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List of National/International papers published-Academic year 2019-2020

S NO	Title of Paper	Name of Author	Department of Teacher	Name of Journal	Year of Publication	ISSN /ISBN number
1.	The Endocannabinoid Singnaling Pathway Emerging Targeting Pharmacotherapy, Earmarking Mitigation Of Destructive Events In Rheumatoid Arthritis	T. Venkatachalam	Pharmaceutical chemistry	Life Science	2019-2020	0024-3205
2.	Pleotropic Effects Of Polyphenols In Cardiovascular System	T. Venkatachalam	Pharmaceutical chemistry	Biomedicine & Pharmacotherapy	2019-2020	0753-3322
3.	Evaluation Of Anti-Inflammatory And Anti-Diabetic Activities Of Actinodaphne Madras Patana Bedd Leaves	T. Venkatachalam	Pharmaceutical chemistry	Research Journal Of Pharmacy And Technology	2019-2020	0974-360X
4.	Potency Of Unripe And Ripe Express Extracts Of Long Pepper(Capsium Frutisences Bar Baccatum) Aganist Some Common Pathogens	T. Venkatachalam	Pharmaceutical chemistry	International Journal Of Pharmaceuti cal And Phytochemi cal Research	2019-2020	2250-1029,249-6080



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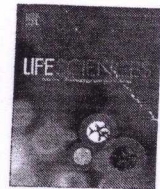
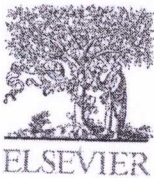
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Review article

The endocannabinoid signaling pathway as an emerging target in pharmacotherapy, earmarking mitigation of destructive events in rheumatoid arthritis

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ABSTRACT

Rheumatoid arthritis is an inflammatory autoimmune disease, characterized by synovial proliferation, destruction to articular cartilage and severe pain. The cannabinoids obtained from *Cannabis sativa* exhibited their actions via cannabinoid-1 and -2 receptors, which also provides a platform for endocannabinoids to act. The endocannabinoid system comprises endocannabinoid molecules involved in signaling processes, along with G-protein coupled receptors and enzymes associated with ligand biosynthesis, activation and degradation. The action of endocannabinoid system in immune system regulation, via primary CB2 activation, followed by inhibition of production of pro-inflammatory cytokines, auto-antibodies and MMPs, FLSs proliferation and T-cell mediated immune response, are elaborated as potential therapeutic regimes in rheumatoid arthritis. The involvement of endocannabinoid system in immune cells like, B cells, T cells and macrophages, as well as regulatory actions on sensory nociceptors to ameliorate pain is significantly highlighted in the review, elaborating the actions of endocannabinoid signaling in mitigating the disease events. The review also focuses on enhancement of endocannabinoid tone, either by inhibiting the degradation enzymes, like FAAH, MAGL, COX, CYP450, LOX, etc. or by retarding cellular uptake processes. Moreover, the review portrays the optimizing role of endocannabinoid system, in abbreviating the symptoms and complications of rheumatoid arthritis in patients and mitigating inflammation, pain and immune mediated effects significantly.

1. Introduction

Rheumatoid arthritis (RA) is a severe autoimmune disorder with a heterogeneous etiology, prevalent in 0.5–1% of the global population [1]. In countries like, USA and Europe, about 1% of the total population suffers from the disease [2]. The prevalence of this disease varies across the globe, with Nigeria with 0.1% prevalence rate (one of the lowest) to Pima and Chippewa with 5% prevalence rate (among the highest) [3]. Women and cigarette smokers are the most susceptible towards rheumatoid arthritis. Moreover, age is an important factor on which occurrence of this disorder depends. Rheumatoid arthritis is characterized by inflamed articular cartilage, gradual disability of the joints, and significant damage to the synovial joint and membrane [4]. However, rheumatoid arthritis, presently is associated with a diverse profile of

disorders like CV diseases, cancer risks, osteoporosis and psychological discrepancies [5]. The disease tends to disturb the quality of life and exhibits more likeliness to affect women more than men [6]. Therefore, the treatment portfolio of RA has always been a necessary paradigm. The immune system signaling molecules, mainly pro-inflammatory cytokines are involved in the progression of rheumatoid arthritis, like TNF and IL-6 [7]. RA therapies have not been introduced recently but in the 1990s bDMARDs were introduced targeting on specific agendas of RA pathophysiology achieving retardation in disease occurrence and clinical therapeutic goals [8]. TNF targeting biologic drugs, mainly etanercept, infliximumab, adalimumab, and certolizumab have been found to enhance improvement in patients and achieve 'treat to target' strategy in most of the patients [9]. However, about 30–40% of patients targeting TNF failed to achieve the desired clinical outcome or sustain

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Review

Pleiotropic Effects of Polyphenols in Cardiovascular System

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 Arun Kumar^a, Rajwinder Kaur^a, Thangaval Venkatachalam^e, Delia Mirela Tit^b,
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ABSTRACT

Numerous epidemiological and clinical studies demonstrate the beneficial effects of naturally occurring, polyphenol supplementations, on cardiovascular system. The present review emphasizes on the risk factors associated with cardiovascular disorders (involving heart and blood vessels), and overview of preclinical and clinical trials on polyphenols for the treatment of cardiovascular diseases. The review collaborates PUBMED, Google Scholar and Research gate databases, which were explored using keywords and their combinations such as polyphenols, cardiovascular disease, flavonoids, atherosclerosis, cardiovascular risk factors and several others, to create an eclectic manuscript. The potency and efficacy of these polyphenols are mainly depending upon the amount of consumption and bioavailability. Recent data showed that polyphenols also exert beneficial actions on vascular system by blocking platelet aggregation and oxidation of low-density lipoprotein (LDL), ameliorating endothelial dysfunction, reducing blood pressure, improving antioxidant defenses and alleviating inflammatory responses. Several studies evidently support the cardioprotective actions mediated by polyphenols, however, some studies or long-term follow-up of human studies, did not demonstrate decisive outcomes because of variations in dose regimen and lack of appropriate controls. Therefore, more data is required to explore the therapeutic benefits of bioactive compounds as a preventive therapy for CVDs.

