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REVIEW ARTICLE ON "MEDICATED LOLLIPOP"

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ABSTRACT

There are several dosage forms in the market, there is a need for more dosage form which acts effectively and locally as well as systematically. The benefits of the present research work is increased retention time of the dosage form in oral cavity and increased bioavailability, reduction in gastric irritation by passing first pass metabolism. Lollipops are flavored medicated dosage *form intended to be sucked and held in the mouth or pharynx containing one or more* medicaments usually in the sweetened base. The conventional dosage forms like tablets, capsules, syrups etc are inconvenient for paediatric patients because of difficult to swallow tablets and capsules or unpleasant taste of drug. As a result, the demand for developing new technologies has been increasing day by day. Medicated lollipop is designed to improve patient compliance, acceptability and increase oral retention time. The lollipops were prepared by heating and congealing method using polymer. Lollipops are available in a number of colors and flavors, particularly fruit flavors. Flavored lollipops containing medicine are intended to give children medicine without fuss.

KEYWORDS: Medicated lollipop, flavored medicated dosage form, heating and congealing method.

INTRODUCTION

Lollipops are solid dosage forms, containing medicament in a sweetened & flavored base, intended to dissolve slowly in the mouth. Lollipops are mainly contained sweetening agent flavoring agent, coloring agent, opacifiers & stabilizing agent. Lollipops are the flavored medicated dosage forms intended to be sucked and held in the mouth or pharynx containing one or more medicaments usually in the sweetened base.Lollipop are intended to relieve oropharyngeal symptoms, which are commonly caused by local infections and also for systemic effect provided the drug is well absorbed through the buccal linings or when it is swallowed. Lollipop are used for patients who cannot swallow solid oral dosage forms as well as for medications designed to be released slowly to yield a constant level of drug in the oral cavity or to bathe the throat tissues in a solution of the Drugs often incorporated into Lollipop include analgesics, anesthetics, antimicrobials, antidepressants, antiseptics, antitussives, aromatics, astringents, corticosteroids, decongestants, and demulcents. However, this is by no means an exhaustive list as many other drugs may lend themselves to delivery by a Lollipop. As well, both

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FORMULATION AND EVALUATION OF FLOATING MATRIX TABLET OF REPAGLINIDE

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ABSTRACT

The present study involves preparation and evaluation of floating tablet of Repaglinide prolongation of gastric resident time. The tablets were prepared by direct compression method using polymer HPMC (K 100M, HPMC E15) & Xanthun gum. The tablets were evaluated for Angle of repose, Bulk density, Tapped density, Carr's index Hausner ratio. The prepared tablets were characterized by size & Shape, Hardness, Thickness, Friability, Weight variation and drug content respectively. In-vitro drug release studies were performed by using an USP dissolution test apparatus-II (Basket type) at 37 + 0.5 ^{O}C and 50 rpm speed. To study the release behavior were performed on the optimized formulation. The prepared tablet exhibited prolonged drug release (12 hr.) and remained buoyant for > 12 hr. The optimized formulation F7 was kept for short term stability study. The conditions for stability study were 40^{o}c and relative humidity of 75% from the study; it was observed that there is no significant change in stability and drug release rate.

KEYWORDS: Floating matrix tablet, Repaglinide, In-vitro release, Bioavailability.

INTRODUCTION

The oral route is most preferable route for administration of the drug but it may have some disadvantages like slow onset of action or slow absorption. This problem can be overcome by using alternative dosages form or administrating the drug via other routes. While we are selecting a dosage form or route for administration of drug there are some parameters should be consider like stability and bioavailability of the formulation as well as active pharmaceutical ingredients. The Effervescent floating tablets can be used as alternative dosage form to minimize some problems associated with conventional dosage forms. The Effervescent floating tablets also reduce fluctuations of drug concentration and can be used to increase the bioavailability of drug.

Simply, Effervescence means release of carbon dioxide gas due to reaction of acids and bicarbonates in presence of water. Some common acids used in this reaction are citric, malic, tartaric, fumaric acid and bicarbonate used in the effervescent reaction is sodium bicarbonate,

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Formulation and Evaluation of Fast Mouth Dissolving Film of Tenofovir Disoproxil Fumarate

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ABSTRACT-Mouth dissolving dosage forms are gaining popularity in recent time because of good patient compatibility, fast disintegration time, flexibility in transportation etc. In this research work Tenofovir Disoproxil Fumarate (TDF) is used to treat chronic hepatitis B. TDF is an antiretroviral drug. TDF is selected as model drug for the preparation of Mouth dissolving film (MDF). MDF was prepared by solvent casting method using HPMC E15 & PVP K30 as film former and Glycerol & PEG-400 as plasticizers. MDF were evaluated for physical characteristics such as tensile strength, percentage elongation, drug content uniformity, surface pH, folding endurance, uniformity weight, and thickness and gave satisfactory result. The formulations were subjected to disintegration time, in vitro drug release test and stability study. The FTIR studies revealed that there was no physicochemical interaction between excipients and drug. The FTIR studies revealed that there was no physicochemical interaction between excipients and drug. A marked % drug release was exhibited by MDF of TDF containing HPMC E15 as a polymer at 30 sec.

KEYWORDS- Tenofovir Disoproxil Fumarate, Mouth-dissolving film, HPMC E15, PEG-400, Solvent Casting Method.

I. INRODUCTION

Oral route is the most preferred route for the delivery of the drugs till date as it bears various advantages over the other route of drug administration, the particular class of patients which includes geriatric, pediatric and dysphasic patients associated with many medical conditions as they have difficulty in swallowing or chewing solid dosage forms. Many pediatric and geriatric patients are unwilling to take solid preparations due to fear of choking.that's way the MDF are very essential to used.

Mouth dissolving films (MDF)

Definition of FDF: Fast dissolving films are most advance form of solid dosage form due to its flexibility. It improve efficacy of Active pharmaceutical ingredient (API) dissolving in the short duration oral cavity after the contact with less amount of saliva as compared to dissolving tablet.[1]

Mechanism of absorption through saliva:

There are two possible routes for drug absorption: the transcellular (intracellular, passing through the cell) and the paracellular (intercellular, passing around the cell) route. Another classification involves passage through non-polar (lipid elements) and polar (hydrophilic material through aqueous pores) routes. The permeation mainly occurs by the par cellular route, but the route taken depends on the physicochemical properties of the drug. Small molecules, predominantly lipophilic, are absorbed most rapidly, whereas large hydrophilic Molecules are generally poorly absorbed. Hydrophilic molecules take the paracellular route, compared to lipophilic molecules, which take the transcellular route. The permeability decreases as the molecule size increases. The passage across the oral mucosa follows a first order simple diffusion process. Although passive diffusion is the main mechanism of drug absorption.

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A Review on "Oral Controlled Release Drug Delivery System"

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ABSTRACT- Oral drug delivery is the most favored and helpful choice as the oral course gives greatest dynamic surface territory among all drug delivery system for organization of different drugs. The engaging quality of these dose structures is because of attention to poisonous quality and insufficiency of drugs when managed by oral ordinary strategy in the type of tablets and cases. Typically traditional dose structure creates extensive variety of vacillation in drug focus in the circulation system and tissues with ensuing undesirable danger and poor effectiveness. The support of convergence of drug in plasma inside helpful record is extremely basic for compelling treatment.

These elements and elements, for example, redundant dosing and unusual assimilation lead to the idea of oral controlled release drug delivery systems. Controlled release drug delivery system takes a shot at various systems to control the release rate of drugs. Different components like osmotic weight, matrix system, reservoir system, changed thickness system and so forth have been used as detailing methodologies. The present article contains brief survey on different detailing approaches for controlled release drug delivery system.

KEYWORDS - Controlled release drug delivery system, matrix type system, reservoir system.

I. INTRODUCTION

Maintained release (S.R)/Controlled release (C.R) pharmaceutical items have slowly increased restorative acknowledgment and fame. Administrative endorsement for advertising and their pharmaceutics predominance and clinical advantages over prompt release pharmaceutical items have been progressively perceived. Altered release oral measurement frames have brought new rent of life into drugs that have lost business sector potential because of prerequisite of incessant dosing, dosage related poisonous impacts and gastrointestinal unsettling influences.

The term changed release drug item is used to portray items that modify the planning what's more, or the rate of release of the drug substance. A changed release dose structure is characterized "as one for which the drug-release Attributes of time course and/or area are proficient remedial or comfort targets not offered by ordinary measurements structures, for example, arrangements, treatments, or instantly dissolving measurements shapes as in a matter of seconds perceived". A few types of adjusted release drug items are perceived

Broadened release drug items: A measurement structure that permits no less than a twofold lessening in measurements recurrence when contrasted with that drug introduced as a quick release (customary) measurements structure. Case of expanded release measurements frames incorporate controlled-release, maintained release, and long-acting drug items.

Postponed release drug items: A measurements structure that releases a discrete part or bits of drug at once or now and again other than speedily after organization, in spite of the fact that one bit might be released quickly after

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A Research on "Formulation & Evaluation of Mouth Dissolving Tablet of Azithryomycine"

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ABSTRACT- Aftereffect of disintegration time showed that detailing (F9) was the most encouraging definition as the disintegration time and all the physical parameters from this plan were as indicated by particular. A comparative gradation testing was performed between controlled tablets (F11), unflavored tablet (F10) and optimized flavored tablets (F9) and discovered bitterless definition F9 and F10. In-vitro drug discharge study was performed with optimized detailing (F9) in pH 1.2 cushion arrangement which gave 90% medication discharge in 15 min. and 100% in 20min.and contrast and the controlled tablets (F11) which gave 100% discharge in 15 min. in same medium.

KEYWORDS - disintegration, comparative gradation testing, tablets (F11), unflavored tablet (F10) and optimized flavored tablets (F9).

I. INTRODUCTION

Tablets and hard gelatine cases constitute a noteworthy segment of the medication conveyance frameworks that are as of now accessible. In any case, numerous patient gatherings, for example, elderly, youngsters, and patients rationally retarted, uncooperative, disgusted, or on diminished fluid admission diets experience issues in gulping these measurement shapes. Numerous elderly persons face challenges in managing customary oral dose shapes in view of hand tremors and dysphasia. Gulping issue is basic in kids as a result of their immature strong and sensory systems. Now and again like movement infection, sudden scenes of unfavorably susceptible assault or hacking, and amid inaccessibility of water, gulping ordinary tablets is troublesome. To satisfy these medicinal needs, formulators have given extensive endeavors for building up a novel kind of dose structure for oral organization known as mouth dissolving tablets (MDT).

MOUTH DISSOLVING TABLET

This is a creative tablet innovation where the measurement structure containing dynamic pharmaceutical fixings breaks down quickly, normally in a matter of seconds, without the requirement for water, giving ideal accommodation to the patient. Trailblazers and innovator organizations have given these tablets different names, for example, orally deteriorating tablets (ODT), mouth dissolving (MD), quick softening, quick dissolving or Orodisperse.

The European Pharmacopeia characterizes Orodisperse as a tablet that can be set in the mouth where it scatters quickly before gulping. Specialists have defined ODT for different classes of medications, which are utilized for treatment as a part of which fast crest plasma focus is required to accomplish craved pharmacological reaction. These incorporate neuroleptics, cardiovascular specialists, analgesics, hostile to hypersensitive and drugs for erectile brokenness.

II. LITERATURE REVIEW

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A REVIEW ON THE PROS AND CONS OF ONLINE PHARMACIES

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ABSTRACT

Now a day's buying a medicine online is common practice across the globe, because buyers are used to order for medicines through a click of a button rather than taking a trip to a drug store. Such online websites sell everything from prescription drugs to health related products. Most of such stores are legal outlets that safeguard all traditional procedures related to drug prescription. That is why most buyers are confident about dealing with these stores. But there are quite a few rogue stores that have come up in the recent past over the internet. These stores deal in illegal medications and unapproved drugs, buyers must be aware of such rogue stores. The fact remains that drugs purchased at online drug stores offer high levels of handiness, put forward privacy for the buyer as well as safeguard traditional procedures of prescribing drugs. Thus consumers can use these services with the same confidence as they would have had in the neighbourhood pharmacist. But they must stay away from "rogue sites" that sell unapproved products or sidestep conventional procedures that safeguard the interests of consumers. Additionally, customers have difficulty knowing whether an Internet pharmacy is a legitimate operation.

