCOMES AND TOLERABILITY OF SACUBITRIL-VALSARTAN COMBINATION IN PATIENTS WITH HEART FAILURE

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ABSTRACT

Background: Heart failure sometimes called as Congestive heart failure, occurs when heart muscles doesn't pump as well as it should. Certain conditions such as narrowed arteries in your heart (Coronary heart disease) o high blood pressure, gradually leave your heart too weak or too stiff to fill and pump efficiently. **Methodology:** A total of 101 patients were considered. Informed consent was obtained from all the subject care takers. Subjects enrolled in the study were admitted in ICU's and OP department. The study appraises the clinical outcomes of sacubitril-valsartan by detecting NYHA and LV Ejection fraction and evaluated the tolerability of the sacubitril-valsartan by detecting adverse effects of the drug. **Results:** Out of 101 patients 74 patients (74.3%) were found to be males and 27 patients (26.7%) were found to be females. Most of the patients were of elderly people. Most of the patients were diagnosed as suffering from CAD. **Conclusion:** Out of 101 patients treated with sacubitril – valsartan combination, most of the patients were tolerable to this drug. The outcomes such as elevated serum creatinine and serum electrolytes were almost normal.

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A case of dapsone hypersensitivity syndrome in an Indian leprosy patient: Retrospective screening reveals the genetic connection with HLA-B*13:01

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Improvement of Solubility and Dissolution Rate of Poorly Water-Soluble Anti-Cholestermic Drug Atorvastatin by Solid Dispersion Technique

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ABSTRACT

Atorvastatin calcium belongs to class II drug, which is characterized by low solubility and high permeability, which makes the drug to have low bioavailability. Enhancement of its solubility makes the drug more bioavailable and has fewer side effects. This was achieved by forming solid dispersion of the drug and formulating the tablets. Atorvastatin was mixed with various proportions of excipients which showed no color change at the end of two months, proving no drug-excipient interaction as confirmed by FTIR studies. The pre-compression blend of atorvastatin solid dispersions which were prepared by solvent evaporation technique were characterized with respect to angle of repose, bulk density, tapped density, Carr's index and Hausner's ratio. The pre-compression blends of all the batches were showed good to fair flowability and compressibility especially with F2 formulation having excellent results. The prepared formulations were evaluated for various quality control parameters. The tablets formulations passed all the tests of post formulation studies such as weight variation, friability, drug content, etc. From the *in vitro* studies, among all the formulations F2 formulation containing drug and mannitol in the ratio of 1:2 showed good dissolution rate of 97.43% in 25 minutes. While the formulations containing PVP k30 and PEG 4000 showed less release. Therefore, F2 formulation was found to be the better formulation as per dissolution profile. By conducting further studies like preclinical and clinical, the formulation can be adopted for manufacturing in bulk.

KEYWORDS: Atorvastatin, solid dispersions, Mannitol, PEG 4000, PVP k30.

Introduction

Hyperlipidemia is a condition with elevated levels of lipids as well as triglycerides in blood plasma, which are produced during biosynthesis pathway of cholesterol (Gupta *et al.,* 2011). This includes lipoproteins such as high, low and very low-density lipoproteins which are abbreviated as HDL, LDL and VLDL respectively as well as triglycerides (TG). High HDL levels in blood indicate lower risk of cardiovascular disease and hence called as good cholesterol whereas LDL, VLDL and TG levels if high are prone to increased risk of atherosclerosis as well as other cardiovascular disorders, and hence called as bad cholesterol (Ross and Harker, 1976). Atorvastatin calcium, an anti-hyperlipidemia agent is used in the treatment of patients with high cholesterol levels (Marchesi et al., 2000; Gomez-Domingues et al., 2006; Karpisek et al., 2007; Van Wissen et al., 2005; Roth., 2002). Atorvastatin competitively inhibits the HMG-CoA reductase enzyme thereby decreasing the hepatic cholesterol levels and also increase the HDL levels reducing the risk of cardiovascular mortality rate agent (Sasaki et al., 2002; Pontrelli et al., 2002; Server et al., 2003). Atorvastatin is known to selectively inhibit HMG-CoA reductase enzyme which is released by the liver and is responsible for the synthesis of mevalonate from HMG-CoA during the cholesterol biosynthesis pathway. This results in decreased hepatic enzyme thereby decreasing the hepatic cholesterol levels). It is primarily used to prevent coronary heart disease (CHD), myocardial infarction and other cardiovascular disorder (Karam et al., 2008; Yang et al., 2008; Tousoulis et al., 2013; Colhoun et al., 2004)