1. Introduction

Cardiovascular diseases (CVDs) or Heart diseases are prominent reasons of mortality across the globe. The World Health Organization (WHO) reports have depicted the annual deaths of about 17.9 million people, primarily due to CVDs including cerebrovascular and coronary heart disease (CHD). CVDs comprise of a numerous disorders related to

the heart and blood vessels, for example: peripheral arterial disease, stroke, atherosclerosis, hypertension, CHD, cerebrovascular disease and rheumatic cardiac disease. Among aforementioned CVDs, CHD is the major ground of the fatality, followed by stroke, which is the second prime cause of death [1]. The mortality rate associated with the progression of most of these diseases can be suppressed by mitigation of various risk parameters including, hypertension, obesity, tobacco and

Abbreviations: ACE, Angiotensin-converting enzyme; AGES, Advanced Glycation End Products; AHA, American Heart Association; APO, Apolipoprotein; BMI, Body Mass Index; BP, Blood Pressure; CHD, Coronary Heart Disease; cIMT, Carotid Artery Intima-media Thickness; CRP, C-reactive protein; CVDs, Cardiovascular Diseases; DM, Diabetes Mellitus; eNOS, Endothelial Nitric Oxide Synthase; FMD, Flow Mediated Dilatation; GLP-1, Glucagon Like Peptide-1; HDL-C, High Density Lipoprotein Cholesterol; LDL, Low Density Lipoproteins Cholesterol; IL, Interleukin; MDA, Malondialdehyde; MI, Myocardial Infraction; NT-proBNP, n-terminal Prohormone of Brain Natriuretic Peptide; oxLDL, Oxidized LDL; PWV, Pulse Wave Velocity; TC, Total Cholesterol; TG, Triglycerides; TNF, Tumor Necrosis Factor; TNF RI, Tumor Necrosis Factor Receptor I; TNF RII, Tumor Necrosis Factor Receptor II; VCAM-1, Vascular cell adhesion molecule-1; VLDL, Very Low Density Lipoproteins; WHO, World Health Organization.

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RESEARCH ARTICLE

**Evaluation of Anti-inflammatory and Anti-diabetic activities of
Actinodaphne madraspatana bedd leaves**

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ABSTRACT:

The present study was carried out to find out the *in-vivo* anti-inflammatory and anti-diabetic activities of ethanol extract (200 and 400mg/kg) of leaves of *Actinodaphne madraspatana* (*A. madraspatana*) on Swiss Albino rats. The anti-inflammatory activity was investigated in carrageenan induced rat paw edema model which was compared with standard drug indomethacin at a dose level of 10mg/kg and the parameter measured being the paw volume by mercury displacements at 0, 15, 30, 60, and 120 minutes. The edema was induced in rats by administration of 1 % w/v solution of carrageenan in normal saline solution (1%w/v). The anti-diabetic activity was investigated in streptozotocin induced diabetic rat, which was compared with standard drug glibenclamide at a dose level of 4 mg/kg and the parameter measured being the blood glucose level on 0, 7, 14, 21 days. Diabetes was induced in rats by administration of streptozotocin (60mg/kg) in ice cold citrate buffer (pH 4.3). Results of pharmacological activities revealed that the ethanol extract of the plant leaves showed the significant ($p < 0.001$) anti-inflammatory and anti-diabetic activities in a dose of 200mg/kg and 400 mg/kg body weight. The ethanol extract of leaves of *A. madraspatana* possess the anti-inflammatory and anti-diabetic activities.

KEYWORDS: *A. madraspatana* Leaves, Acute toxicity study, Ethanol extract, *In-vivo* pharmacological activities.

INTRODUCTION:

The use of medicinal plants and traditional medicines in developing countries as therapeutic agents for the maintenance of good health is well known in the literature. Medicinal plants containing various phytoconstituents are used to treat animal and human diseases and are considered as a rich resource of pharmacologically active ingredients which can be used in the development and synthesis of new drugs¹.

Medicinal plants play a critical role in the development of human cultures and moreover, medicinal plants, considered as a source of nutrition, and are rich in fiber and antioxidants. Antioxidants compound possesses anti-atherosclerotic, anti-inflammatory, anti-bacterial, anti-viral, anti-carcinogenic, and anti-tumour activities to greater or lesser extent². Medicinal plants have a promising future because there are about one million of plants around the world and most of their biological activities have not investigated yet and their biological activities could be decisive in the treatment of present or future studies³.

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Potency of Unripe and Ripe Express Extracts of Long Pepper (*Capsicum frutescens* var. *baccatum*) Against Some Common Pathogens

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ABSTRACT

Purpose: This study assessed the comparative activity of express extracts of *Capsicum frutescens* var. *baccatum* against some bacterial pathogens such as *Escherichia coli*, *Staphylococcus aureus*, *Bacillus subtilis* and *Pseudomonas aeruginosa*. **Materials and Methods:** The ripe and unripe *Capsicum frutescens* var. *baccatum* was obtained from a smallholder farmer in Ndemili, Delta State, Nigeria. The peppers were macerated using pestle and mortar and the extract was obtained through filter-pressing using a double muslin cloth. The extracts were tested for sensitivity using agar well diffusion techniques. **Results:** The various zone of inhibition for *Escherichia coli*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Bacillus subtilis* and *Pseudomonas aeruginosa* were 11.11, 13.00, 12.67, and 10.00 mm, respectively for unripe express extract and 10.33, 11.33, 12.00, and 9.67 mm, respectively for ripe express extracts. In comparison, the unripe pepper had a higher zone of inhibition compared to the ripe extract, though not significantly different at $p > 0.05$ for each of the isolates. **Conclusion:** The inhibition by the unripe and ripe express extracts of *Capsicum frutescens* var. *baccatum* is an indication that they are potential broad-spectrum antibiotics.

Key Words: Antibacterial, *Capsicum frutescens*, Express extracts, Medicinal Plants, Zone of inhibition

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INTRODUCTION

Pepper is used as spice and medicine in several parts of the world. Peppers are used as spices to enhance desired aroma, color and flavor. Pepper belongs to the genus *Capsicum* and family Solanaceae. It has several nutritional characteristics including Vitamins A, C, and Carotene (which enhance proper growth and functioning of some essential organs in humans), minerals (which aid

the body to withstand stress, cold and stimulate mucous that protects intestinal lining from an ulcer). The pepper also contains some important essential trace metals such as iron, manganese, lead, cobalt, chromium, zinc and copper. These trace metals play an essential role in metabolic and physiological functions in the body at a certain concentration [1-8].