INTRODUCTION

The Internet, first developed as a resource to facilitate communication, has now grown into a global network of computer systems that link multiple platforms and creates interrelationships between governments, academic institutions, businesses and consumers. Although experts predict that over 500 million people will be online by 2016, approximately 88% of all Internet users are presently situated in industrialized countries. [1]

Buying medicines online is common practice across the globe these days. This is because buyers are preferring to order for medicines through a click of a button rather than taking a trip to a drug store. Such online websites sell everything from prescription drugs to health related products. Most of such stores are legal outlets that safeguard all traditional procedures related to drug prescription. That is why most buyers are confident about dealing with these stores. But these are quite a few rogue stores that have come up in the recent past over the internet. These stores deal in illegal medications and unapproved drugs. Buyers must be aware of such rogue stores. [2]

Within this global perspective, industry analysts have projected that Internet pharmacies will generate US$ 15 billion in prescription drug sales by 2016 and over US$ 30 billion by 2020. Currently, over 400 businesses dispensing prescription drugs operate on the Internet. Many of these websites, however, deliver prescription drugs without a valid prescription, dispense drugs of questionable quality, and fail to provide adequate independent information to patients on possible adverse reactions and drug interactions. Additionally, customers have difficulty knowing whether an Internet pharmacy is a legitimate operation. [3]

THE PROS OF BUYING DRUGS FROM ONLINE PHARMACY:

1. Privacy/ Anonymity: Consumers privately and conveniently order for medicines from online chemist stores as well as get to avail free delivery. Consumers may feel more

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FORMULATION, DEVELOPMENT AND EVALUATION OF 'PENTOXIFYLLINE, FLOATING TABLET

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ABSTRACT

Gastric emptying is a complex process and makes in-vivo performance of the drug delivery systems uncertain. In order to avoid this variability, efforts have been made to increase the gastric retention time of the drug-delivery systems for more than 12 hours. Floating drug delivery systems release gas (CO_2), thus reduce the density of the system and remain buoyant in the stomach for a prolonged period of time and released the drug slowly at a desired rate so it can be used to prolong the gastric residence time in order to improve the bioavailability of drug. The recent developments of FDDS including the physiological and Formulation variables affecting gastric retention, approaches to design single-unit and multiple-unit floating systems, and their classification and formulation aspects are covered in detail.

KEYWORDS: FDDS, prolonged period, Bioavailability, gastric retention time etc.

INTRODUCTION

The oral route is increasingly being used for the delivery of therapeutic agents because the low cost of the therapy and ease of administration lead to high levels of patient compliance. More than 50% of the drug delivery systems available in the market are oral drug delivery systems. Floating systems or hydrodynamically controlled systems are low-density systems that have sufficient buoyancy to float over the gastric contents and remain buoyant in the stomach without affecting the gastric emptying rate for a prolonged period of time. While the system is floating on the gastric contents, the drug is released slowly at the desired rate from the system. After release of drug, the residual system is emptied from the stomach. Floating systems are low density systems that have sufficient buoyancy to float over the gastric

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A REVIEW ON MOUTH DISSOLVING TABLET

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MDT, Orodispersible tablets, fast dissolving/dispersing tablets, Melt in mouth tablets, Mass extrusion, Superdisintegrants

ABSTRACT

The demand for MDT (Mouth Disintegrating Tablet) has been increasing from the last decade particularly in geriatric, pediatric and patient with some sort of disabilities in swallowing. MDTs are those tablets which when placed in mouth get dissolved rapidly in saliva without the need of liquid and can be swallowed. European pharmacopoeia adopted the term Orodispersible tablet for MDTs. Mouth disintegrating tablets are also known as Fast melting tablets, Orodispersible tablets, fast dissolving/dispersing tablets or melt in mouth tablets. This article reviews the potential benefits offered by MDTs as an oral drug delivery system for various kinds of patients suffering from different diseases and disabilities. Desired characteristics and challenges for developing fast disintegrating drug delivery systems, quality control tests, various techniques used in the preparation of fast disintegrating drug delivery systems like lyophilization technologies, tablet molding method, sublimation techniques, spray drying techniques, mass extrusion technology, direct compression method and uses of super-disintegrates. It also reviews the patented technologies for fast dissolving tablets, advantages and disadvantages of different technologies for preparing fast disintegrating dosage form, future prospective for MDTs. The growing importance for MDTs is due to the potential advantages offered by this technology. MDT is a New Drug Delivery system with least disintegration time and ease of self administration

INTRODUCTION

Many patients, especially elderly find it difficult in swallowing tablets, capsules, fluids and thus do not comply with prescription, which results in high incidence of non-compliance oriented research has resulted in bringing out many safer and new drug delivery system. Rapidly disintegrating/dissolving tablet is one of such example, for the reason of rapid disintegration or even with saliva. Considering quality of life, most of these efforts have been focused on ease of medication. Among the various dosage forms developed to improve the ease of administration, the mouth dissolving tablet (MDT) is the most widely preferred commercial products. The oral cavity is an attractive site for the administration of drugs because of ease of administration. Various dosage forms like Tablets, Capsules, and Liquid preparations are administered by oral route. During the last decade, mouth dissolving tablet (MDT) technologies that make tablets disintegrate in the mouth without chewing and additional water intake have drawn a great deal of attention. The MDT is also known as fast melting, fast dispersing, rapid dissolve, rapid melt, and or quick disintegrating tablet. All MDTs approved by the Food and Drug Administration (FDA) are classified as orally disintegrating tablets. Recently, the European Pharmacopeia adopted the term orodispersible tablet for a tablet that disperses or disintegrates in less than 3minutes in the mouth before swallowing. Such a tablet disintegrates into smaller granules or melts in the mouth from a hard solid to a gel-like structure, allowing easy swallowing by patients. The disintegration time for good MDTs varies from several seconds to about a minute. Orally disintegrating tablets provide an advantage particularly for pediatric and geriatric population who has difficulty in swallowing conventional tablets and capsules. Additionally

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FORMULATION AND EVALUATION OF MOUTH DISSOLVING TABLET OF ACECLOFENAC BY USING SYNTHETIC AND NATURAL SUPERDISINTEGRANTS

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ABSTRACT

The present investigation deals with development of fast dissolving tablets of aceclofenac to produce the intended benefits. Fast dissolving tablets of aceclofenac were prepared using superdisintegrant croscarmellose sodium and Isabgol using the direct compression method. The tablets prepared were evaluated for thickness, uniformity of weight, hardness, friability, wetting time, *in vitro* disintegration time and *in vitro* dissolution time. The tablets disintegrated within 30 to 60 seconds. Almost 90% of drug was released from all formulations within 15 min. The formulation containing 9% of croscarmellose sodium was found to give the best results. Apart from fulfilling all official and other specifications, the tablets exhibited higher rate of release.

KEYWORDS: Direct compression, Aceclofenac, Crosscarmellose, Isabgol, Mouth Dissolving Tablet.

INTRODUCTION

For the past one decade, there has been an enhanced demand for more patient- friendly and compliant dosage forms. As a result, the demand for developing new technologies has been increasing annually. Since the development cost of a new drug molecule is very high, efforts are now being made by pharmaceutical companies to focus on the development of new drug dosage forms for existing drugs with improved safety and efficacy together with reduced dosing frequency, and the production of more cost effective dosage forms.[1] Many patients have difficulty swallowing tablets and hard gelatin capsules and consequently do not take

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ISOLATION OF PECTIN FROM ORANGE PEEL AND ITS USE AS BINDER IN THE TABLET FORMULATION

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ABSTRACT

An orange is the most commonly grown tree fruit in the world. The orange peel is the waste part of orange which remains after squeezing and is the potential source of pectin. The powder obtained from orange peel was subjected to decoction with water and pectin was isolated with ethanol. Pectin was confirmed by identification tests. The placebo tablets were formulated using pectin as a binder in different proportions (10, 20, 30, 40 mg). Pre-compression and post-compression evaluation studies were performed for all the formulated tablets and were found to be within the range as referred in the pharmacopoeias. Friability, hardness and disintegration time of formulation F3 (30mg of pectin) showed better results as compared to the other formulation. As the evaluation tests showed weight variation, friability, hardness, disintegration time of formulation within the range, the pectin isolated from orange peel can serve as an excellent binder in the tablet.

KEYWORDS: Orange peel, pectin, binding properties, ethanol, binder, placebo tablet.

INTRODUCTION[2]

Pectin is a naturally occurring biopolymer that is finding increasing applications in the pharmaceutical and biotechnology industry. It has been used successfully for many years in the food and beverage industry as a thickening agent, a gelling agent and a colloidal stabilizer. Pectin has been widely studied and published but is difficult to characterize as a model system due to the heterogeneous nature of the polymer. This review will first describe the source and production, chemical structure and general properties of pectin. The methods

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Formulation of Niosomal Gel of Diclofenac Sodium and its *In-Vitro* Characterization

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Keywords: Niosomes, Diclofenac sodium, Transdermal drug delivery, *In-vitro* permeation

ABSTRACT

Niosome is a non- ionic surfactant vesicles which being formed by the self assembly of non-ionic surfactant that have potential application in the delivery of hydrophobic and hydrophilic drugs. Preparation of anti-inflammatory Niosomal gel of Diclofenac sodium is evaluated using physical parameters, pH determination, content uniformity, extrudability, spreadability, degree of deformability testing. Rheological studies carried out to determine gel behavior. *In-vitro* permeation of gel formulations was investigated using Franz diffusion cell. Each of the prepared Niosome significantly improved drug permeation. Niosomes prepared with Span 60 provided a higher permeation across the skin than that of Span 20 and Span20:Span 60 combination ratio. Changes in the cholesterol content affect the encapsulation efficiency and permeation of gel. The encapsulation (%) of Niosomes with Span 60 surfactant showed a very high value of ~100% due to its low surface energy decreases the size of vesicle and drug permeation increases. It can be reasonably concluded that Niosomal gel using Span 60 is better suited for controlled release of Diclofenac sodium.

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Review Article

A Review of Herbal Drugs Used in the Treatment of Epilepsy

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ABSTRACT

Convulsion is the second most common neurologic disorder after stroke. It is a condition where the patient suffers from recurrent seizures. To make control over repeated seizures conventional drugs came into existence. Most of the epileptic patient needs polytherapy of conventional anticonvulsants still not 100% cured.This article has been made to review of following plants which are used in/as antiepileptic agent. Different herbs have a vital role in the prevention and treatment of convulsion. The phytochemical exploration of these herbs has contributed to some extent this role for the development of new anticonvulsant drug.This conventional anticonvulsant has a major drawback that due to these agents there is chronic side effect and drug interactions which restrict its use.

Keywords: Epilepsy, anti-epileptic drugs.

INTRODUCTION

Epilepsy called " Farfadiya" in Hausa has changed from the old belief that was through to be a curse or caused by goods and then treated by incantation herbs rituals and magic to a modern scientific concept once a person is diagnosed and known to be epileptic his carrier and employment ever in government agencies may be adversely affected[1]

The herbal medicines principles are relatively simple although they are quite distinct from conventional medicine. India is a rich source of medicine such as Ayurveda, Unani and Siddha only a few of them have been scientifically explored.[2]

In modern medicine,epilepsy is considered to be a chronic brain syndrome of various etiology characterized by recurrent seizures and usually associated with loss or disturbance of consciousness. There may be a characteristics body contraction (conclusion). The seizure is due to excessive electrical discharged in the brain and the seizure pattern depends not only on the cause but the origin extent, Intensity and type of epileptic discharged in the brain. Drugs used in treatment of epilepsy are collectively termed "Anticonvulsants". The mechanism of seizures suggests abolish or attenuate them.[3]

The term epilepsy is collectively designated for a group of chronic central nervous system (CNS) disorder (Neurological disorder) characterizedby spontaneous occurrence of seizures generally associated with the loss of consciousness and body movements (Convulsion)[4] there annual incidence of50/100000 per year. [5] Epilepsy is defined as recurrent seizures that are not the immediate result of an acute cerebral insult.[6]

Classification of Epileptic Seizures

Type Of Seizures	Symptoms / Key features
Focal Seizure without Altered mental status	Symptoms vary depending on location Of abnormal activity in the brain:Involuntary repetitivemovement, (motor cortex) parenthesis (Sensory cortex), flashing light (Visual cortex) etc. **Consciousness is preserved.** Spread to ipsilateral region within cortex (e.g. "Jackson Ian march")
With altered mental status	Symptoms typically result from abnormal activity in the temporal Labe (amygdala,hippocampus) frontal Labe. **Altered consciousness** (Cessation of activity , loss of contact with reality)often associated wi involuntary "automatism" ranging from simple repetitive movements (lip smackinghand wringing highly skilled activity (driving, playing musical instrument) Impaired memory of ictal phase classically preceded by an aura.

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A REVIEW ON GENOME EDITING

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Abstract:
The Present Review report contains the information about Genome Editing. In this report genome editing is illustrated at the basic level for better understanding. It contains History of Genome Editing from 1800 to Current day i.e. from concept of DNA till current time. Genome editing is an technique to make every human smarter not our choice, by customizing next generation the way we want it to be like to be look and also the intellectual capacity. In this Concept, the viral Immunity is used to treat untreated diseases by using DNA modification technology. Most common and easy way of Genome editing that is CASPER/Cas9 is highlighted in short and other methods like Meganeucleus, Transcription activator-like effectors nucleases, Zinkfiger nucleus all are described in short. The Report also contains flow charts of Targeted mutagenesis using embryonic stem (ES) cells for better understanding. The review report also contains Genome Editing in not only in Humans but in Plants also. Which will give us better Crop yield with greater quality of food and containing more amount of active ingredients. For plants there are points taken which are. The importance of mutants in gene discovery, Agrobacterium-mediated gene-tagging mutagenesis etc. and also a flow chart of Plant Genome editing using CASPER/Cas9 technique. Now at the last but not the lease, Advantages and Disadvantages of Genome Editing to know that what this technique will give us in future and what it will take away from us.