Atorvastatin belongs to class II drugs that are characterized by low solubility and high permeability (Fig. 1). It is freely soluble in methanol whereas it is partially soluble in water and phosphate buffer of pH 7.4 as a result, its bioavailability is minimal (Ahjel and Lupuleasa, 2009). Therefore, to enhance the bioavaila-

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RESEARCH ARTICLE

ATYPICAL PRESENTATION OF METASTATIC EWING'S SARCOMA OF PUBIC BONE-A RARE CASE

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Pelvic Mass, Ewing's Sarcoma(ES), Chemotherapy(CT), Radiation Therapy (RT), Surgery

Abstract

Ewing's sarcoma is a highly malignant bone tumor which usually occurs in children and young adults and is not common in adults older than 30 years. It often arises from diaphysis of long bones. Although it may develop in any bone, the most frequent sites are femur, ilium, tibia, pelvic area, ribs and scapulae. A delay in early symptoms and diagnosis is quite common, particularly of pelvic tumors in which this mass is not palpable until it is quite large. The most important and earliest symptom is pain which may radiate to the limbs and constitutional symptoms (such as malaise and fever). Majority of patients have metastasis involving the lungs and other bones. Ewing's sarcoma involving the pelvis is a great challenge in terms of local control due to the complexity of pelvic anatomy, which increases the difficulty of treating them. We report a rare case report of Ewing's sarcoma of right pubic ramus with metastasis to lungs and spine in a 19 years old male. Further multislice spiral CT pelvis, Magnetic Resonance Imaging (MRI) of dorsal and lumbar spine and nuclear medicine positron emission tomography (PET-CT scan) was done to assess the involvement of soft tissue and proven Ewing's sarcoma. He was treated by a multidisciplinary approach by surgery, chemotherapy (CT) and radiation therapy (RT) for effective response. The prognosis and survival of patients in this location (pelvis) are much less favourable than for patients with tumors of other extremities.

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Introduction:-

Ewing's sarcoma is a primary malignant bone tumor that usually occurs during the first two decades of life. It is the second most common bone tumor of childhood and adolescence. It has been classified within a large group of neoplasms termed "Ewing's Sarcoma Family Of Tumors" (ESFT)[(1)]. Ewing's sarcoma can spread (metastasize) to other parts of the body, such as the lungs, bone marrow, and other soft tissues. When compared with other cancers, malignant bone tumors like Ewing's sarcoma are rare. Of these rare bone tumors, Ewing's sarcoma is the second most common in children and young adults. According to data on children younger than 15 years old, approximately 1.7 children out of a million develop the disease.[(2,3)]

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The Clinical Aspects of Saroglitazar and its Side Effects

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ABSTRACT

The new substance element has been known as novel antidiabetic drug, eg: saroglitazar. saroglitazar is a medication used to treat type-2 diabetes. saroglitazar was known under the exchange name Lipaglyn, created by Zydus cadila. lipaglyn is the first drug approved to treat type-2diabetes mellitus by the drug controller general of India in june 2013. Lipaglyn is demonstrated for the patients experiencing diabetes dyslipidaemia. It is given once daily for treatment. Saroglitazar manages the lipid parameters just as glycemic control. [1]

Keywords: Anti-diabetic, dual PPAR agonist, glitazar, hypertriglyceridemia, insulin sensitizer, Lipaglyn, AE's (adverse effects).