The sharp taste of *Capsicum* peppers is due to the mixture of seven related alkaloids of which capsaicin is the most

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In-vitro Inhibitory Effects of Polyphenolic Extract of *Ichnocarpus Frutescens* on Carbohydrate Digestive Enzymes

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Abstract Background: *Ichnocarpus frutescens* has been used as Ayurvedic herbal medicine by Gond tribes in India to treat several diseases such as diabetes mellitus and Jaundice. The growing incidence of diabetes mellitus and its complications have headed to the search of novel therapeutic approaches engrossed on preventing postprandial hyperglycemia. The practice of carbohydrate breakdown enzyme inhibitors from plant resources might be a potential approach to prevent glucose absorption with the least adverse effects. Aims: The objective of the present investigation was to provide in-vitro evidence for the potential inhibitory activity of polyphenolic extract (PPE) of *Ichnocarpus frutescens* on α -amylase and α -glucosidase enzymes. Methods: the in the vitro inhibitory effect of polyphenolic extract (PPE) of *Ichnocarpus frutescens* focused on the evaluation of pancreatic α - amylase inhibition, rat serum α - amylase inhibition and rat intestinal α -glucosidase inhibition of polyphenolic extract (PPE) of *Ichnocarpus frutescens* by *in vitro*. The different concentrations of polyphenolic extract were subjected to α -amylase and α -glucosidase inhibitory assay and the percentage of α - amylase and α - glucosidase inhibitory activity and IC₅₀ values were calculated. Results: Polyphenolic extract shows appreciable pancreatic α -amylase inhibitory activity *in vitro*. The extract also showed an appreciable α -glucosidase inhibitory effect in a concentration-dependent manner with a moderate α -amylase inhibitory activity. The *in vitro* examination of the inhibitory effect of PPE on maltase and sucrase activities revealed that PPE inhibited rat small intestine disaccharidase (α -glucosidase) activity. Conclusion: Taken together, these results suggest that inhibitory effect of PPE on α - amylase and α - glucosidase activities may delay

carbohydrate digestion and absorption with subsequent lowering of blood glucose level leading to prevention of postprandial hyperglycemia in diabetes and its complication.

Keywords *Ichnocarpus Frutescens* Extract, Carbohydrate Metabolism, α -amylase, α -glucosidase, Diabetes Mellitus, Postprandial Hyperglycemia

1. Introduction

Hyperglycemia is a condition characterized by an abnormal excess of sugar in the blood. Chronic postprandial hyperglycemia is widely recognized as one of the earliest disease biomarkers in the prediction of subsequent microvascular and macrovascular complications that can progress to full symptomatic Type2 diabetes mellitus [1-2]. The frequency of diabetes in the population worldwide is high and still increasing. In the process of this metabolic disorder, concentrations of blood glucose and serum insulin differ from normal concentration, especially after food intake. While the majority of available synthetic antidiabetic drugs target the dual metabolic effects that characterize type II diabetes, impaired insulin secretion, insulin resistance, some of these drugs can have negative side effects at high doses [3-4]. An effective way to control these carbohydrate dependent diseases would be to limit the intestinal carbohydrate digestion.

Starch and sucrose account for 80 % to 90 % of our daily intake of carbohydrates. Small intestinal α -glucosidase



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To evaluate the impact of patient education on self-reported adherence, and management behavior of children with asthma

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Keywords:

Asthma,
Adherence,
Management Behavior,
Patient Education

ABSTRACT

The failure to stick to a recommended remedial program for the treatment of an incessant illness might be mindful to some extent for proceeding with the infection movement. Adherence the key territories of enthusiasm for Asthma. The focal point of examination were to recognize issues detailed by families to influence their Adherence to asthma care. To evaluate the effect of patient education to Self-reported Adherence, Management, and Barriers. Children introducing during an intense assault of asthma were enrolled in this investigation. The restorative record of the experience were preoccupied and contrasted and data that were acquired at first visit and after 3 months. There are 986 youngsters 4 to 15 years old living in city evaluation tracts in the examination. The parental report of drugs endorsed, and the data on the disconnected report concurred 95.15% of the ideal opportunity β -Agonists, 86.24% are steroids, and 7.71% are cromolyn. Meds were overlooked a portion of time by 45.2% of the kids, and 52.8% attempted to escape to taking medication. Arrangements of follow-up consideration were kept by 69% of those given an arrangement, by an expected 60.0% of the individuals who were advised explicitly to require an arrangement. Just a single third of guardians report that they had the option to fend off the youngster from realized asthma triggers about constantly. After the subsequent, the huge changes are seen. Adherence to asthma-the executives program includes various territories: prescription, arrangement keeping, avoidance, and applying a crisis strategy. A barrier to Adherence may exist in one or every one of the four of these areas, prompting ineffectual control of asthma. The patient education improving the patient-doctor organization and furthermore improve Adherence.



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INTRODUCTION

Asthma horribleness and mortality have expanded among kids who live inside a city environment. (Evans *et al.*, 1987) The particular reason this circumstance is obscure. To all the more likely comprehend and address this issue, The assignments of this exertion were two-fold: 1) figure out what variables were related with asthma dismalness in kids, and 2) build up an intercession address these variables. Non-Adherence to an endorsed remedial program were one of the indicated variables adding to asthma horribleness and mortality in all popula-



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TO ANALYSE THE RISK FACTOR AND DRUG UTILIZATION
REVIEW OF PEPTIC ULCER DISEASE IN A TERTIARY CARE
HOSPITAL

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ABSTRACT

Peptic ulcer disease is defined as disruption of the mucosal integrity of the stomach or duodenum thereby resulting in a defect or excavation occurring locally due to the presence of an active inflammation.^[1] About 10% of people develops a peptic ulcer at some point in their life.^[3] A prospective observational study was conducted among both inpatients and outpatients (both male and female) in general medicine and gastroenterology of a Tertiary Care Hospital, Erode. A total number of 110 patients were enrolled in the study. Informed consent forms were taken from every patient after the procedure is being explained. The study aims to identify risk factors for PUD and estimate their relative impact on ulcer incidence in patients and to evaluate the drug utilization pattern of anti peptic drugs. From the study it may be concluded that the mostly prescribed anti-peptic ulcer agent in our hospital is Pantoprazole (54.61%) and Food habits (47.44%) are the main risk factor in peptic ulcer disease.