Key Words: *Meganucleus,nucleases, Agrobacterium, Genome, CRISPER/Cas9.*

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A REVIEW ON ZIKA VIRUS

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ABSTRACT

In this review article, we try to mention all information regarding Zika virus. The Zika virus was virus discovered in 1947 in Uganda in mosquitos in the genus *Aedes*. From the 1960s to 1980s, human infections were found across Africa and Asia typically accompanied by mild illness The virus was first isolated from a rhesus macaque monkey had been placed in a cage in the Zika Forest of Uganda, near lake Victoria in April 1947. The virus was identified almost 70 years ago. The pregnant women who become infected with Zika virus could able to transmit the disease to their unborn babies, with serious complications. Zika virus disease outbreaks were reported for the first time from the Pacific in 2007 and 2013 (French Polynesia, respectively) and in 2015 from the Americas (Brazil and Colombia) and Africa (Cape Verde). Approximately one person in five who becomes infected with Zika is likely to have symptoms like a clinical illness arthralgia, notably of small joints of hands and feet, with possible swollen joints, conjunctivitis, post-infection fatigue. No specific antiviral treatment is available for Zika virus infection. Treatment is generally supportive and can include rest, fluids and use of analgesics and antipyretics. But as the Prevention Concern, all travelers are advised to take the mosquito bite prevention measures when travelling to areas currently affected by Zika virus or wherever mosquito borne diseases are present. These precautions are necessary in the daytime as well as night time.

KEYWORD: Zika virus, Arthralgia, Aedes, Conjunctivitis, mosquito etc.

1) INTRODUCTION

Zika a flavi virus transmitted mainly by mosquitos in the genus *Aedes*, was discovered in 1947 in Uganda. From the 1960s to 1980s, human infections were found across Africa and Asia typically accompanied by mild illness. The first large outbreak of disease caused by Zika infection was reported from the Island of Yap (Federated States of Micronesia) in 2007.

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Original Research Article

Phytopharmacological Screening of *Feronia limonia* Linn

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Abstract: From very old days to recent civilization, human species depends on most of the natural resources for smooth running of their life. In nature specifically plants has a key source of drugs and its remedies. Feronia Limonia belonging to family Rutaceae is well known in Indian traditional systems for its traditional uses. Various parts of the plant like leaves, fruits, roots, bark have an astringent, constipating, tonic for liver and lung, diuretic, carminative, and cardiotonic effect and these are traditional uses. Various chief phytoconstituents like alkaloids, phenolic compounds, triterpenoids, tannins, steroids etc. have been isolated from Feronia Limonia. But only few pharmacological activities like antimicrobial, antiviral, antitumour, antifungal etc. activities have been scientifically reported. From huge traditional uses documented in various traditional system of medicine and presence of vital phytoconstituents make Feronia Limonia an important plant to be studied scientifically to prove a variety of traditional uses. In present work we look at Feronia Limonia description, traditional medicinal uses, and phytoconstituents and anthelmintic activity of its leaves. Five concentrations (10, 25, 50, 75 and 100 mg/ml) of aqueous extract of leaves Feronia Limonia were studied for an anthelmintic activity on adult Indian earthworms Pheretima Posthuma in a bioassay, which involved the determination of time of paralysis and time of death of the worms using Piperazine citrate as reference standard. The results indicated that 100 mg/ml concentration of Feronia Limonia leaves was more significant than that of other concentration.
Keywords: Feronia Limonia, pharmacological, phytoconstituents, anthelmintic etc

INTRODUCTION

Morphology

Feronia Limonia Linn is a deciduous, slow-growing, tree belonging to the family Rutaceae. Its leaves bark and fruits have medicinal values and used as traditional medicines for centuries due to their antimicrobial [1] antifungal [2] and insulin secretogouge activities. The fruits are round to oval, 5-12.5 cm wide, with a hard, woody, grayish-white, about 6 mm thick, pulp brown, odorous, resinous, astringent, acid or sweetish, with numerous small, white seeds scattered through it. The fruits are used in India as a liver and cardiac tonic, and when unripe, as an astringent means of halting diarrhea and dysentery and effective in treatment for cough, sore throat and diseases of the gums. The pulp is a good antidote for snakebites [3].

Taxonomical Classification: [4]
Division: Plantae
Class: Magnoliophyata
Order: Sapinadales
Family: Rutaceae
Genus: Limonia
Part used: Fruits, gum, leaves, bark and pulp are used traditionally [5].

Synonyms: Limonia Elephantum (Correa) Panigrahi, Limonia acidissima L., Schinus Limonia L [6].

Indian name:[7]
Beng.: Kayat Bael, Kavataleal,
Eng.: Wood Apple,
Guj.: Kotha, Kondhu ,
Hindi.: Kaitha,
Kan.: Bekalu, Belada, Belalu,
Mar.: Kavatha,
Punj.: Kainth,
Tam.: Vilamaram, Vilangai,
Tel.: Velaga,
Urdu.: Kaith.

Growth and Distribution

This plant is found in throughout the India [8], also cultivated in Bangladesh, Pakistan and Srilanka [9]. Propagation is done by seed and vegetative method [10]. But high rate of seedling mortality and out breeding nature of this plant account for poor regeneration and inferior germplasm. To overcome this, in vitro propagation through axillary bud proliferation has been developed [11-12].

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Formulation and Evaluation of Solid Dispersion Technique of Poorly Water Soluble Drug Atenolol

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ABSTRACT- The objective of present study was to improve the aqueous solubility and dissolution rate of poorly water-soluble drug Atenolol by solid dispersion technique. The method of preparation used was Hot Melt Method and Kneading Method using a carrier polyethylene glycol 6000 (PEG 6000), and hydroxyl propyl methyl cellulose (HPMC E4). The study was further aimed to characterize prepared solid dispersions in the solid state by Fourier Transform Infrared Spectroscopy (FTIR). Dissolution studies were carried out to find out percentage released content of drug as a function of time; UV-visible spectroscopy method was used to find out drug contents in all the samples.

KEYWORDS- Solid dispersion, Atenolol, PEG 6000, HPMC (E4), Dissolution, Solubility.

I. INTRODUCTION

The major problem in oral administration of bitter drugs are unacceptability by the patients mainly pediatric and geriatrics [1] and this can be overcome by masking the bitterness of drug either by decreasing its oral solubility on ingestion or decreasing interaction of drug particles to taste buds [2].There are various techniques available which are used for masking the taste of bitter drugs including coating, solid dispersion, ion exchange resin, entrapment method and masking of taste buds etc. Coating avoids the contact of drug particles with taste buds and taste is not apparent to the users [3]. Dispersion of one or more active ingredients in an inert carrier or matrix in solid state is mainly utilizes in solid dispersion form asking the bitter taste of drug [4] which can be done either Melting method, Solvent method or melting solvent method [5]. Atenolol belongs to a group of beta blocker (selective β1antagonist) used as antihypertensive, antianginal and antiarrythmic [6]. Due to its bitter taste, slightly solubility in water, low bioavailability (50%) makes it suitable candidate for masking the bitterness and increase its solubility. atenolol is found to have adverse side effects resulting from accumulation of drug and erratic absorption patterns from the GIT. Its low solubility in water, low bioavailability (50%), variation in release patterns and use in cardiac diseases make it suitable candidates for a suitable formulation strategy to increase of its release from solid dosage forms. To overcome this problem, one technique could be enhancement of solubility and dissolution rate of Atenolol by preparing its solid dispersion by using carrier PEG 6000 and HPMC (E4) [7].

II. LITERATURE REVIEW

Ms. Trusha Y. Puttewar *et al.*, (2015), prepared a solid dispersion of Aspirin using fusion (melt) method and PEG 6000 were used as carrier [8].

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DEVELOPMENT AND VALIDATION OF RP–HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF TENOFOVIR DISPROXIL FUMARATE AND LAMIVUDINE IN COMBINED TABLET DOSAGE FORM

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ABSTRACT

A simple, specific, accurate and precise RP-HPLC method with UV detection has been developed for the simultaneous determination of Tenofovir Disproxil Fumarate and Lamivudine in combined Tablet dosage form. The RP-HPLC method was performed by reverse phase C18 column (*Younglin (S.K) Gradient System* UV (250mm x 4.6mm, 5µ). The sample was analysed using Methanol 80 ml and water 20ml (pH 2.5, 0.05 % OPA) as a mobile phase at a flow rate of 7.0ml/min and detection at 265nm. The retention time for tenofovir and lamivudine was found to be 3.4667 min and 5.1833 min respectively. The Tablet assay was performed for this combination and was validated for accuracy, precision, linearity, specificity and sensitivity in accordance with ICH guidelines. Validation revealed the method is specific, rapid, accurate, precise, reliable, and reproducible. Calibration plots were linear over the10-50 µg/mL for tenofovir and 10-50 µg/mL for lamivudine, respectively, and recoveries from combined Tablet dosage form were between 98 and 102%. The method can be used for routine of the quality control in pharmaceuticals. .

KEYWORDS: Tenofovir, Lamivudine, Validation, RP-HPLC.

INTRODUCTION

Tenofovir disproxil fumarate [Figure 1] is fumaric acid salt of the bis isopropoxy carbonyl oxy methyl ester derivative of tenofovir .chemically it is ({[(2*R*)-1-(6-amino-9*H*-purin-9-yl)

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Pharmacognostical Evaluation of different extracts of fruits of *Citrus reticulata* blanco

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The objective of this study was to perform Pharmacognostical evaluation of petroleum ether, chloroform, ethanol, aqueous extracts of fruits of *Citrus reticulata* blanco. Fresh fruits were collected and authenticated. The whole fruit was taken for investigation. These whole fruits were washed and dried in oven under temperature 40^{0}C. All the extracts were prepared by successive extraction method. The phytochemical investigation indicates presence of tannins, phenolics, flavonoids, steroids, glycosides and terpenoids in ethanolic, chloroform and aqueous extracts, in other hand glycoside is absent in petroleum ether extract. This study releals that ethanolic extract of *Citrus reticulata* blanco possessed maximum number of bioactive compounds. The result approves the presence of phytochemical compounds and amount of primary and secondary metabolites in four extracts of whole fruit of *Citrus reticulata* blanco.

Key words: *Citrus reticulata* blanco, petroleum ether, chloroform, ether, extract

INTRODUCTION

C. *reticulata* is a native of China and Cochinchina. It is widely cultivated in all subtropical regions. In India, the areas of concentrated cultivation lie in Assam, Sikkim, Central India, Punjab and Coorg. The principal tracts of cultivation in Assam are Khasi and Jaintia hills and the districts of Cachar and Kamrup, commercial production in central region is centred in Nagpur, Bhandara, Wardha, Chindwara and Amraoti districts. In Punjab, the main areas are Hoshiarpur and Gurdaspur, Five indigenous cultivars are reported in Assam. These are Soh-niamtra, Soh Umkait, Nagasantra, Soh-siem and Kapura tenga, extensively grown all over Assam, Meghalaya and Mizoram. The important orange cultivars cultivated commercially in different parts of India include 'Nagpur orange, Khasi orange', 'Coorg orange', 'Desi orange,' 'Sikkim orange', 'Butwal' and 'Emperor'. Coorg and Khasi seem to be ecological forms of the 'Nagpur'.[1]

Citrus aurantium L., commonly known as sour orange, is used in Brazilian folk medicine and other countries to treat anxiety, insomnia, and as an anticonvulsant suggesting depressive action upon the central nervous system, among other properties. [2]

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Review Article

Sublingual: A Route for Systemic Drug Delivery System

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ABSTRACT

Drug delivery via the oral mucous membrane is considered to be a promising alternative to the oral route. Sublingual route is a rapid onset of action and better patient compliance than orally ingested tablets. Sublingual verbal meaning is "under the tongue", administrating substance via mouth in such a way that the substance is rapidly absorbed via blood vessels under tongue. The proportion of drug absorbed through the sublingual blood vessels bypasses the hepatic first-pass metabolic processes giving acceptable bioavailability. Various techniques are used to formulate the sublingual dosage forms. New sublingual technologies for patient needs enhanced life-cycle management to convenient dosing for geriatric, paediatric and psychiatric patients with dysphagia. This review highlights advantages, disadvantages, different sublingual forms, factors, physicochemical properties of drugs, considerations during sublingual formulation.

Keywords: Sublingual delivery, principle, forms, factors, evaluation, consideration, physicochemical properties, permeability, characteristics of drug.

INTRODUCTION

Sublingual from the Latin for "under the tongue", refers to the pharmacological route of administration by which substances diffuse into the blood through tissues under the tongue. Many drugs are designed for sublingual administration, including cardiovascular drugs, steroids, barbiturates, benzodiazepines, opioid analgesics with poor gastrointestinal bioavailability, enzymes, vitamins and minerals.