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INTRODUCTION:

Dyslipidaemia is considered as one of the major risk factors for cardiovascular diseases (CVD) accounting for 50% of the myocardial infarction (MI) cases worldwide.[2] A recent epidemiological survey on prevalence of lipid abnormalities of the Indian population

by Indian Council of Medical Research-India Diabetes Study (ICMR-INDIAB), has shown that 79% of Indian subjects greater than 20 years of age have abnormalities in at least one of the lipid parameters.[3]In this survey, the commonly found lipid abnormality was low-high density lipoprotein cholesterol (low HDL-C) in 72% subjects followed by high triglycerides(TG) in 29.5% subjects and then high low-density lipoprotein cholesterol (LDL-C) in 11.8% subjects.[4] Prevalence of dyslipidaemia is high in India, pharmacological intervention strategies are used to prevent and manage cardiovascular risk factor. Statins the first line treatment for dyslipidaemia and decrease LDL-C levels as well as the danger of cardiovascular occasions in patients with or without cardiovascular disease.[5] Intensive statin treatment was compared with moderate-dose statin treatment steadily brings down LDL cholesterol levels and paces of non-lethal cardiovascular events.[6]The extent of CVD chance decrease as an outcome of LDL-C bringing down to the range of 25% and 35%.[3]This measurably important but clinically insufficient control of CVD risk is to a limited extent because of a lipid treatment centre around LDL-C alone with a resultant disregard of other significant parts of lipoprotein metabolism. [7] Statin treatment may not eliminate CVD Risk related with low HDL and high triglycerides. [8,9] This review article centres around raised serum triglycerides (TG) and triglyceride rich lipoproteins as potential components limiting further decrease in CVD events in spite of low on-treatment LDL-C. [10]

NEWER CONCEPT —DUAL PPAR α/γ AGONIST:

Peroxisome proliferator-activated receptors (PPARs) are nuclear lipid-activated interpretation factors that regulates the expression of genes to control the lipid and lipoprotein metabolism, glucose homeostasis and inflammatory process. There are 3 PPARs subtypes which are usually assigned PPAR alpha, PPAR gamma and PPAR ß/d. PPAR α enactment builds high thickness lipoprotein cholesterol synthesis, stimulates "reverse" cholesterol transport and decreases triglycerides. PPAR activation brings about insulin sensitization and antidiabetic activity. Consolidated medicine with PPAR and an agonist may conceivably improve insulin resistance and ease atherogenic

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Open Access Review Article

Therapeutic Considerations for Docetaxel and Paclitaxel in Metastatic Breast Cancer

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ABSTRACT

Breast cancer is the main source of death among women. Currently, 77% of women diagnosed with breast cancer are age 50 and older; however, it is projected that approximately 66% of the new cases diagnosed will occur in women younger than 65. Taxanes are one of the most effective class of drugs among all the chemotherapeutic agents. They are crucial in the adjuvant therapy of lymph node fantastic or high risk/lymph node poor breast cancer. Several clinical trials have assessed the wellbeing and adequacy of taxanes along with their tolerability in patients with metastatic cancer (MBC) The overview of these Paclitaxel and Docetaxel, the mechanism of action, pharmacokinetics and pharmacodynamics, dose and administration, adverse effects, clinical potency, and sufferable profiles combination therapies, the pathological complete response of these taxanes are included. The different novel formulations of taxanes are formulated from nanoparticles, polyglutamate, liposomes to improve the wellbeing and adequacy taxanes to reduce their toxicities. Single-agent research located with docetaxel and paclitaxel in metastatic breast most cancers show clinically huge antitumor motion even in the advanced stage, heavily pretreated, safe, as properly as in refractory diseases. This action is likewise clear with taxane-based combination regimens. Serious hematologic and nonhematologic toxicities are incompatible, with different toxicities noted dependent on the portion and weekly regimen selected. Weekly docetaxel and paclitaxel regimens speak to important helpful treatment options for women suffering from metastatic breast cancer and have entered assessment as a major aspect of adjuvant treatment for this disease Toxicity associated with taxanes chemotherapy are based totally on the dose schedules and weekly regimen selected and the most frequent toxicities related with these marketers include myalgia, peripheral neuropathy, neutropenia, etc Docetaxel retains in tumor cells for longer duration when compared to paclitaxel because of its slow efflux and large amounts of uptake into the cell which explains its more benefits when compared to paclitaxel. Clinical studies conducted so far suggested a more benefit to risk ratio for docetaxel when compared to paclitaxel. This article reviews mainly different actions exhibited by taxanes in the therapy of metastatic breast cancer and others on stages of cancer along with the toxicities associated with these agents.