KEYWORDS: Peptic ulcer disease, Risk factor, Drug Utilisation Evaluation, Anti peptic ulcer drugs.

Original Article

PRESCRIPTION ANALYSIS, DRUG INTERACTION CHECKING AND IMPACT OF PATIENT COUNSELING BY A CLINICAL PHARMACIST IN TYPE II DIABETES MELLITUS PATIENTS IN A TERTIARY CARE HOSPITAL-A PROSPECTIVE STUDY

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ABSTRACT

Objective: To evaluate the clinical pharmacist role in the prescription analysis, drug interaction and the impact of patient counseling in type 2 diabetes mellitus patients.

Methods: A prospective study was conducted in 203 type II Diabetes Mellitus patients for a period of 6 mo in the Diabetology department. Prescriptions were analyzed and self-care assessment for good health practices were collected using a questionnaire and the adherence scores were calculated. Patient counseling was provided to the patient and a follow up was done using the same self care assessment questionnaire.

Results: Out of 203 patients, 86 multiple therapy, 68 dual therapy and 49 monotherapy were observed. Glimepiride+Metformin (54), a combination of short acting and intermediate-acting insulin (41) was the most commonly prescribed drugs. Out of 1102 drugs, 488 were anti diabetic drugs, 35 were antibiotics, 579 were other drug classes prescribed. The drug interactions were reported. The adherence score shows a highly significant impact after counseling.

Conclusion: The results of the current study helps to understand the changes in prescription pattern, drug interactions and the impact of patient counseling by a clinical pharmacist.

Keywords: Diabetes Mellitus, Prescription analysis, Drug Interaction, Patient counseling

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INTRODUCTION

Diabetes mellitus (DM) is a chronic metabolic disorder characterized by the presence of hyperglycemia accompanied by impairment in the metabolism of carbohydrates, lipids, and proteins. DM can vary greatly, but always include defects in either secretion of insulin or response or both at some point in the course of the disease [1]. The prevalence of diabetes mellitus (DM) has risen dramatically in adults worldwide from 6.6% in 2010 and estimated to be 7.8% by 2030, with India contributing to the major part Diabetes mellitus, the chronic disease requires comprehensive management including pharmacological and non-pharmacological measures for achieving optimal glycemic control and better therapeutic outcomes to enhance the quality of life [2].

Patient's poor knowledge on the disease and its management and medication non-adherence lead to inadequate management of diabetes. Patient education is the most effective way to improvise patient responsibility towards disease management and minimize diabetes complications and improve the outcomes. This corroborates the importance of awareness among diabetics in DM management. Studies have confirmed about the positive influence of pharmacist mediated education on knowledge, attitude, and practices about disease and therapy, which has shown a positive impact on health-related quality of life [3].

Medication adherence is defined as the extent to which a patient's medication-taking behaviour coincides with the intention of the health advice he or she has been given. It is the most important factor that determines therapeutic outcomes, especially in patients suffering from a chronic illness like diabetes mellitus. The pharmacist can contribute and play a major role in the assessment of patients understanding about the illness and the therapy and communicate the benefits of treatment and assess the patient's readiness for the care plan and discuss any barriers to adherence that patients may have [3].

However, the effectiveness of the treatment for diabetes relies upon the degree of medication adherence towards the endorsed

treatment. As per the World Health Organization (WHO), guideline adherence is up to, which degree an individual behaviour; following a diet, receiving medication, and executing lifestyle changes corresponds with recommendations from the health care provider. Non-adherence to medication is most basic among patients with diabetes. Inadequate adherence compromises safety and prompts ineffective treatment, which ascends in mortality and morbidity rate. Medication adherence is essential for successful treatment in patients with DM results in a better outcome, for example, hemoglobin A1C values reduce the risk of hospitalization and mortality as well as the health care costs will be diminished.

The prescription analysis and the patient counseling by a clinical pharmacist will provide valuable information regarding the prescription trends and provides the physician about the drug therapy, which helps to improve the quality of care and decreases the healthcare costs. The objective of the study is to evaluate the clinical pharmacist role in the prescription analysis, drug interaction and the impact of patient counseling in type 2 diabetes mellitus patients.

MATERIALS AND METHODS

Study design and ethical considerations

This was a prospective study conducted in the outpatient department of a tertiary care hospital after obtaining the approval of the institutional ethics committee (REF NO: EC/PHARM D/2019-03).

• **Study site**

The study was conducted in the Endocrinology and Diabetology Department.

• **Study population**

203 patients with type 2 Diabetes Mellitus who receive Diabetic medication on regular basis in addition to patient counseling. Based on Raosoft sample size calculator and previously conducted studies.



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Incidence and Impact of Various Complications on Pregnancy Related Anxiety in Women Attending an Obstetrics Clinic in a Tertiary Care Hospital

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ABSTRACT

Background: Pregnancy itself is associated with a slight percentage of risk. The presence of any complication can worsen it. **Objectives:** The study aimed to check the incidence and impact of various complications on pregnancy-related anxiety. **Methods:** This was a prospective observational study. All pregnant women irrespective of gestational weeks were included in the study. The anxiety levels of all pregnant women were checked using PRAQ-R2. A total of 212 women enrolled for the study but 12 women backed off due to incomplete data and finally 200 pregnant women attending an OBG clinic in a Tertiary care hospital were included in the study. The anxiety level scores of both pregnant women without any complication and those with complication was studied and compared. Correlation and significance were checked statistically. **Results:** The incidence of complications in pregnancy was 46%. The most common complication seen among the study population was thyroid problem. Pregnant women having some kind of complications showed a slightly higher score of anxiety when compared to women who didn't have any complications. Pregnant women with a wheezing problem, thyroid problem and PIH showed moderate levels of anxiety while pregnant women with other complications showed mild anxiety level. Pregnant women having twins showed a moderate level of anxiety. **Conclusion:** Age and parity of pregnancy had a significant effect on anxiety which was also proved statistically. Pregnant women having complications have slightly more levels of anxiety when compared to pregnant women who didn't have any complications along with present pregnancy.

Key words: Pregnancy, Complications in pregnancy, Pregnancy-related anxiety, PRAQ-R2.