PRINCIPLE

When a drugs comes in contact with the mucous membrane below the tongue, it diffuses through it. Because the connective tissue below the epithelium contains a opulence of capillaries, the substance then diffuses into them and enters the venous circulation. In contrast, substances absorbed in the intestines are subject to "first-pass metabolism" in the liver before entering the general circulation. Sublingual administration has positive advantages over oral administration. Being more direct, it is repeatedly faster, and it ensures that the substance will risk degradation only by salivary enzymes before entering the bloodstream, whereas orally administered drugs must survive passage through the inconsistent environment of the gastrointestinal tract, which risks degrading them, either by stomach acid, bile, or by the many enzymes there in, such as monoamine oxidase (MAO). In addition, after absorption from the gastrointestinal tract, such drugs must pass to the liver, where they may be largely altered; this is known as the first pass effect of drug metabolism. Due to the digestive activity of the stomach and intestines and the solubility of the GI tract, the oral route is unsuitable for certain substances, such as salvinorin A.

FORMS

Pharmaceutical preparations for sublingual administration are manufactured in the form of:

- Sublingual tablets—tablets which handily dissolve in the mouth, dissolve rapidly and with little or no residue. Nitroglycerine tablets are an example, the anti-emetic ondansetron is another.
- Sublingual strips—similar to tablets in that they handily melt in the mouth and dissolve rapidly. Suboxone is an example of medication that comes in a sublingual strip.
- Multi-Purpose Tablets—Soluble tablets for either oral or sublingual (or buccal) administration, frequently also suitable for preparation of injections, Hydrostat (hydromorphone) and a number of brands of morphine tablets and cubes.

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Review Article

Effervescent Floating Drug Delivery System

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ABSTRACT

Effervescent floating drug delivery systems release gas CO_2, thus reduce the density of the system and remain buoyant in the stomach 2 for a prolonged period of time and released the drug slowly at a desired rate so it can be used to prolong the gastric residence time in order to improve the bioavailability of drug. In the present article we will discuss in detail about effervescent agent and mechanism of effervescent floating drug delivery system.

Keywords: Effervescent system, floating drug delivery system, effervescent agent, floating time.

INTRODUCTION[1, 2]

The floating drug delivery system is a useful approach to avoid variability. Floating drug delivery systems are low-density systems that have able to keep the float over the gastric fluid and remain buoyant in the stomach without affecting the gastric emptying rate for a prolonged period of time. This system faced to a several difficulties in designing control drug delivery system for better absorption and increasing bioavailability. The floating system is allow to float on the gastric fluid, the drug is released slowly from the system for the prolong duration of action.

Classification of floating system

1) Single Unit Floating Dosage Systems
   a) Effervescent system or gas generating system
   b) Non-effervescent Systems
2) Multiple Unit Floating Dosage Systems
   a) Effervescent Systems
   b) Non-effervescent Systems
   c) Hollow microspheres
3) Raft forming system

Effervescent system or gas generating system[3]

This is buoyant delivery system prepared with the help of low density polymer, and effervescent compound, e.g. sodium bicarbonate, tartaric acid, and citric acid. This system utilized effervescent reaction when the drug is coming in contact with the gastric fluid, due to carbon dioxide gas is generated from the system, when the fluid penetrates into the tablet, and tablet gets starts to float. The concept of floating tablets is mainly based on the matrix type drug delivery system such that the drug remains embedded in the matrix system in which the drug is released without disintegration of the tablet. The Effervescent floating tablets can be used as sustain release dosage form to overcome some problems associated with conventional dosage forms. This also reduces fluctuations of drug concentration and enhances the bioavailability of drug.

Effervescence floating drug delivery system means release of carbon dioxide gas due to reaction of acids and bicarbonates, e.g. of acids are citric acid, tartaric acid, and fumaric acid and e.g. of bicarbonate/carbonate are sodium bicarbonate, calcium carbonate, sodium carbonate and potassium carbonate. This reaction occurs in presence of water, water is act as a catalyzing agent it is used in small amount, which increases the rate of reaction. The development of effervescent floating drug delivery systems is reduced the density of the system and the dosage form is allow to float on gastric content for a prolonged period of time which released the drug slowly at a desired rate. So it is possible to prolong the gastric residence time of drug using effervescent floating drug delivery systems or hydro dynamically balanced system.

These effervescent formulations generally include an agent which are capable of releasing

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Review Article

A Review on Sustained Release Microshere

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ABSTRACT

Microspheres are characteristically free flowing powders having particle size ranging from 1-1000 µm consisting of proteins or synthetic polymers. The range of Techniques for the preparation of microspheres offers a Variety of opportunities to control aspects of drug administration and enhance the therapeutic efficacy of a given drug. The approach is using microspheres as carriers for drugs also known as microparticles. Such a dosage forms having a major advantage of patient compliance. Sustained release dosage forms are designed to release a drug at a predetermined rate in order to maintain a constant drug concentration for a specific period of time with minimum side effects. It is the reliable means to deliver the drug to the target site with specificity, if modified, and to maintain the desired concentration at the site of interest. Microspheres received much attention not only for prolonged release, but also for targeting of at side of effect. In future by combining various other strategies, microspheres will find the central place in novel drug delivery, particularly in diseased cell sorting, diagnostics, Safe targeted and effective in vivo delivery and supplements as miniature versions of diseased organ and tissues in the body.

Keywords: Sustained Release Drug Delivery System, Types, Method of Preparation and Evaluation of Microsphere.

INTRODUCTION

Drug delivery systems (DDS) that can precisely control the release rates or target drug to a specific body site have had an enormous impact on the health care system. The last two decades there has been a remarkable improvement in the field of novel drug delivery systems. Carrier technology offers an intelligent approach for drug delivery by coupling the drug to a carrier particle such as microspheres, nanoparticles, liposomes, etc. which modulates the release and absorption characteristics of the drug. Microspheres constitute an important part of these particulate DDS by virtue of their small size and efficient carrier characteristics.

Ion gelation technique is one of the several methods that is used for production of microspheres. Although this way may not be the main method, but it is the simplest one that several variables can affect the outcome, as well.[1, 2]

Sustained release microspheres may be produced by several methods utilizing emulsion system (oil-in-water, oil-in-oil, water-in-oil-in-water), as well as by spray drying. The common emulsion system used oil-in-water (o/w), with microspheres being produced by the emulsion solvent evaporation method. This relatively simple method enables the entrapment of a wide range of hydrophobic drugs.[3]

TYPES OF MICROSPHERE[4]

Bioadhesive Microspheres - Adhesion can be defined as sticking of drug to the membrane by using the sticking property of the water soluble polymers. Adhesion of drug delivery device to the mucosal membrane such as buccal, ocular, rectal, nasal etc can be termed as bio adhesion. These kinds of microspheres exhibit a prolonged residence time at the site of application and causes intimate contact with the absorption site and produces better therapeutic action.

Magnetic Microspheres - This kind of delivery system is very much important which localises the drug to the disease site. In this larger amount of freely circulating drug can be replaced by smaller amount of magnetically targeted drug. Magnetic carriers receive magnetic responses to a magnetic field from incorporated materials that are used for magnetic microspheres are chitosan, dextran etc.

Floating Microspheres - In floating types the bulk density is less than the gastric fluid and so

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Research Article

Formulation and In-Vitro Evaluation of Leflunomide Tablet with Enhanced Dissolution

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ABSTRACT

Leflunomide is a pyrimidine synthesis inhibitor belonging to the DMARD (Disease-Modifying Anti-rheumatic Drug) used in pain management associated with rheumatoid arthritis, which shows its maximum effects during morning hours. It is practically insoluble in water, so in turn showing slow dissolution pattern. The aim of this study is to enhance the solubility and dissolution rate of leflunomide by solid dispersion techniques. This is achieved by using different hydrophilic polymers at different ratios such as sodium laurayl sulfate (SLS), urea, gaur gum and polyethelenglycol 4000 (PEG 4000) at different ratios i.e. (1:2), (1:4), (1:6) and (1:8) drug:carrier at one dose 20 mg of leflunomide. The study shows all used carriers (gaur gum, S.L.S, urea and PEG 4000) increased the solubility and the dissolution rate of leflunomide. IR spectroscopy and DSC techniques obviate that all the used carriers are physically compatible with leflunomide. The following formulae: F1, F2, F3 and F4 were selected. These selected formulae were used to prepare leflunomide tablets by direct compression technique. All the prepared leflunomide tablets complied with the pharmacopieal requirements for uniformity of drug content and disintegration time. The release kinetics of leflunomide from solid dispersion formulae & the prepared tablets were evaluated by employing the Korsmeyer peppa's equation.

Keywords: Leflunomide, gaur gum, urea, PEG4000, sodium laurayl sulfate, solid dispersion, enhanced dissolution.

INTRODUCTION

The number of sparingly soluble active pharmaceutical materials has risen sharply in recent years, and the formulation of such entities presents greater challenges to industrial pharmacists. Along with other factors, solubility of active pharmaceutical materials is a key determinant of its oral bioavailability.[1] Solid dispersion (SD) is one of the most promising approaches for solubility enhancement. The term solid dispersion refers to a group of solid products consisting of at least two different components, generally a hydrophilic matrix and a hydrophobic drug. The matrix can be either crystalline or amorphous. Solid dispersion can be prepared by various methods such as solvent evaporation, complexation and fusion methods.[1] The mechanisms by which the solubility and dissolution rate of the drug is increased are, firstly, the particle size of a drug is reduced to submicron size or to molecular size in the case where the solid solution is obtained. The particle size reduction generally increases the rate of dissolution; secondly, the drug is changed from crystalline to amorphous form, the high energetic state which is highly soluble; finally, the wettability of the particle is improved by the dissolved carrier.[2] Leflunomide is a pyrimidine synthesis inhibitor belonging to the DMARD (disease-modifying anti-rheumatic drug) used in pain management associated with rheumatoid arthritis, which shows its maximum effects during morning hours. It is practically insoluble in water.

MATERIAL AND METHOD

Leflunomide, Gaur gum, Urea, Sodium lauryl sulfate (SLS), Urea, Methanol and Hydrochloric acid were supplied from Arati Pharmaceutical, Mumbai. Poly ethylene glycol 4000 was supplied from S.D.Fine chemicals, Mumbai.

SOLUBILITY STUDY OF LEFLUNOMIDE IN DIFFERENT RATIOS OF CARRIERS

An excess amount of leflunomide was added to 25 ml of 0.1 N HCL solution having different ratios of S.L.S, urea, Gaur gum, Urea& PEG 4000 in stoppered conical flasks. The samples

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Research Article

Formulation and Evaluation of Herbal Lipstick by Using *Bixa Orellana* as Colouring Pigment

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ABSTRACT

Annatto is an orange-red condiment and food coloring derived from the seeds of the achiote tree (*Bixa orellana*). It is often used to impart a yellow or orange color to foods, but sometimes also for its flavor and aroma. Its scent is described as "slightly peppery with a hint of nutmeg" and flavor as "slightly nutty, sweet and peppery". Herbal word is a symbol of safety in contrast to synthetic one which has adverse effects on human health. Herbal preparations like herbal tablets, herbal tonic, herbal paste, herbal creams, herbal shampoos and herbal lipstick etc have become more popular among the consumer. Herbal medicines represent the fastest growing segment to heal the various ailments. Colouring the skin particularly skin of face or lips is an ancient practice going back to prehistoric period. In present days the use of such products has increased and choice of shades of color, texture and luster have been changed and become wider. This can be observed from the fact that lipsticks are marketed in hundreds of shades of colours to satisfy the demand of women. The present investigation was done to formulate herbal lipstick, since lipsticks are one of the key cosmetics to be used by the women. Attempt was also made to evaluate the formulated herbal lipstick. Due to various adverse effects of available synthetic preparation the present work was conceived by us to formulate a herbal lipstick having minimal or no side effects.

Keywords: Herbal Cosmetics, Castor oil, Paraffin wax, Bixa (Annatto), Bees wax, Shikakai.

INTRODUCTION

Cosmetics are substances used to enhance the appearance of the human body. Cosmetics include skin-care creams, lotions, powders, perfumes, lipsticks, fingernail and toe nail polish, eye and facial makeup, permanent waves, colored contact lenses, hair colors, hair sprays and gels, deodorants, baby products, bath oils, bubble baths, bath salts, butters and many other types of products are in great demand in both developing and developed countries [1].

The word herbal is a symbol of safety in contrast to the synthetic one which has adverse effects on human health. Herbal preparations viz., herbal tablets, herbal tonics, herbal paste, herbal shampoo, herbal sindur, herbal contraceptives and herbal lipstick has become popular among the consumer herbal medicines represent the fastest growing segment to heal the various ailments. Possibly, herbal user desire to assume control over health care needs. Perhaps the large in personal healthcare system is unpatable to many and they turn to herbal medicine due to increase side effects of available synthetic preparations [2-3].

Herbal cosmetics have growing demand in the world market and are an invaluable gift of nature. There are a wide range of herbal cosmetics products to satisfy your beauty regime, adding herbal in cosmetic is very safe for skin. Human being have been using herbs for different purpose like food, medicine, beatifying with advancement of science & technology use of natural things including plant has been reduced except for food, vegetarian takes plant& plant only. However there is resurgence of use of herbs both as drug and cosmetics [4].