Keywords: Metastatic breast cancer, Taxanes, Paclitaxel, Docetaxel, Single-agent, Combination regimen.

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INTRODUCTION:

Worldwide, breast cancer is leading cancer in females. Neoadjuvant chemotherapy administered before medical surgery is the possible treatment option for various breast cancer patients [1]. Preoperative chemotherapy diminishes the primary tumor thereby facilitating breast conservation [2, 3].

Preoperative chemotherapy administration on open tumors before the medical procedure likewise gives the chance to quickly measure tumor reaction and identify the patients who responded to the therapy. It also helps in attaining pathological complete response (pCR) which is often described by the destruction of all malignant cells from the breast and also from axillary lymph nodes, which is the primary endpoint for disease-free tolerance after neoadjuvant therapy, particularly in triple-negative breast tumor [4, 5].

Clinical parameters, for example, estrogen receptor-negative status, excessive histological evaluation, and high proliferative fame are associated with excessive affectability to chemotherapy [5, 6]. Of all the new anti-

Review Article

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A Comprehensive Study on Nerivio Migra

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ABSTRACT

Migraine is one among the foremost prevalent and disabling disorders, characterized by recurrent headache attacks with nausea, vomiting, photophobia, and phonophobia. Nerivio Migra may be a breakthrough device for acute treatment of migraines. Attached to the patient's arm (below the shoulder), it's a clinically-tested wearable suited to be worn everywhere and at any time. Non steroidal anti inflammatory drugs (NSAIDs) and triptans, commonly used for acute migraine treatment[3], may be ineffective, poorly tolerated, contraindicated, and if used in excess, may lead to medication overuse headache there is a great unmet need for alternative acute migraine treatments that are both effective and well tolerated. Non-invasive neuromodulation is safe, well tolerated, and may have fewer adverse effects than drugs. Remote electrical neuromodulation (REN) may be a novel acute migraine treatment that stimulates upper arm peripheral nerves to induce conditioned pain modulation (CPM) -an endogenous analgesia mechanism during which conditioning stimulation inhibits pain in remote body regions.

Key words:
Migraine,
Phonophobia, photophobia
Remote electrical neuromodulation.

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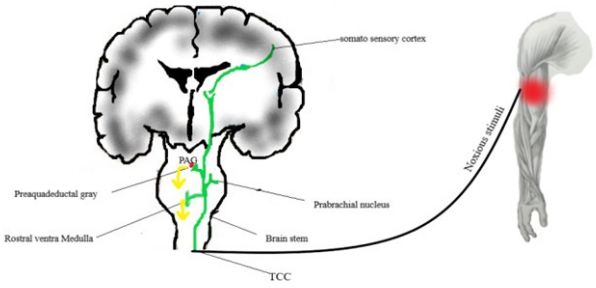
INTRODUCTION

Migraine is one among the foremost prevalent and disabling disorders, characterized by recurrent headache attacks with nausea, vomiting, photophobia, and phonophobia. Nerivio Migra may be a breakthrough device for the acute treatment of migraines. Attached to the patient's arm (below the shoulder), it is a clinically-tested wearable suited to be worn everywhere and at any time. NerivioMigra, also as other sorts of wearable's the corporate is planning, are controlled by intuitive smartphone applications to simply adapt therapy treatments to today's modern lifestyle. Which can be available in limited quantities for late 2019 and early 2020.