INTRODUCTION

Pregnancy is the most beautiful moment which comes along every woman's life. The woman gets prepared both physically and mentally to bring forth a new life to this world. Due to its dynamic nature, each stage of pregnancy is unique. Pregnancy itself is associated with a slight percentage of risk. The presence of any complication can worsen it. Some complications may affect the health of the women, the baby or both.¹ Certain diseases or conditions the mother had before she became pregnant can also lead to a complication during pregnancy and some complications occur during delivery.²

The most common complications of pregnancy are pregnancy-induced hypertension, gestational diabetes

mellitus (GDM), low amniotic fluid (Oligohydramnios), preeclampsia, placenta previa, hyperemesis, iron deficiency anemia, Rh-negative disease, urinary tract infection (UTI) and other mental health conditions along with pregnancy.

Pregnancy is one of the most important events in women's' life. Being pleasant on one side, pregnancy is also one of the most stressful events in the life of a woman and a psychologist describes pregnancy as an emotional crisis.³ If this crisis is not properly managed and controlled, it will turn into a prolonged crisis and will leave countless undesirable consequences on the mother and her baby.⁴ Feeling of anxiety during pregnancy is relatively common with about 10 – 15% experience some type of anxiety during the various phases of pregnancy.⁵

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Research article

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Formulation and evaluation of fast dissolving oral film of mefenamic acid

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ABSTRACT

The present study was aimed to formulate and evaluate fast dissolving oral films (FDOF) of Mefenamic acid used in the management of Rheumatoid arthritis and Dysmenorrhea. Fast dissolving oral films are meant to be dissolved in saliva and remain in oral cavity until swallowed. The fast dissolving films were prepared by solvent casting method by using HPMC as film forming polymer, due to their hydrophilic nature and palatable taste. The films were characterized by UV, FT-IR Studies. The plasticizer concentration is used for to improve good mechanical properties of the films. All the film formulations (F1-F6) were evaluated for their weight variations, thickness, surface pH, folding endurance, tensile strength, percentage elongation, *in-vitro* disintegration, drug content and *in-vitro* drug release studies. The drug excipients interactions were investigated by FT-IR, results show that there is no interaction drug and excipients. The optimized formulation F3 also showed satisfactory surface pH, drug content (99.35%), effective *in vitro* drug release (99.8% in 12 min), disintegration time of 12 seconds and satisfactory stability.

Keywords: FDOF, Mefenamic acid, HPMC, Solvent casting method.

INTRODUCTION

Oral route drug administration is considered to be effective and acceptable form due to its better therapeutic efficacy and good patient compliance. The pharmaceutical dosage forms of pills, capsules, granules, powders and liquids. Generally, a pill is designed for swallowing intact or chewing to deliver a specific dose of medication to patients. The pills, which include tablets and capsules, are able to maintain their shapes under moderate pressure. However some patients are particularly pediatric and geriatric patients have difficult in

swallowing or chewing solid dosage forms. Many pediatric and geriatric patients are unwilling to take these solid preparations due to fear of throat choking.

Later includes solutions/ suspension or emulsions offering more advantages over monolithic solid dosage forms. However they also possess certain disadvantages such as finding non toxic excipients and need preservatives, which might cause adverse effects in children, microbiological stability, and also shows problems with the taste masking and dose accuracy. To

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Assess the impact of post traumatic stress disorder in road traffic accident survivors in Erode district, Tamil nadu

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ABSTRACT

The colossal information of the role of Post Traumatic Stress Disorder (PTSD) in various traumatic events in different parts of the globe is widely observed. But in the map of India, there is a huge lack of research on occurrence of PTSD after any of the traumatic events faced by the people in their lifetime. India being a country where road traffic accidents are one of the leading causes of threat to the public, apart from causing physical injuries, the impact of this psychiatric morbidity could be high as reported in other studies worldwide. The Tamilnadu Erode district road traffic accident (RTA) survivors were evaluated at multi-site tertiary care hospital of their socio-demographic and psychological variables using self-prepared questionnaire and IES-R scale respectively. This prospective observational study was conducted in 86 patients for a period of six months. The analyses revealed that 23.3% of the study population experienced post traumatic stress disorder and 5.8% were at higher risk to develop PTSD. The socio-demographic variables such as Age, Educational status, Earning status and severity of injury was positively associated with PTSD. These findings provide preliminary evidence to clinically consider the role of post traumatic stress disorder among RTA survivors. The role of a pharmacist in identifying the hidden scar of our contemporary society is thus anecessity.

Key Words: Post traumatic stress disorder (PTSD), Road traffic accident (RTA), Psychological symptoms, Trauma, India

INTRODUCTION

Road traffic accidents (RTA) are major global public health problem, as it is one of the leading causes of death worldwide. Motor vehicle accident is a recognized cause of trauma which results in severe morbidity and mortality. According to the WHO (2015) report worldwide, deaths from road traffic accidents account for around 25% of all deaths of injury and the number of people killed in road traffic crashes each year is estimated to be unacceptably high at 1.25 million, while the number of people injured could be as high as 50 million. [1] Of all the systems that people have to deal with on a daily basis, road transport is the most complex and dangerous. About 96% of road traffic accidents happen in low-income and middle-income countries, where India accounts for nearly 10% of the world's RTA. In India, the total number of road accidents accounts to about 5 lakh which increased by 14.2% over the years 2005 to 2015 and 4.1% increase by the year 2016. As estimated, Uttar Pradesh followed by Taminadu is the states with maximum number of road crash injuries with a percentage share of 12.8%

and 11.4%. [2] For each road traffic accidents, there are dozens of survivors who are left with short-term or permanent disabilities, that may result in continuing restrictions on their physical functioning, psychosocial consequence or a reduced quality of life and hospitalization. As physical well-being is an important resource to emotional well-being, when individuals suffer sudden losses in physical health, they become distressed and this distress often takes the form of Post Traumatic Stress Disorder (PTSD). Post traumatic stress disorder is an anxiety disorder that can occur following the experience or witnessing of a traumatic event. [3] A traumatic event is a life threatening event such as natural disaster, road traffic accidents, military combat, terrorist incident, physical or sexual assault in adult or childhood and is characterized by avoidant behavior, intrusive memories of trauma and heightened arousal. According to the DSM-V criteria for identifying PTSD, the duration of symptoms must persist for more than one month and should cause clinically significant distress or impairment in