Coloring lips in an ancient practice date back to prehistoric period. In present days the use of product has increased and choice of shades of colors textures, lustrous, have been changed and become wider. This can observed from the

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ANTHELMINTIC ACTIVITY OF CAESALPINIA CRISTA (LINN) LEAVES AGAINST PHERITUMA POSTHUMA

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ABSTRACT

In this study leaves of *Caesalpinia Crista* were evaluated for anthelmintic activity on adult Indian earthworms *Pheretima Posthuma*. The leaves powder of *Caesalpinia Crista* was subjected to successive extraction in a Soxhlet apparatus using solvents like Pet. ether, chloroform, alcohol and water. Four concentrations (10, 25, 50 and 100 mg / ml) of different extract of leaves were studied in a bioassay, which involved the determination of time of paralysis and time of death of the worms using Piperazine citrate as reference standard. The results indicated that 100 mg/ml concentration of *Caesalpinia Crista* leaves was more significant than that of other concentration.

KEYWORDS: *Caesalpinia Crista*, Anthelmintic activity, *Pheretima Posthuma*, Extract etc.

INTRODUCTION

Caesalpinia Crista of family Febaceae is a prickly shrub or woody vine reaching a length of 10 m or more also known as Sagargoti (Marathi).[1] Leaves are bi-pinnate, often nearly 1 m long, with the rachis armed with stout, sharp, recurved spines. The leaflets also number 10 pairs and are oblong, 2 to 5 cm long and somewhat hairy. The Flowers are yellow, borne in axillary, simple or panicled raceme and about 1 cm long. The fruits are pods, oblong 5 to 7 cm in length, inflated and covered with slender spines and contain one or two seeds. The seeds are large, somewhat rounded or ovoid, hairy, grey and shiny. The famous utility in Satpuda region among the Aadivasi people is anthelmintic.[2]

The other mentioned utility are the seeds sometimes used in necklaces are considered febrifugal, periodic, tonic, and vesicant. They are used to treat colic, convulsions, leprosy, and palsy. The oil from the seeds is said to soften the skin and remove pimples. The bark is antiperiodic rubefacient and plant to counteract toothache. A leaf decoction is as collyrium.[3]

The literature has revealed that seeds and leaves of plant contain around fourteen compounds. The isolated compounds are cassane-and norcassane-type diterpenes. The stem part and root part constituents two novel peltogynoids, pulcherrimin and 6-methoxypulcherrimin, one

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A RESEARCH ON FORMULATION AND EVALUATION OF MICROSPONGE LOADED IN TOPICAL GEL OF RITONAVIR

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ABSTRACT

Ritonavir inhibits the HIV protease enzyme by forming an inhibitor–enzyme complex thereby preventing cleavage of the gag- pol polyproteins. Present study was taken up to develop a topical formulation that releases the drug in controlled manner, reduce the side effects associated with topical drug delivery and improve product efficiency with aid of microsponges. Microsponges loaded with Ritonavir were prepared by using Emulsion solvent diffusion with nine different proportions of polymer. The developed microsponges were analyzed for particle size, production yield, entrapment efficiency and drug content. Scanning electron microscopic images of microsponges revealed that they are spherical in shape and contain pores. In vitro drug release results depicted that microsponges with third formulation were more efficient to give extended drug release of 50.32% at the end of 10 hrs. Microsponge were then incorporated in to 1% carbopol gel and evaluated for pH, viscosity, spreadability and diffusion study. Thus the formulated microsponges based gel of Ritonavir would be a promising alternative to conventional therapy for safer and efficient treatment of various skin disorders.

KEYWORDS: Microsponges, Ritonavir, Carbopol 940, Topical drug delivery system, Controlled drug release, Drug content.

INTRODUCTION

Over the last decades the treatment of illness has been accomplished by administrating drug to human body via various routes namely oral, sublingual, topical, inhalation etc. Topical delivery can be defined as the application of drug containing formulation to the skin to

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Review Article

REVIEW: CHOCOLATE FORMULATION AS DRUG DELIVERY SYSTEM

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ABSTRACT

Chocolate/cocoa has been known for its good taste and proposed health effects for centuries. Most of the drugs are bitter due to which oral administration of these drugs leads to patient incompliance especially in children. To overcome this limitation, it is advisable to formulate dosage form, which is most acceptable for paediatric patients. Chocolate is one of the most palatable and favourite in children, so we have developed chocolate drug delivery system. Chocolate tastes good; it stimulates endorphin production, which gives a feeling of pleasure. It contains serotonin, which acts as an anti-depressant. It contains theobromine, caffeine and other substances, which are stimulants. Cocoa can also protect nerves from injury and inflammation, protect the skin from oxidative damage from UV radiation in topical preparations, and have beneficial effects on satiety, cognitive function, and mood. Medicated chocolate is prepared by using chocolate base and drug is incorporated to prepared chocolate base. The medicated chocolate can be evaluated for its appearance, moisture content, viscosity, blooming test, drug content determination and in vitro drug release. This review paper focused on health importance and usage of medicated as well as conventional chocolates.

KEY WORDS: Medicated Chocolate, Cocoa, Paediatrics, Chocolate Formulation.

INTRODUCTION

Chocolate is highly sophisticated and much infinitely adaptable food that can be combined to create completely different taste and consistency sensations. Chocolate is an anhydrous medium resistant to microbial growth and hydrolysis for water-sensitive active agents. Chocolate abundantly contains compounds such as saturated fat, polyphenols, sterols, di and triterpenes, aliphatic alcohols, methylxanthines flavones, antioxidants Cocoa is the main ingredient of chocolate and it is loaded Chocolate in polyphenols. Chocolate containing the drug in suitable quantity is known as medicated chocolate. There are four types of taste modalities, salty, sour, bitter, sweet through the combination of these elements we can detect the "flavours" Children's tastes sensation is much differed than adult infants and more over children prefer sweet-tasting substance. Chocolate have been shown to help our body produce chemical known as "Serotonin". It makes feel relaxed. Further chocolate is also having some advantages like quick onset of action, reduction in the drug dose of manufacture and scale, increases drug loading capacity. Some drugs are bitter in taste due to which oral administration of bitter drugs leads to patient incompliance especially in children. To overcome this limitation, it is advisable to formulate dosage form, which is most acceptable for paediatric patients. Chocolate is one of the most palatable and favourite in children, so we have developed chocolate drug delivery system. Chocolate (in some regions also named bittersweet chocolate, semi-sweet chocolate, dark chocolate or "chocolate fondant") shall contain, on a dry

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Research Article

Selective Antimicrobial Properties of Phyllanthus acidus Leaf Extract against Escherichia Coli, Aspergillus flavus and Aspergillus niger

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ABSTRACT

Various medicinal plants have been used for years in daily life to treat disease all over the world. In this project study focus the antimicrobial activity of *phyllanthus acidus* leaf extracts obtained from the village of lonkheda. The antibacterial and antifungal activities of *Phyllanthus acidus* was investigated against *Staphylococcus aureus* (gram+ve), *Escherichia coli* (gram-ve) and *Asperagillusnigra, Asparagillusflavus* using the Well diffusion method. The solvent type extracts were obtained by extractions with water and n- butanol respectively. The solvents were used as control whereas ampicillin were used as references for bacteria and fungal species respectively. The solvents had the effect on the microorganisms *Escherichia coli* and *Staphylococcus aureus* and had no effect on fungi.(*Asperagillusflavus and Aspergillusniger*) whereas ampicillin inhibited microbial growth. This study suggests that the n-butanol extracts of Phyllanthusacidus, can be used as herbal medicines in the control of *Escherichiacoli* and *Staphylococcus aureus* following clinical trials.

Keywords: Antimicrobial activity, Phyllanthus acidus, Bacteria, Fungi.

INTRODUCTION

Nature has been a source of medicinal agents for thousands of years and an impressive number of modern drugs have been isolated from natural source. Interest towards traditional natural products has increased on a larger scale. In the traditional system of Ayurvedic treatment, a medicine consisting of plant products either single or in combination with others are considered to be less toxic and free from side effects when compared to synthetic drugs.Phyllanthus acidus is commonly known as gooseberry. It is quite a common tree found in the tropics and belongs to the plant family euphorbiaceae. This project discusses the antimicrobiological (antibacterial and antifungal) activity of leaves of Phyllanthus acidus also known as gooseberry.and obtain from the village of lonkheda and its possible use as cream / medicine. Its antimicrobial properties were investigated against Escherichia coli (gram-ve), Staphylococcus aureus (gram+ve), Aspergillus flavus and Aspergillus niger. By using Well diffusion method. An antimicrobial is a compound that kills or inhibits the growth of microbes such as bacteria (antibacterial activity), fungi (antifungal activity), viruses (antiviral activity) or parasites (antiparasitic activity).

METHOD OF EXTRACTION

Leaves of *Phyllanthus. Acidus* were collected in village of lonkheda.the 250 gm of Fresh leaves were simmered at 60°C for 3 h in 500ml water. The clear solution of the extract was simmered at 50°C to reduce its volume to 50%, followed by partition extraction with water-saturated *n*-butanol. The *n*-butanol phase was collected and then carried out further microbial assay.

Serial no.	Sample Code	E.coli	S.aureus
1	Standard	24.65	26.35
2	n-Butanol	10.27	11.47
3	Undiluted sample	18.22	10.83
4	0.1%diluted sample	12.42	10.56
5	1.0%diluted sample	9.37	10.38
6	1.5%diluted sample	10.63	10.85
7	2.0%diluted sample	11.55	9.75

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MICROWAVE ASSISTED EXTRACTION OF TANNINS FROM HARDA

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ABSTRACT

The study was aimed to investigate the use of microwave assisted extraction (MAE) to improve the extraction efficiency of the Polyphones from crude drugs. Classical solvent extraction techniques have several limitation especially low yield and time consumption; hence the present study was designed to provide an effective alternative method of extraction which can be adopted at industrial level. In this study poly-phenol were extracted from Harda (*Terminalia chebula*) using Soxhlet and microwave apparatus, and effectiveness of the both process was evaluated by determining tannin concentration. The method selected for tannin estimation was Folien-ciocalteu method. Result of the study clearly demonstrated that microwave is better method. Study had also undertaken the task of optimization of parameters such as solvent type, microwave power, extraction time and temperature. Results had revealed that the best possible combination parameter for fast and highest extraction by this method was found to be 2 Power of microwave, 50°C temperature, 4 min. time and alcohol as solvent.

KEYWORDS: Microwave, Soxhlet extraction, Phenolic compound, Extraction time, optimized method.

INTRODUCTION

Medicinal plants and its extracts are gaining much interest recently because their use in ethno medicine treating common disease; and tannins is one of them. Development of extracts is the major hurdle as conventional methods are having many limitations such as low yield, time consumption, excessive use of solvents, and many more[1]. Hence there is need to implement new methods of extraction for herbals to get better yield, low usage of solvent and reduction of time. The present investigation is an attempt to implement microwave extraction protocol for extraction of tannins from Harda (*Terminalia chebula* of family Combretaceae).

Microwave-assisted extraction (MAE) or simply microwave extraction is relatively recent extraction technique started in 1980. It combines microwave and traditional solvent extraction and selectively used to extract target compounds from various raw materials.[2] The method uses microwave, a high frequency radio waves (radiofrequency fields) are used primarily for TV

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"A Review on Solubility Enhancement of Poorly Water Soluble Drug by Solid Dispersion Technique"

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Abstract— Atorvastatin calcium (ATC) is an oral anticholesteremic operator. ATC has a place to BCS class II medicate having high porousness however low watery solubility. Keeping in mind the end goal to get valuable helpful impacts, its water solubility needs to be expanded. In the present examination, endeavor was made to progress solubility and dissolution rate of ATC by planning it into solid dispersion utilizing characteristic polymer maltose monohydrate as a profoundly water dissolvable bearer. Three strategies were utilized for getting ready solid dispersion, to be specific, physical mixture, kneading and dissolvable dissipation strategy in 1:1, 1:2 and 1:3 drugcarrier proportions. The FTIR investigation of ATC, its mix with the bearer, and of the sold dispersion showed no communication between medication, bearer and other excipients utilized. The readied solid dispersion demonstrated enhanced solubility and dissolution rate when contrasted with unadulterated medication. The change in solubility might be credited to the enhanced wettability of ATC because of uniform dispersion into the transporter. The improved batch was K2, which was readied by working technique in 1:3 proportions. The improved batch discharged 99.59 % sedate inside 60 min and had solubility very nearly five folds higher than unadulterated ATC.

From the solubility esteems plainly plying strategy was more appropriate than the other two techniques utilized for getting ready solid dispersion. The XRD contemplates uncovered that the crystalline idea of ATC was lessened when defined into solid dispersion. The enhanced batch of solid dispersion was decided for defining quick discharge tablet into three batches by coordinate pressure technique by shifting the centralization of superdisintegrant, crosscarmellose sodium. Tablet arranged with 20% cross carmellose sodium indicated 99.41% medication discharge in 60 min, this medication discharge was higher contrasted with the other two batches of tablet arranged..

Keywords— Atorvastatin calcium (ATC), Maltose monohydrate, Solid dispersion, Solubility and Dissolution.