DISCUSSION

Migraine is one of the most prevalent and disabling disorders,[1] characterized by recurrent headache attacks with nausea, vomiting, photophobia, and phonophobia[2].Non-steroidal anti-inflammatory drugs (NSAIDs) and triptans, commonly used for acute migraine treatment[3], may be ineffective, poorly tolerated, contraindicated, and if used in excess, may lead to medication overuse headache [4,5] and migraine chronification[6] profound barriers to optimal migraine care[7,8].Only 15.9% of the U.S. population with migraine use triptans, with an extremely high discontinuation prevalence of 55.2-81.5%[9] . Thus, there's an excellent unmet need for alternative acute migraine treatments that are both effective and well tolerated. Non-invasive neuromodulation is safe, well tolerated, and should have fewer adverse effects than drugs[10,11]. Remote electrical neuromodulation (REN) may be a novel acute migraine treatment that stimulates upper arm peripheral nerves to induce conditioned pain modulation (CPM) - an endogenous analgesia mechanism during which conditioning stimulation inhibits pain in remote body regions[12]. The mechanism of REN and its potential use in migraine are described in details during a recent pilot study[13].Presumably, REN activates descending inhibition pathways that originate within the periaqueductal gray (PAG) and within the rostral ventromedial medulla (RVM) which globally inhibit pain by the discharge of serotonin and noradrenalin (Fig. 1). the pilot study demonstrated that early treatment of migraine attacks with REN can significantly reduce headache[13]. During this paper, we report the results of a randomized, double-blind, sham - controlled, multicentre pivotal study designed to guage the efficacy and safety of REN for the acute treatment of migraine.

Figure 1. Migraine Head Ache



OPEN IN FIGURE VIEWER POWERPOINT

Schematic illustration of the principle of operation of REN. The device stimulates C and Aδnoxious sensory fibers of the upper arm above their depolarization thresholds but below the the perceived pain threshold. The noxious information reaches the brainstem through the ascending pain pathway

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Effect of Median Age of Countries Population on the Total Number of Covid-19 Cases and Deaths around the World

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ABSTRACT
COVID-19 (Coronavirus disease) is an infectious disease which is caused by a newly discovered coronavirus. Most of the people infected with the COVID-19 virus will show mild to moderate respiratory illness and recover without the necessity of special treatment. Median age is an important indicator of the population's age distribution. It provides the 'midpoint' age of a population. The aim of this review is to provide the evidence on the role of median age or young population of a particular country with regard to transmission rate of the spread of disease and deaths. The median age of all the affected countries were divided into four class intervals such as (15-25, 26-35, 36-45, and 46-55). The total number of Covid-19 cases and deaths of affected 209 countries/territories as on 13th April, 2020 were summarized according to their median age. Hence from the review, it can be concluded the total number of both cases and deaths are higher in countries with higher median age. From the survey reports of India and South Korea, it is clearly observed that the chances of infections is more in young people and the chances of fatalities are more in older people. Thus, in view of the data it can be said that the younger population is getting affected more, and hence perhaps with less number of deaths. That indicates that younger adults without realizing may be spreading COVID-19. Thus, the best approach for controlling the spread of COVID-19 seems to isolate older people and those with underlying medical conditions from the younger people.

Key-words: *COVID-19; Median age; Cases; Deaths.*

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I. INTRODUCTION

Several pneumonia cases of unknown etiology have been reported on 8th December, 2019, in Wuhan, Hubei province, China.[1-3] Most of the patients were found to live or work at around the local Huanan wholesale seafood market, where live animals were sold. On 7th January, 2020 the Chinese Center for Disease Control and Prevention (CDC) has identified a novel coronavirus from the sample of throat swab of a patient. The novel coronavirus was subsequently named as 2019-nCoV by World Health Organization (WHO).[4]

The official name of the 2019 novel coronavirus was then announced by WHO as coronavirus disease (COVID-19).[5] Within a month, this coronavirus quickly spread throughout China during the Chinese New Year, a time when there is a high level of mobility among Chinese people.[6]