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Review article

Medical research

A review on novel Corona virus

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ABSTRACT

Coronavirus are comes under a broad family of virus that can cause respiratory illnesses such as the common cold, according to the Centers for Disease Control and Prevention (CDC). They are usual in many different species of animals, including camels and bats. Unusually, these corona viruses can evolve and infect humans and then spread between humans. Recent examples of this include SARS-CoV and MERS-CoV. 2019 Novel Corona virus (2019-nCoV) is a virus identified as the cause of an outbreak of respiratory illness first detected in Wuhan, China. This virus causes respiratory infections in humans, which are hourly mild but are potentially lethal. In some cases, the viruses can cause lower-respiratory tract illnesses such as pneumonia and bronchitis. In human corona viruses are currently classified into seven types that are HCoV-229E, HCoV-OC43, HCoV-NL63, SARS-CoV, HKU1, MERS-CoV and 2019-nCoV. These two types of corona virus (MERS-CoV and SARS-CoV) are more dangerous. The Novel corona virus (2019-nCoV) is newly discovered, or newly originated, and is a placeholder name and also known as Wuhan pneumonia or Wuhan corona virus. Some of corona viruses like HCoV-229E, HCoV-OC43, HCoV-NL63 and HKU1 that are continuously circulate in the population of human and cause respiratory infections in human either may children and adults world-wide. They are generally transmitted between animals and humans through sneezing, coughing, touching or shaking hands and making contact with a surface or object. The symptoms of corona virus are sneezing, cough, fatigue, runny nose, sore throat, breathing difficulty and exacerbated. In more severe cases SARS, kidney failure, pneumonia and even death. Diagnosis can be carried out by healthcare provider in laboratory test on respiratory specimens and serum to detect human corona virus. To prevention of corona virus by covering mouth and nose when sneezing and coughing, avoid unprotected contact with live animals and also washing hand with soap and water. For this virus no specific treatment like vaccines and antiviral drugs but symptoms can be treated.

Keywords: Corona viruses, Virus, 2019-nCoV, MERS-CoV, SARS-CoV, Respiratory symptoms.



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Research Article

Pharmacy practice for good health promotion



A Prospective Antimicrobial Prescription Audit in the Inpatient Department of Pulmonology in a Tertiary Care Hospital

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Abstract: Antibiotics are medicines used to prevent and treat bacterial infections. Antibiotic usage is increasing rapidly day by day with or without prescription. Irrational prescription usage, negligence of standard guidelines and antimicrobial resistance are increasing complexity in the therapy and the desired outcome. High-volume prescription of antibiotics in primary health care is a major factor contributing to antibiotic resistance. Educating physicians and patients can lower prescribing errors and the aim of this study was to do a prospective observational prescription audit in inpatient department of pulmonology in a tertiary care hospital and limiting the inappropriate use of antimicrobials. The primary objective of the study is to determine the Antibiotic prescription, find out the inappropriate drug selection, dose selection, dosage form and course of antibiotics to monitor the culture test as well as antibiotic sensitivity and resistance and also to analyze the drug interaction, allergic medication prescribed and omission of the dose. The study was conducted with 234 patients in Erode district, Tamilnadu. The study conducted by strictly observing the antimicrobial prescription in the inpatient pulmonology department in a tertiary care hospital, limiting the inappropriate drug selection, dose selection, dosage form, course of antibiotics and hence decreasing the antibiotic resistance. The prescribing and administering details were collected in a data acquisition form; the collected data were interpreted with Sanford and GOLD Standard Guidelines and analyzed with descriptive statistics. The study found that irrational use of medication was high (53.41%) and a highly significant medication error also reported. The major concomitant disorder was Chronic Obstructive Pulmonary Disorder (21.79%) and most administered drug was Ceftriaxone (20.51%) (Third generation Cephalosporins). Culture test (32.90%) as well as antibiotic sensitivity and resistance test were done in very less cases, empirical therapy dominates over targeted therapy which affects rationality.

KeyWords: Antimicrobial prescription audit, Antibiotic resistance, Pulmonology, Medication error, rational use of antibiotics.

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Original Article

A CROSS-SECTIONAL OBSERVATIONAL STUDY ON MISCONCEPTIONS ABOUT DIABETES AND RISK OF HYPOGLYCEMIA WITH CONCURRENT USE OF NATURAL HERBS/HERBAL PRODUCTS

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ABSTRACT

Objective: To determine the various misconceptions in diabetes mellitus and the factors leading to such misconceptions. To find out the association of various misconceptions with the socio-demographic factors.

Methods: A cross-sectional observational study was conducted among 350 diabetic patients for a period of 6 mo. The study was done in diabetic clinics in the districts of Salem and Erode.

Results: The study included a total of 350 patients, among which 206 (58.86%) were females and 144 (41.14%) were males. The majority of the study population was between the age group 61-70 (30.86%). The total misconception scores were low (0-34) in 144 (41.14%), moderate (35-69) in 180 (51.43%) and high (70-104) in 26 (7.43%). Out of 25 patients identified with hypoglycemia 2 patients (8%) had only drug-drug interaction. 10 patients (40%) with both DI and HDI were identified. Herb-drug interactions alone were identified in 13 diabetic patients with hypoglycemia (52%) indicating the risk of hypoglycemia with concurrent use of herbs along with diabetic medications.

Conclusion: In this study carried out in a study population of 350 patients, the majority of the population, which contributes to about 94% had high to moderate knowledge about their condition of diabetes mellitus. The misconceptions about diabetes mellitus were high in 6.57% of the study population.

Keywords: Diabetes, Determinants, Knowledge, Misconceptions, Treatment

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INTRODUCTION

According to WHO "Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys, and nerves [1]." India is known as "the diabetes capital of the world" as it harbors the largest number of diabetes patients [2]. In India, its incidence is estimated at 7% of the adult population (approximately 65 million affected people), largely due to genetic susceptibility combined with changing lifestyle of a low-activity high-calorie diet in the growing Indian middle class. But the prevalence of DM is expected to rise in developing countries of Asia due to urbanization and associated obesity [3].