I. INTRODUCTION

Together with the porousness, the solubility conduct of a medication is a key determinant of its oral bioavailability. There have been constantly sure medications for which solubility has displayed a test to the improvement of a reasonable plan for oral organization. Illustrations, for example, griseo fulvin, digoxin, phenytoin, sulphathiazole and chloramphenicol come quickly to mind. With the ongoing approach of high throughput screening of potential remedial operators, the quantity of inadequately dissolvable medication candidates has risen strongly and the definition of ineffectively solvent mixes for oral conveyance currently exhibits a standout amongst the most continuous and most prominent difficulties

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A RESEARCH ON DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR ESTIMATION OF METOLAZONE IN TABLET DOSAGE FORM

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ABSTRACT

The aim of this research work was to develop simple, precise and rapid RP-HPLC methods for analysis of Metolazone in tablet dosage form. A rapid and reliable RP-HPLC method was developed and validated for estimation of Metolazone in tablet dosage form. The RP-HPLC method was perform Intelligent C 18 Grace (Torrance, CA) C_{18} (250mmX 4.6mm,5µm) 5µm particle size in isocratic mode, and the sample was analyzed using Methanol 85 ml and water 20=15ml (85M+15(0.05%OPA) 240NM) as a mobile phase at a flow rate of 0.8ml/min and detection at 240nm. By The retention time for Metolazone were found to be 4.1833min. The method was applied to marketed tablet formulations. The Tablet assay was performed for this was validated for accuracy, precision, linearity, specificity and sensitivity in accordance with ICH guidelines. Validation revealed the method is specific, rapid, accurate, precise, reliable, and reproducible. Calibration plots were linear over the 10-40 µg/ml for Metolazone and recoveries from Tablet dosage form were between 98 and 102%. The method can be used for routine of the quality control in pharmaceuticals. The UV-Spectrophotometric method was found to be simple, economical and rapid as compared to RP-HPLC. But, RP-HPLC method was found to be more accurate, precise, and robust. So these methods can be used for routine analysis of Metolazone in tablet dosage form.

KEYWORDS: Metolazone, RP-HPLC, Validation, Tablet.

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SYNTHESIS, CHARACTERIZATION AND ANTI-TUBERCULAR SCREENING OF SOME SUBSTITUTED 5-ETHOXY BENZIMIDAZOLE DERIVATIVES

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ABSTRACT

Benzimidazole derivatives are very useful compound with well known biological activity. Notable among these are antimicrobial, anti-tubercular, antimalarial, anti-inflammatory, anticancer, antiviral, antiprotozoal, antihistaminic, antioxidant and anthelmintic actions.. In the current research work, the title compounds 5-ethoxy-2-substituted benzimidazole, were synthesized by nitration of phenacetin with concentrated nitric acid it gives N-(2-nitro-5-ethoxyphenyl) acetamide (I). Compound (I) on reduction with alcohol gives 5-ethoxy-2-nitroaniline (II). Reaction of compound (II) with hydrazine hydrate produced 5-ethoxy ortho phenylene diamine(III). The reaction of compounds (III) with substituted acids yielded the corresponding 5 ethoxy-2-substituted benzimidazole (IV). The identification and characterization of the synthesized compounds were carried out by Elemental analysis, melting point, Thin Layer Chromatography, FT-IR, NMR and Mass data to ascertain that all synthesized compounds were of different chemical nature than the respective parent compound. The compounds were screened out for anti-tubercular activity. The anti-tubercular activity of compounds were done by using Microplate Alamar Blue Assay (MABA). The test compounds IVa, IVb and IVc showed significant anti-tubercular activity against $H_{37}R_V$ strain of *Mycobacterium tuberculosis*. The minimum inhibitory concentration (MIC) values were found in the range of 0.8 to 12.5 µg/ml compared with the standard drugs Pyrazinamide, Streptomycin and Ciprofloxacin.

KEYWORDS: Anti-tubercular activity, *Mycobacterium tuberculosis*, Benzimidazole, Pyrazinamide, Streptomycin, Ciprofloxacin.

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Research Article

Formulation and Evaluation of Herbal Shampoo Powder

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ABSTRACT

The shampoo sector is probably the largest unit sale among the hair care products since shampoos are one of the cosmetic products used in daily life. Synthetic preservatives and detergents have sometimes been the cause of adverse effects among consumer. A more radical approach in reducing the synthetic ingredients is by incorporating natural extracts whose functionality is comparable with their synthetic ingredients. A shampoo is a cleaning aid for the hair and is counted among the foremost beauty products. Today's shampoo formulations are beyond the stage of pure cleaning of the hair. Additional benefits are expected, e.g. conditioning, smoothing of the hair surface, good health of hair, e.g. hair free of dandruff, dirt, grease and lice and, above all, it is safety benefits are expected. As the scalp is one of the most absorbent part of the body, product applied to the scalp go directly to the blood, without being filtered in any way. In the scenario of changing food habits, stress level and dependent environment conditions, numbers of skin and hair disorder are encountered. Ths herbal shampoo was formulated using natural ingredient like ***Azadirachta indica*** **(neem),** ***Acacia concinna*** **(shikakai),** ***Spindus mokorossi*** **(reetha),** ***ocimumsanctum*** **(Tulsi),** ***Aloevera*** **(aloe),** ***Embelicaofficinlis*** **(amla),** ***lawsonia inerms*** **(Henna),** ***Terminalia chebula*** **(harda),** ***Terminalia balerica*** **(bahera),** ***centlla asiatica*** **(brahmi)** with proven efficacy of hair care preparation is prepared. The combination of several such ingredient of herbal origin has made it possible to secure highly effective dry powder shampoo. The formulation at laboratory scale was done and evaluated for number of parameters to ensure its safety and efficacy.

Keywords: Herbal, Shampoo, Neem, Harda, Shikakaki, Evaluation, Standardization.

INTRODUCTION

Hairs are the integral part of human beauty. People are using herbs for cleaning, beautifying and managing hair since the ancient era. As the time has passed synthetic agents have taken a large share but today people are getting aware of their harmful effects on hairs skin and eyes. These regions attracted to community towards the herbal products, which are less expensive and have negligible side effects. Hair cleansers or shampoos are used not only for cleansing purpose but also for imparting gloss to hair and to maintain their manageability and oiliness for hairs[1].

Shampoos are of various types, like powder shampoo, clear liquid shampoo liquid shampoo, lotion shampoo, solid gel shampoo, medicated shampoo, liquid herbal shampoo etc. As far as herbal shampoos are concerned in stability criteria. Depending upon the nature of the ingredients they may be simple or plain shampoo, antiseptic or antidandruff shampoo and nutritional shampoo containing vitamin, amino acids proteins hydrolysate.[2]

IDEAL CHARACTERS OF SHAMPOO[3]

1. *Should effectively and completely* remove the dust, excessive sebum.
2. Should effectively wash hair.
3. Should product a good amount of foam
4. The shampoo should be easily removed by rinsing with water.
5. Should leave the hair non dry, soft, lustrous with good, manageability
6. Should impart a pleasant fragrance to the hair.
7. Should not make the hand rough and chapped.
8. Should not have any side effects or cause irritation to skin or eye.

COMPOSITION OF SHAMPOO[3]

1. Surfactant.
2. Antidandruff agent

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Research Article

Formulation of Niosomal Gel of Aceclofenac and its *in-vitro* Characterization

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ABSTRACT

Niosomes are essentially non-ionic surfactant-based multilamellar or unilamellar vesicles in which an aqueous solution of solute is entirely enclosed by a membrane resulting from the organization of surfactant macromolecules as bilayer. The bilayer structure of niosomes being amphiphillic in nature can be used to deliver hydrophilic drugs in its aqueous core and lipophilic drugs in the bilayer made up of surfactants. Each of the prepared Niosomes significantly improved drug permeation. Niosomes prepared with Span 60 provided a higher permeation across the skin than that of span 20 and Span20:Span60 combination ratio. Changes in the cholesterol content affect the encapsulation efficiency and permeation of gel. The encapsulation (%) of Niosomes with Span 60 surfactant showed a very high value of ~100% due to its low surface energy decreases the size of vesicle and drug permeation increases. It can be reasonably concluded that Niosomal gel using span 60 is better suited for controlled release of Aceclofenac.

Keywords: Niosomes, aceclofenac, Transdermal drug delivery, span 60, *In-vitro* permeation.

INTRODUCTION

At present, the most common form of delivery of drugs is the oral route. While this has the notable advantage of easy administration, it also has significant drawbacks namely poor bioavailability due to hepatic metabolism (first pass) and the tendency to produce rapid blood level spikes (both high and low), leading to a need for high and/or frequent dosing, which can be both cost prohibitive and inconvenient. To overcome these difficulties there is a need for the development of new drug delivery system; which will improve the therapeutic efficacy and safety of drugs. The topical administration of drugs for the local treatment of skin diseases has been used for a long time, but the use of transdermal delivery for the systemic action is relatively new and increasingly used. The rapid development of transdermal delivery formulations in the last few years is due to certain unique advantages of transdermal administration. Now a day's vesicles as a carrier system have become the vehicle of choice in drug delivery and lipid vesicles are found to be of value in immunology, membrane biology and diagnostic technique and most recently in genetic engineering. Vesicular system has achieved new heights during the last few years as an essential component of drug development.[4]

Niosome

Niosomes are a novel drug delivery system, in which the medication is encapsulated in a vesicle. The vesicle is composed of a bilayer of non-ionic surface active agents and hence the name niosome. The niosome are very small, and microscopic in size. Their size lies in the nanometric scale. Although structurally similar to liposomes, they offer several advantages over them. Niosome have recently been shown to greatly increase transdermal drug delivery and also can be used in targeted drug delivery.[1]

MATERIAL AND METHOD

Aceclofenac was obtained as gift sample from Ajanta Pharma (Bharuch, India), Span20, Span60 were Obtain from Research lab. (Mumbai, India) and Cholesterol, chloroform and carbopol were from Himedia laboratories (Mumbai, India).

Niosomal Gel of Aceclofenac[4]

Preparation of Drug Loaded Niosome

Aceclofenac loaded niosomes were formulated by using thin film hydration technique and the different nonionic surfactants (span 20 and

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A REVIEW ON METHOD DEVELOPMENT AND VALIDATION OF HPLC METHOD

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ABSTRACT

Validation of an analytical procedure is to demonstrate that it is suitable for its intended purpose. Chromatographic methods play significant role in the pharmaceutical industry from the drug discovery, development, formulations and quality control. These methods are essential for a number of purposes, including testing for quality control release, testing of stability samples, testing of reference materials and to provide data to support specifications. A validated analytical method ensures that it provides consistent, reliable and accurate data. So these methods help pharmaceutical analyst to ensure quality products are released for market. This review describes general approach towards validation process and validation parameters to be considered during validation of a HPLC method. It also refers to various regulatory requirements. The parameters described here are according to ICH guidelines and include accuracy, precision, specificity and limit of detection, limit of quantitation, linearity, range and robustness.

INTRODUCTION

Analytic method development and validation are key elements of any pharmaceutical development program. HPLC analysis method is developed to identify, quantity or purifying compounds of interest. This technical brief will focus on development and validation activities as applied to drug products.

1. Method development

- Effective method development ensures that laboratory resources are optimized, while methods meet the objectives required at each stage of drug development. Method validation

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ANTHELMINTIC SCREENING OF *BENINCASA HISPIDA* (THUNB.) FRUIT AGAINST *PHERITUMA POSTHUMA*

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ABSTRACT

In this study fruitof *Benincasahispida* (Thunb.)Cogn. (Cucurbitaceae) have been investigated for anthelmintic properties against *Pheritimapasthuma*(Indian earthworms). The pulverized fruit powder of *Benincasahispida* was subjected to successive extraction in a Soxhlet apparatus using benzene, chloroform, alcohol and water.Three dilutions with concentration of 1.0 mg/ml, 5.0 mg/ml and 10.0 mg/ml of all extracts; standard Piperazine citrate (10 mg/ml) and Control (Normal saline) were screened to record the time taken to paralyse (P) and kill (D) the worms.The worms which were treated with aqueous extract hasshown the significant effect causing paralysis and death of worms at concentration of 100 mg/ml as compared to the standard and control.

KEYWORDS: *Benincasa hispida* Fruit, Anthelmintic activity, *Pheritima pasthuma*.