COVID-19 (Coronavirus disease) is an infectious disease which is caused by a newly discovered coronavirus.[7] Most of the people infected with the COVID-19 virus will show mild to moderate respiratory illness and recover without the necessity of special treatment.[7] Elderly people, and those with underlying medical problems like diabetes, cardiovascular disease, cancer and chronic respiratory disease are more susceptible to develop serious illness.[7] The COVID-19 virus primarily spreads through saliva droplets or nasal

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EVALUATION OF ANTIDIABETIC ACTIVITY OF *SWERTIA CHIRAYITA* AND *PANAX GINSENG*

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ABSTRACT

Diabetes mellitus, one of the most common endocrine disorders has caused significant morbidity and mortality due to macro vascular and micro vascular complications. Currently available therapies for diabetes include insulin and various oral anti diabetic drugs have number of serious adverse effect; therefore the search for more effective and safer hypoglycemic agents is one of the important areas of investigation. Some medicinal plants have been reported to be useful in diabetes worldwide. The herbs like *swertia chirayata* shown to protect the liver. It contains xanthones which is reputedly effective against Malaria, Tuberculosis. It also cures constipation and used for treating dyspepsia with all other properties the *swertia chirayita* shows good anti diabetic activity. The other herb which was used to carry out the experiment *panax ginseng* is well effective in case of anti-sterility in men, it prevents cancer and fight chemical dependency (anti proliferative). The study was conducted to examine the possible antidiabetic activity of *swertia chirayata and panax ginseng* leaf extraction on male wistar rats. Gold thio glucose method was used to induce diabetes in rats. Initially blood glucose levels were increased abruptly after induction. After giving the oral administration of ethanolic extract of *swertia chirayat* (100mg/ Kg, 200mg/kg) and *panax gingseng* (250mg/kg, 100mg/kg). Finding of this research showed that ethanolic extract of a plant *swertia* possess phytochemicals like steroids, alkaloids, tannins, flavonoids and *panax ginseng* possess alkaloids, carbohydrates, flavonoids and tannins significant ($P < 0.05$) anti diabetic activity. The results were compared with standard drug metformin (400mg/kg).

KEYWORDS: *Swertia chirayita*, *panax ginseng*, Antidiabetics.

INTRODUCTION

DIABETES MELLITUS

Diabetes mellitus is a chronic metabolic disorder characterized by high blood glucose concentration (hyperglycemia) caused by insulin deficiency often combined with insulin resistance (Rang and Dale, 2008). Diabetes mellitus refers to the group of diseases that leads to high blood glucose level due to defect in either insulin secretion or insulin action in the body (Rother, 2007).

Hyperglycemia occurs because of uncontrolled hepatic glucose output and reduced uptake of glucose by skeletal muscle with reduced glycogen synthesis. When the renal threshold for glucose reabsorption is exceeded, glucose spills over into the urine (glycosuria) and causes an osmotic diuresis (polyuria), which in turn results in dehydration, thirst and increased drinking of water (polydipsia).

The characteristic symptoms of diabetes mellitus are polyuria, polydipsia, polyphagia (increased hunger), blurred vision, these symptoms may be absent if the blood sugar is only mildly elevated.

IMPORTANT TYPES OF DIABETES MELLITUS

A. TYPE I DIABETES MELLITUS

Type I diabetes mellitus is characterized by loss of the insulin producing beta cells of the islets of Langerhans in the pancreas leading to insulin deficiency. Type I diabetes can be further classified as immune mediated or idiopathic. Type I diabetes is majorly of the immune mediated variety, where beta cell loss is a T-cell mediated auto immune attack (Rother, 2007). Type I diabetes is also called as juvenile diabetes (childhood) or insulin dependent diabetes mellitus (IDDM).

There is no preventive measure that can be taken against this type I diabetes. Diet and exercise cannot reverse or prevent type I diabetes. Sensitivity and responsiveness to insulin are usually normal especially in early stages.

B. TYPE II DIABETES MELLITUS

Type II diabetes mellitus is characterized differently and it is due to insulin resistance or reduced insulin sensitivity and it may be absolutely due to reduced insulin secretion in some of the cases. Insulin receptor sensitivity decreases on insulin receptors.