Misconceptions can be defined as an idea that is wrong because it has been based on a failure to understand a situation [4]. Misconceptions are based on popular beliefs or stories that have become associated with a person, community, or occurrence, especially when considered to illustrate a cultural ideal. Diabetes mellitus is a major health problem globally and so are misconceptions [5]. Misconceptions and wrong belief regarding diabetes mellitus and its management can result in poor control, more complications and increased incidence of morbidity and mortality [6]. The commonest misconceptions were "diabetes can be cured by herbal treatment," and "bitter foods can reduce the elevated blood sugar levels" and the misconception "the treatment should be stopped if the diabetes is controlled for a few months". The majority of these misconceptions were diet and drug related [2].

There is a long history of traditional plants used for the control of diabetes in India and China. Currently, the medicinal plants and herbs are being used in extract forms for their anti-diabetic activity. Various clinical studies confirmed that medicinal plant extract shows anti-diabetic activity and restoring the action of pancreatic β -cells [7]. Some of the most common herbs used are: fenugreek, bitter gourd, ginger, garlic, and aloe vera.

Herb-Drug Interactions (HDI) may affect clinical safety and efficacy via additive or synergistic or antagonistic interactions among the herbal components and drug molecules. Negative or harmful interactions tend to receive more attention, due to safety considerations. The effects induced by HDIs may result in an enhancement of the desired pharmacological effect [8]. Some of the most common HDIs are fenugreek+glibenclamide, bitter gourd+glimepiride, and fenugreek+soluble human insulin.

MATERIALS AND METHODS

A cross-sectional observational study was conducted among 350 diabetic patients for a period of 6 mo, using a validated self-designed questionnaire. The study was done in diabetic clinics in the districts of Salem and Erode after obtaining approval of the institutional Ethics Committee (REF NO.: EC/PHARM D/2019-07). The questionnaire was designed in English and then translated into Tamil by a language expert. The data collection form consisted of two questionnaires-questionnaire for misconception and a questionnaire for herb use. The scoring of misconceptions was '0' for the right answer, '2' for wrong answers (misconception), and '1' for 'I don't know'. The total misconception score was calculated and categorized into low (0-34), moderate (35-69), and high (70-104) scores. The misconception questionnaire was categorized into three parts-etiology and general concepts, diet, and treatment. Each of these categories was given sub-scoring. The misconceptions about etiology and general concepts had 19 questions and the score was categorized into low (0-12), moderate (13-25), and high (26-39). Similarly, misconceptions about diet had 16 questions and were categorized as low (0-10), moderate (11-21), and high (22-33). The category of misconceptions about treatment had 17 questions and was given the scoring, low (0-11), moderate (12-23), and high (24-35). The association of misconception scores with various potential determinants was calculated using the Chi-square test. The software Graphpad Prism 8 was used for statistical analysis. The questionnaire for herb use had a total of 12 questions. The



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Studies on antianxiety and anti depressant effect of fruits extract of *ficus racemosa* linn.

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ABSTARCT

Objective

The *Ficus racemosa* fruits of used for folklore medicine to the treatment of Antianxiety and Antidepressant activity of ethanolic fruits extract of *Ficus racemosa* Linn on mice model.

Methods

Evaluation of anxiolytic study (Elevated plus maze, open field test, light and dark model). Evaluation of Depressant study (Tail suspension, forced swim test).

Results EPM

The ethanolic fruits extract of *Ficus racemosais* 200mg/kg, significantly ($P<0.001$) increase the time spent in open arm and increase the same dose 400mg/kg, ($P<0.001$) increased the time spent in neutral zone. L&D - decrease the time spent in dark zone and increase time spent in light zone. The both extract of 200mg/kg and 400mg/kg, significantly ($P<0.001$) OFT- increased the total locomotion. increased total time spent in central compartment while 400mg/kg significantly($P<0.05$) increase the total time spent in central compartment. FST - The significantly 400mg/kg significantly reduce the immobility, the dose near to standard drugs. TSM - The significantly 200mg/kg ($P<0.05$) increase the struggling time to 15%, and the animal treated with 400mg/kg significantly (<0.01) increased the struggling time by increases30%.the result shows the antidepressant activity by tail suspension activity.

Conclusion

Ethanolic fruits extract contain β -sitisterol (steroidal compounds) flavonoids, it may possible the mechanism of anxiolytic and sedative action. we can conclude that ethanolic extract of *Ficus racemosa* possess the Antianxiety and Antidepressant activity for both dose level which comparable with the standard drugs (Benzodiazepine).

Keywords: *Ficus racemosa*, Elevated plus maze, Light and dark model, Open field method Tail suspension, Forced Swim test.



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DEVELOPMENT OF SUSTAINED RELEASE MATRIX TABLET FORMULATION AND EVALUATION OF AMBROXYL HYDROCHLORIDE

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ABSTRACT

Ambroxyl is a Mucolytic expectorant. Ambroxyl has short half life (3-4hrs) makes the development of sustained release forms extremely advantageous, Ambroxyl is a weak acidic pka 4.5 - 6, it has pH dependent solubility, characterized in low pH condition present in stomach, Which consequently delayed in onset of action, Formulation of SR tablet is effective approach for mucolytic expectorant it gives maximum action with prolong drug concentration due to sustained release from tablet matrix. Different formulation (F1 - F7) designed

with HPMC K100, HPMC 5CPS, Povidone K30, MCCP. pre and post -compression parameters for all formulation were studied. Batch F7 selected as optimized batch on the basis of dissolution profile.

KEYWORDS: Ambroxyl, HPMC, MCCP, Dissolution, Sustained release.

INTRODUCTION

Oral drug delivery has been known for decades as the most widely utilized route of administration among all the routes that have been employed for the systemic delivery of drug via various pharmaceutical products of different dosage forms. The reasons that the oral route achieved such popularity may be in part attributed to its ease of administration belief that by oral administration of the drug is well absorbed.

All the pharmaceutical products formulated for systemic delivery via the oral route of administration irrespective of the mode of delivery (immediate, sustained or controlled release) and the design of dosage forms (either solid dispersion or liquid) must be developed



FORMULATION AND EVALUATION STUDIES OF ENTERIC COATED TABLET CONTAINING NON-STEROIDAL ANTI-INFLAMMATORY DICLOFENAC SODIUM

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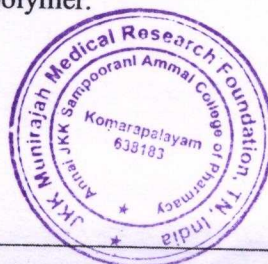
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ABSTRACT

In the present study, an attempt has been made to formulate and evaluate enteric coated tablets of Diclofenac sodium using two different enteric polymers that will only dissolve in the small intestine, such as cellulose acetate phthalate and methacrylic acid ethyl acrylate copolymer to reduce the gastrointestinal tract side effects. Preformulation studies were performed to analyze the characteristics of Diclofenac sodium. Drug and excipients were confirmed to be standard without any incompatibility by Drug Excipients Compatibility study.