INTRODUCTION

Benincasa hispida (Thunb.) Cogn. belongs to Cucurbitaceae family.[1] It is called as Winter melon,Ash gourd,Wax gourd,Kondolin English, Kusmandah in Sanskrita,Petha in Hindi,Kohala in Marathi language.[2, 3]The plant is possibly indigenous to Malaysia, now obtained all over the tropics. It is cultivated in India, Burma, Ceylon, and on the hills up to 4,000'. A large annual or biennial trailing gourd climbing by means of tendrils; Fruits broadly cylindric 30-80cm long, hairy throughout, eventually covered with a waxy bloom; Fruit contains numerous white colored embedded seeds. [2, 4, 5]

The fruits are sweet, cooling, styptic, laxative, diuretic, tonic, aphrodisiac and antiperiodic. They are useful in asthma, cough, diabetes, haemoptysis (haemophysis), heamorrhages from internal organs, epilepsy, fever and vitiated conditions of pitta. The seeds are sweet, cooling and anthelmintic, and are useful in dry cough, fever, urethrorrhea, syphilis, hyperdipsia and vitiated conditions of pitta. According to an old Korean medical encyclopedia, the "Donguibogam", the *Benincasa hispida* is effective against diabetes, dropsy, diseases related

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PHARMACOGNOSTICAL AND PHARMACOLOGICAL EVALUATION OF CITRUS RETICULATABLANCO FOR ITS ANXIOLYTIC ACTIVITY

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Abstract: ***The objective of this study was to evaluate anxiolytic activity of aqueous, ethanol, chloroform extracts of fruits of citrus reticulatablanco. The investigation was done using elevated plus maze and light and dark exploration test in mice. Anxiolytic activity was assessed by measuring the time spend in open/closed arms in elevated plus maze and measuring time spent in light/dark compartments in light/dark exploration test for the period of five minutes. Albino Swiss mice of either sex weighing 20-25g received various extracts of test drug with different doses orally. Diazepam (2 mg/kg) was used as a reference standard 30 minutes before the activity. The alcoholic & chloroform extracts test drug exhibited significant (P<0.01) anxiolytic activity at dose 400 mg/kg in elevated plus maze as well as light/dark exploration test.***

KEY WORDS: citrus reticulatablanco, Diazepam, elevated plus maze, light and dark exploration test.

I. INTRODUCTION

Anxiety is psychological disorder characterized by persistent and disproportionate fear unrelated to any genuine risk. Apart from few chemical remedies available like benzodiazepines and serotonin modulators, not much options at hand that could safely and effectively alleviate anxiety. There are so many adverse effects produced by allopathic drugs and patents may produce sedation, light-headness, cognitive impairment, sexual dysfunction and some time may produce drug dependence.(K.D.Tripathi et al, 2009) It was revealed that citrus senesis has demonstrated anxiolytic activity which is other plant of the same family having similar genus; whether fruits of these plants possesses the same activity or not is planned to evaluate. Citrus aurantium L., commonly known as sour orange, is used in Brazilian folk medicine and other countries to treat anxiety, insomnia, and as an anticonvulsant suggesting depressive action upon the central nervous system, among other properties. (Maria Isabel Roth et al, 2002)

II. MATERIAL AND METHODS:

Plants material and extract preparation

The plant has been collected in month of March-April from Paratwada region of Dist-Amarawati (M.H.) and authentication has been obtained from Dept. of Botany, PSGVPM Arts & Science College, Shahada, DistNandurbar (M.H.). Voucher specimens and herbarium sheet is kept in the institute for further references. In one group freshly prepared juice is taken for the investigation whereas in another groups extraction has been done by using successive solvent extraction scheme because we didn't know which constituent of the fruit is responsible to claim anxiolytic activity as it provides all chemicals present in the plant in fraction form. The air dried powdered plant material i.e. whole fruit (50-100 g) was extracted successively with the following solvents of increasing polarity in a Soxhlet extractor: 1 Chloroform 2. Ethanol (K. R. Khandelwal, 2011) The reason behind performing extraction of fruit part is that it contains number of active constituents. (K. M. Nadkarni, 1976) The extracts were tested for the anxiolytic activity by two different methods. The extracts were administered orally in the concentration 100, 200 and 400 mg/kg in elevated plus maze as well as light and dark exploration paradigm method.

Animal

Albino Swiss mice of either sex weighing 20-25 g were housed in group of six under standard laboratory conditions of temperature and 12/12 hour light and dark cycle. They had free access to food and water. All the experiments were conducted at the time from 9.00 to 15.00 hours. Mice were maintained in plastic cages. Animals were deprived of food but not water 12 hour before the experiments. The animals were acclimatized to laboratory condition for not less than 10 days. The employed experimental protocols were as per the ethical principles and guidelines and approved by institutional animal ethical committee constituted for the purpose of control and supervision of experimental animals by ministry of Environmental and Forests, Government of India, New Delhi.

Assessment of anxiolytic activity:

1] Elevated plus maze test: -

Evaluation of anxiolytic activity of extracts of citrus reticulatablanco in mice were assessed by using elevated plus maze (EPM) as described by Pellow et al., 1985. The elevated plus maze for mice (Lister, R. G. 1987) consist of two open arms (37X5) (File S F, Pillow S, 1985) and two enclosed arms (37X5X12) with 12 cm high wall arranged so that the arms of the same type were opposite to each other. The arms were connected with a central square of 5X5 cm. The wooden apparatus was elevated to a height of 25 cm. above the floor. The mice in the groups of six treated with drugs listed earlier and vehicle were placed individually in the center of the EPM facing towards open arm and time spent in open and enclosed arm was recorded for 5 minutes. The ratio of time spent in open verses enclosed arm was calculated. Each animal should be used only once and the test should be carried out during a fixed time of the day. The rationale is that the open arms are more fear-provoking and that the ratio of either time spent on open: closed arms or

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REVIEW ON INTERNET AND SMARTPHONES ADDICTION: SPOILING THE FUTURE OF INDIA

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ABSTRACT

Addiction of the internet and the Smartphones in a young age is an emerging topic for the researchers in worldwide. There is a considerable debate on this topic of addiction in adolescents and its consequent impact on their health. Globally it was found that accessing to the Smartphones and internet had occupied more than 70% of mobile market and assessment frequency to the internet. Despite the progress that has been made in prevention, diagnosis and treatment in this disorder, the field is wide and unexplored, when it comes in a mental health nursing practice. These smartphones and internet addiction has shown their adverse effects on social, professional and academic life of an individual's. Moreover the effects that long hours screen exposure may on physical health, the excessive participation of children and adolescents in online gaming and social networking sites as well as the emergence of a new type of anti-social behaviors expressed by harassment, bullying, cyber crime and online suicides are a new research field in digital age. Considering the globalization and the complexity of internet & smartphones addiction mental health nurses must establish an effective program for the management of the addiction as well as the daily problems that raises such conditions. Within the clinical context of mental health, nurses can have an effective role not only in the assessment, diagnosis and treatment of internet addiction but in the prevention of that phenomenon as well.

KEYWORDS: Internet addiction, Smartphone addiction, problematic internet use, mental health nursing practice, internet & smartphones addiction treatment, children and adolescences health.

1. INTRODUCTION

The Internet and mobile technology are increasingly important to the educational and social lives of adolescents, and are becoming a part of their identity. With the advent of broadband and mobile access to the internet giving young people access to the internet at any place and at any time, and thus 24/7 entertainment, interaction and communication, there is a real risk that adolescents can become so immersed in their online world that it seems to take over their lives. It is easy to see the young people spending many hours pursuing their interests, playing games, finding information and communicating with friends and strangers online. However, when this use becomes obsessive and at the expense of other aspects of a young person's life, this use of the internet could be problematic and could even be classified as Internet addiction.[1]

Internet Addiction, Internet Addiction Disorder, Compulsive Internet Use, Computer Addiction, Internet Dependence and Problematic Internet Use - all of these are inter-changeable terms that have been applied to those that spend excessive amounts of time online at the expense of other aspects of their lives.[1]

However, addiction may not be about the attractiveness of the Internet alone. It is recognized that Internet addiction may also be symptomatic of other problems such as depression, anger and low self-esteem.[2]

Researchers in Taiwan have argued that more than 20 hours per week constitutes Internet addiction. This figure has been echoed in the research conducted in the U.S. and Europe. This is similar to television addiction with the average person watching in the region of 11-13 hours per week and those addicted watching in excess of 21 hours per week. However, time is not the only indicator of problematic Internet use. However, the fact that time is the only indicator of problematic internet use is still debated.[2]

In last few years, number of internet users, both broadband and mobile users has rapidly increased in India and large numbers of them are adolescents. Thus the present study was conducted to assess the prevalence

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REVIEW ON IN SITU GEL A NOVEL NASAL DRUG DELIVERY SYSTEM

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ABSTRACT

The oral route is most preferred and common technique for oral administration of drug in the body, but due to certain limitation such as absorption of drug, hepatic first-pass metabolism, drug targeting to particular organ can cause problem for administration through oral route. To overcome these types of problem as well as for improvement of drug safety and efficiency a novel approach is developed for delivery of drug i.e. In-situ Nasal Drug Delivery System. Nasal route is suitable for those drugs whose oral administration is problematic due to gastric irritation. The present review focused on anatomy of nasal system and criteria required of drug candidate to prepare a gel i.e. In-situ gel. Approaches towards various formulation of in-situ gel with respect to temperature, pH and physiochemical condition. The main role of polymers like Carbopol-934, PEG, Sodium alginate, Poloxamer, Pectin, Cellulose etc. in body, absorption of drug by various methods. The in-situ gel forming polymeric formulations offer several advantages like sustained and prolonged action in comparison to conventional drug delivery systems. Various evaluation parameters which is consider during preparation of in-situ gel.

KEYWORDS: In-situ drug delivery, Polymers, Approaches, Formulation, Evaluation.

INTRODUCTION

Oral drug delivery is the most desirable route for the drug administration. Whenever systemic effects are indented but oral bioavailability of some compounds has promoted the search of more effective route for the systemic delivery. Transmucosal route of drug delivery (i.e. the mucosal lining of the nasal, rectal, vaginal, ocular, oral cavity) nasal mucosa is the major

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FORMULATION AND EVALUATION OF PANTOPRAZOLE SODIUM MICROSPHERES BY USING IONOTROPIC GELATION TECHNIQUE

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ABSTRACT

Microspheres are typically free flow powders consisting of proteins or synthetic polymers which are biodegradable in nature and ideally having a particle size less than 200 µm. microsphere after ball bearing effects because of their spherical shape. The therapeutic efficacy of microspheres contain drug depends upon their characteristics that can be altered in required terms by altering materials, methods, polymers or techniques used. The Microspheres were prepared by Ionotropic gelation method dispersing Pantoprazole sodium separately into mixture of ionic sodium alginate. As primary polymer with oppositely charged ion polymer, namely HPMC and SCMC of both polymer, in to a solution of calcium chloride solution. Microspheres constitute an important part of novel drug delivery system by virture of their small size and efficient carrying capacity. The Micro carrier were evaluate for micrometric properties, production yield, drug loading, and *in vitro* drug release studies. The size of prepared microspheres were in the range of 447.1 to 650.2 µm. The result of this study indicate that HPMC K15M gives fast released pattern of the drug as compare to SCMC.

KEYWORDS Microspheres, Controlled released, Novel drug delivery, Target site, Sodium alginate, Pantoprazole Sodium.

INTRODUCTION

Drug delivery systems (DDS) that can precisely control the release rates or target drug to a specific body site have had an enormous impact on the health care system. The last two decades there has been a remarkable improvement in the field of novel drug delivery systems. Carrier technology offers an intelligent approach for drug delivery by coupling the drug to a

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DEVELOPMENT AND VALIDATION OF UV-SPECTROPHOTOMETRIC AND RP-HPLC METHODS FOR ESTIMATION OF LULICONAZOLE IN BULK AND GEL FORMULATION

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ABSTRACT

Analytical chemistry deals with quantitative analysis of composition of substances and complex materials in various matrices by measuring a physical or chemical property of a distinctive constituent of the components of interest. Method validation is the process used to confirm that the analytical procedure employed for a specific test is suitable for its intended use. The parameters like accuracy, precision, linearity, LOD and LOQ, repeatability were studied according to ICH guidelines. The UV- spectroscopic determination was done at an absorption maximum of 284 nm. The linearity of luliconazole was found tobe in the range of 2-10µg/ml with correlation coefficient 0.9979. the % lable claim was found tobe 96.84%. the % RSD for ruggedness was 1.56. the values for LOD and LOQ were 0.0195 and 0.0590 respectively. The RP-HPLC method was applied in which luliconazole was quantified in dosage form. The HEWLETT PACKARD series 1100 instrument having diode array detector was used having autochro-3000 software. ACN:water with ratio of 85:15 were used with the help of 0.1% OPA. The flow rate was 0.7ml having ambient temperature with sample size of 20µl.the method was found tobe simple, precise, sensitive and specific

KEYWORDS: UV-specrophotometric, RP-HPLC, luliconazole, validation, method development.

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A BRIEFE REVIEW ON LULICONAZOLE: AN ANTIFUNGAL AGENT

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ABSTRACT

Luliconazole is an agent has been found to have broad spectrum of antifungal activity against pathogenic fungi especially dermatophytes. It is indicated for the treatment of athlete's foot, jock itch and ringworms caused by dermatophytes such as Trichophyton robrum, Microsporum gypseum anf Epidemophyton floccosum. It firstly approved by FDA in 14 november 2013. It is sold under the brand name LUZU. Luzu has been extensively studied in the US, with three positive pivotal studies that were the basis for approval. Luliconazole is a topical antifungal agent that acts by unknown mechanisms but is postulated to involve altering the synthesis of fungi cell membranes. This Compound is belongs to the class of organic compounds known as dichlorobenzene. These compounds contain a benzene with exactly two chlorine atom attached to it.

KEYWORDS: Luliconazole, Tinea pedis, Dermatophytosis etc.

INTRODUTION

Luliconazole is an agent has been found to have broad spectrum of antifungal activity against pathogenic fungi especially dermatophytes. It is mostly used as 1% creams and solution for the treatment of superficial infections such as pytyriasis versicolor, candidiasis and dermatophytosis. It is indicated for the treatment of athlete's foot, jock itch and ringworms caused by dermatophytes such as Trichophyton robrum, Microsporum gypseum anf Epidemophyton floccosum. Luliconazole cream is an azole antifungal indicated for the topical treatment of interdigital tinea pedis, tinea crusis, tinea corporis.