Four formulations of core tablets were prepared by wet granulation method and good flow properties were observed. All the physical parameters like appearance, weight variation, thickness, hardness, friability and disintegration time were found to be within the limits for F4 formulation and selected for further enteric coating. Enteric coating was optimized using two different enteric polymers in different concentrations to achieve various percentage weight gains. *In vitro* analysis, Assay and Related Substances test were carried out. The *in vitro* release results showed that the enteric coated tablets were capable of restricting release in acidic media. The optimized formulation was capable of releasing the drug in pH 6.8 in a same manner as marketed formulation of Diclofenac sodium.

KEYWORDS: Diclofenac sodium, Enteric coating, Delayed release, cellulose acetate phthalate, methacrylic acid ethyl acrylate copolymer.




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FORMULATION AND EVALUATION OF DILTIAZEM HCL BUCCAL PATCHES BY USING Lannea GUM

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ABSTRACT

The present investigation involves formulation and evaluation of buccal patch of Diltiazem Hydrochloridean calcium channel blocker drug to bypass the first pass metabolism. The buccal patch of Diltiazem Hydrochloride was prepared by solvent casting technique. Six formulation were prepared with concentrations of bioadhesive polymers like e.g Solvent acetone was used with cellulose acetate. Drug-polymer interaction was investigated using FTIR. The prepared patches were evaluated for thickness, Surface pH, drug content

uniformity, Ex vivo Mucoadhesive strength, % swelling index, folding endurance and in vitro drug release, Determination of Residence Time, Ex Vivo Permeation Study which produced satisfactory results with low standard deviation. After evaluation of all parameter, on the basis of results obtained batch F6 as found to be a optimize batch. This batch shows 98.6% Controlled Drug Release after 6hrs and best fitted in Higuchi model for drug release kinetic.

KEYWORDS: Mucoadhesive, Diltiazem Hydrochloride, Drug delivery, Controlled Drug Release, lannea Gum.

INTRODUCTION

The drugs that are administered orally are subjected to first pass metabolism. To overcome this first pass metabolism, there are different techniques which are applied for the protection of drug against the first pass metabolism. The techniques that include are administration of drug through transdermal route, parenteral route, buccal route, and sublingual route etc.

Among the novel drug delivery system, buccal drug delivery is the main and extensive acceptable drug delivery systems. The orally disintegrating tablets are available in the market



FORMULATION CHARACTERISATION AND IN VITRO
EVALUATION OF TRANSDERMAL PATCHES OF KETOPROFEN
WITH DIFFERENT POLYMER CONCENTRATION

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ABSTRACT

Transdermal drug delivery system is a new era of pharmaceutical dosage forms along with various features to provide successful drug delivery. Transdermal drug delivery system establishes itself as an integral part of novel drug delivery system. In the present study, an attempt was made to design and evaluate transdermal patches of Ketoprofen, in order to overcome first pass metabolism in GIT, drug deactivation by liver and better patient complaints and to reduce adverse effect and frequency of administration. Each of the proposed transdermal patches is composed of using different polymers, anticipating rapping drug permeation and drug release. Controlled released transdermal preparation of Ketoprofen prepared to give sustained effect as compared to conventional multiple oral dose. The patches were prepared by solvent evaporation method using polymers such as ethyl cellulose and polyvinyl pyrrolidone. The prepared patches were evaluated for thickness, weight variation, folding endurance, surface PH, tensile strength, percentage flatness, swellability, percentage moisture uptake, drug content uniformity, invitro permeation, in vitro drug release. In vitro drug release studies were performed by using USP type second apparatus (paddle method) at 50 rpm in 900 ml of 7.4 phosphate refer for 8 hour at $37 \pm 0.5^\circ\text{C}$. In vitro permeation studies were franz diffusion cell apparatus with 7.4 phosphate buffer for 10 hours. Transdermal drug delivery had become an appealing and patient acceptance technology as it is minimize and avoids the limitations while comparing with conventional as well as parenteral route of drug administration such as peak and valley phenomenon i.e. exhibit fluctuation in plasma drug concentration level, pain and inconvenience of injections and the limited controlled release options of both. A transdermal patch is defined as medicated adhesive patch which is placed above the skin to

DESIGN, CHARACTERIZATION AND EVALUATION OF MUCOADHESIVE COLON TARGETED DRUG DELIVERY SYSTEM FOR PREDNISOLONE

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ABSTRACT

Evaluation of colon targeted drug delivery of anti-inflammatory drug y Mucoadhesive bilayer tablets containing prednisolone were prepared by Wet Granulation method. Various batches were prepared by changing the ratio of pectin, PVP K 30 to identify the most effective formulation CP-934 (mucoadhesive polymers), lactose (diluent), in a $F_1 - F_2$ After compression given by coating Eudragit polymer. each coated tablet containing 300mg of drugs, Drug polymer interaction was investigated by using FTIR. The preformulation studies and post

compression studies are performed like mucoadhesive strength, determination of residence time in invitro dissolution study at pH 6.8 F6 shows maximum drug release at after 9hrs.

KEYWORDS: PVP K 30, Eudragit, Mucoadhesive bilayer tablets.

INTRODUCTION

Colon is being extensively investigated as a drug delivery site. Colon targeted drug delivery system (CTDDS) has been developed by means of one or more controlled released mechanisms. It is convenient for treating localized colonic diseases, i.e. Ulcerative colitis, Crohn's diseases and constipation etc.^[1-3]

Its potential applications include Chronotherapy, Prophylaxis of colon cancer and treatment of Nicotine addiction. The treatment of Inflammatory Bowel Disease (IBD) with anti inflammatory drugs is particularly improved by local delivery to bowel by using CTDDS. For successful colon specific drug delivery, many physiological barriers must be overcome; the major one is being absorption or degradation of the active drug in the upper part of the GIT.