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Review Article

A REVIEW ON HERBAL LIPSTICK FROM DIFFERENT NATURAL COLOURING PIGMENT

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ABSTRACT

From ancient times the demand of cosmetics are incredible. Lipstick formulations are used to augment the beauty of lips. Lipstick is a cosmetic product containing pigments, oils, waxes, and emollients that apply color, texture, and protection to the lips. Many varieties of lipstick are available and that are exclusively worn by women. The ingredient in the natural lipstick is all natural and is safe to use. They also contain natural nutrient that keep lips healthy. Continuous use of synthetic colors in the lipstick may cause serious adverse effects like skin irritation, skin discoloration, cancer etc. The adverse effect can be reduced by using natural color extracts from different natural sources. This review mainly focus on formulation, extraction of natural color-ants, evaluation of lipstick and defects in lipstick.

KEY WORDS: Herbal lipstick, Natural colorants, Bixa Orenella , Beta Vulgaris, Daucus Car-rota, Hylocereus Polirhizus.

INTRODUCTION

Cosmetic are substances used to enhance the appearance of the human body. Cosmetic means any article intended to be sprayed poured rubbed or sprinkled on, or introduced into or any parts for cleansing, beautifying, promoting attractiveness or altering the appearances. Cosmetic also include skin care skin, lotions, powders, perfumes, fingernails and toy nail polish, eye, color contact lenses hair colors, hair spray and gels, deodorants, baby products oils, bubble bath, bath salts, butters and many other types of product are in a great demand in both developing and developed countries.[1] Cosmetics are the substance use to alter of appearance or fragrance of human body. Nowadays the demand of herbal cosmetic in the world market are growing and are inevitable gifts of nature. There are a wide range of herbal cosmetic products to satisfy the need of women. In contrast to synthetic one the herbal cosmetic are safe on human health.[2] Lipstick are most widely used cosmetic added in the make up to enhance the beauty of lips. In present days the used of product has increase and a lot of changes occur in choice of shades of color, textures, luster of the lipstick. A good lipstick should have persuading characteristics and be acceptable to consumer, such as having a suitable texture and antioxidant properties. Bases, oils, emollient and colorant are among the variety of components that contribute to properties of fine lipstick. Texture, melting point and hardness of lipstick are the dominant characteristics that are modified by varying the ratio of component that are used in the formulation.[3] Colorant or pigment are the component that play and important role in the

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Anthelmintic Activity of Bark of *Acacia nilotica* Linn on *Pheretima posthuma*

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Abstract: The aqueous and chloroform extracts of *Acacia nilotica* linn belonging to the family Fabaceae were evaluated for anthelmintic activity. The dried powder of *Acacia nilotica* bark was extracted and the activity was studied. Both aqueous and chloroform extract collected were tested for anthelmintic activity against Indian adult earthworm *Pheretima posthuma* (Annelida) and recorded the time taken for induction of paralysis and death. Two concentrations (25 mg/ml and 50 mg/ml) of aqueous and chloroform were evaluated in the bioassay involving determination of time of paralysis (P) and time of death (D) of the worms. Piperazine citrate (10 mg/ml) was used as reference standard and normal saline solution as a control. Comparative results of present study indicated that the aqueous and chloroform extracts of leaves of *Acacia nilotica*, linn shows significantly dose depending pharmacological activity on the earthworms.

Keywords: Anthelmintic activity, *Pheretima posthuma*, *Acacia nilotica*, Piperazine citrate and vermifuge.

INTRODUCTION

Disease: Anthelmintics are drugs that expel parasitic worms (helminths) from the body, by either stunning or killing them. They may also be called vermifuge (stunning) or vermicides (killing). This includes both flat worms, e.g., flukes and tapeworms and round worms, i.e., nematodes. Helminth infection is the most common infection in human beings as well as animals which affects the large proportion of world's population. In the treatment of parasitic diseases anthelmintics are used accidentally [1]. Keeping this in view, the present study deals with the evaluation of the anthelmintic activity of *Acacia Nilotica* [2].

MATERIALS AND METHODS

Collection and Authentication of Plant material

Fresh whole plant (leaves, stems, roots, bark and flowers) of *Acacia Nilotica* were collected from Satpuda region of Shahada and authenticated by Dr. S. K. Tayade, (Head of Dept. of botany) P. S. G. V. P. Mandal's Arts, Science, and Commerce College, Shahada, Dist-Nandurbar (MS). After authentication, bark of plant was collected, powdered and dried under shade for a period of 7 days and then pulverized in mechanical grinder to obtain coarse powder. The dried bark powder was stored in airtight bottles.

Extraction methodology [3, 4]

Aqueous extract

The coarse bark powdered material (each 100 gm) was soaked in distilled water (500ml) by Maceration technique for continuous 72 hours and then strained and the concentrate was evaporated on water bath until concentrate (syrupy consistency) is left and then evaporated to dryness.

Chloroform extract

The coarse bark powdered material (each 100 gm) was soaked in chloroform (500ml) by Maceration technique for continuous 72 hours and then strained and the concentrate was evaporated on water bath until concentrate (syrupy consistency) is left and then evaporated to dryness.

Worms Collection

Healthy adult earthworms (Pheretima posthuma) were used to evaluate anthelmintic activity in *vitro*. Earthworms were collected from the water logged areas of soils along Lonkheda road Shahada. The average size of earthworm was 6-8 cm.

Drugs and chemicals

- Piperazine citrate.
- Saline solution.

ANTHELMINTIC ACTIVITY

The anthelmintic assay was carried out as per the method of Ajaiyeoba *et al.*, [5] The assay was performed in *vitro* using adult earthworm (*Pheretima posthuma)* owing to its anatomical and physiological resemblance with the intestinal roundworm parasites of human beings for preliminary evaluation anthelmintic activity [6-8].

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Research Article

FORMULATION AND EVALUATION OF HERBAL LIPSTICK FROM BETA VULGARIS TAPROOT

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ABSTRACT

Betanin is a red condiment which is derived from the roots of Beta vulgaris. It is often used to impart a red color to food, but sometime also for its natural antioxidant. The aim of present investigation was to formulate and evaluate herbal lipstick from colored pigment of the Beta vulgaris, since lipstick is one of the key cosmetics to be used by the women. Coloring skin particularly skin of face and lips is an ancient practice going back to prehistoric period. In present day the use of such a product has increased and choice of shades of color, texture and luster have been changed and become wider. This can be observed from the fact that lipsticks are marked in hundreds of shades of colors to satisfy the demand of women. The coloring pigment from beta vulgaris taproot was extracted by decoction method and 3 different formulations (F1, F2, and F3) were prepared using Olive oil, Paraffin wax, Bees wax, Pigment-Betanins, Acacia, Lemon juice, Vanilla essence. Among the prepared lipsticks, formulations F3 revealed ideal characteristics of lipsticks. Due to various adverse effects of available synthetic preparation the present work was conceived by us to formulate an herbal lipstick having minimal or no side effects which will extensively use by the women of our communities with great surety and satisfaction.

KEY WORDS: Herbal Cosmetics, Olive oil, White soft paraffin, Beetroot extract, Bees wax, Acacia.

INTRODUCTION

Cosmetic are substances used to enhance the appearance of the human body. Cosmetic means any article intended to be sprayed poured rubbed or sprinkled on, or introduced into or any parts for cleansing, beautifying, promoting attractiveness or altering the appearances. [1] Cosmetic also include skin care skin, lotions, powders, perfumes, fingernails and toy nail polish, eye, color contact lenses hair colors, hair spray and gels, deodorants, baby products, bath oils, bubble bath, bath salts, butters and many other types of product are in a great demand in both developing and developed countries. [2, 3] Herbal cosmetics have growing demand in the world market and are invaluable gift of nature. The word herbal is symbol of safety in contrast to the synthetic one which has adverse effect on human health. Herbal preparation viz., herbal tablet, herbal tonics, herbal paste, herbal shampoo, herbal contraceptives and herbal lipstick has become popular among the consumer herbal medicines represent the fastest growing segment to heal various ailments. There

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FORMULATION AND EVALUATION OF LIQUID HERBAL SHAMPOO

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ABSTRACT

Herbal Shampoo is a cosmetic preparation which uses herbs and it is meant for washing of hair and scalp just like a regular shampoo. The herbal shampoo was formulated using natural ingredients like *Piper betel* (Betel leaf), *Azadirachta indica* (Neem), *Acacia concinna* (Shikakai), *Spindus mokorossi* (Reetha), *Aloe barbadensis* (Aloevera). The formulation at laboratory scale was done and evaluated for number of parameter to ensure its safety and efficacy. Two formulations were prepared i.e. F1 and F2 and the evaluation parameter was studied like Physical appearance, Foam stability, Wetting test, etc. Formulation-2 has shown good viscosity, wetting ability, good physical appearance as compared to other formulations.

KEYWORDS: Herbal Shampoo, Betel leaf, Neem, Shikakai, Reetha, Evaluation.

INRODUCTION

Hairs are the integral part of human beauty. People are using herbs for cleaning, beautifying and managing hair since the ancient times. These reasons attracted community towards the herbal products, which are less expensive and have negligible side effects. It does not only have hair cleansing purpose but also imparts gloss to hair and used to maintain their manageability and oiliness of hair.[1]

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Research Article

FORMULATION AND EVALUATION OF MEDICATED CANDY CONTAINING ALBENDAZOLE FOR PEDIATRIC

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ABSTRACT

There are several dosage forms in the market; there is a need for more dosage form which acts effectively and locally as well as systematically. The benefits of the research work are increased retention time of the oral cavity and increased bioavailability, reduction in gastric irritation by passing first pass metabolism. Candy are flavored medicated dosage form intended to be sucking and held in the mouth or pharynx containing one or more medicaments usually in the sweetened base. Medicated candy is designed to improve patient compliance, acceptability. The candy was prepared by heating and congealing method using methylcellulose, citric acid as polymer. Drug albendazole is an anthelminthic drug which contain very bitter taste drug. For patient acceptability we need to improve the taste of the drug by different saccharides like sucrose, dextrose. Pourability, Texture and Elasticity is improved by different plasticizers like glycerin. It was found that the formation containing methyl cellulose and combination of saccharides like dextrose, sucrose showed better drug release and it was more stable, unlike the other formulation.

KEY WORDS: Medicated candy, albendazole, heating and congealing Method, Saccharides, Plasticizers.

INTRODUCTION

Oral dosage forms vary and have advantages over other dosage forms. They are economical and safe to the patient. Their toxicity is delayed due to the onset of action which permits easier recovery than in case of other dosage forms1. A drug can be administered via a many different routes to produce a systemic pharmacological effect. The most common method of drug administration is via per oral route in which the drug is swallowed and enters the systemic circulation primarily through the membrane of the small intestine. The oral route of drug administration is the most important method of administering drug for systemic effect. Absorption of drugs after oral administration may occur at the various body sites between the mouth and rectum. A drug taken orally must withstand large fluctuations in pH as it travels along the gastrointestinal tract, as well as resist the onslaught of the enzymes that digest food and metabolism by micro flora that live there. Difficulty is experience in particular by paediatric and geriatric patient, but it also applies to people who are ill bedridden and to those active working patients who are busy or travelling, especially those who have no access to water. In these cases, oral mucosal drug delivery is most preferred. The buccal and sublingual routes of administration can be utilized to bypass the hepatic first-pass elimination of drug. Within the oral mucosal cavity. The buccal region offers an attractive route of administration for systemic drug delivery.2

Physiology of the Oral Mucosa 2,3,4,5

Structure: The main difference between the oral mucosa and skin as compared to the gastrointestinal (GI) tract lining lies in the organization of the different epithelia. Within the oral cavity the

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Research Article

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ANTIFUNGAL ACTIVITY OF *ZIZIPHUS MAURITIANA* AGAINST *CANDIDA ALBICANS* AND *ASPERGILLUS NIGER*

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ABSTRACT

Ziziphus mauritiana Lam. is a medium sized tree (Rhamnaceae) grows in almost all parts of the country. It is a potent medicinal plant with many biologically active components such as phenolics, flavonoids, triterpenic acids, polysaccharides and saponins. It majorly possesses anti cancer, anti oxidant, wound healing, antifertility, anti inflammatory, antiulcer, antidiahhoreal and antifungal activities. In the present study, anti fungal activity of *Ziziphus mauritiana* was tested with methanol extracts against various pathogenic fungi such as *Candida albicans.* The invitro anti fungal activity was performed by agar well diffusion method. Of the leaf extracts, methanol extract from *Z. mauritiana* leaves exhibited significant antifungal activity. In anti fungal studies, methanol leaf extract showed promising results against *Candida albicans.*

KEYWORDS: *Ziziphus mauritiana, M*ethanol extract, antifungal activity, *Candida albicans, Aspergillus niger.*

1. INTRODUCTION

Ziziphus mauritiana a tropical fruit tree species. It is a spiny, evergreen shrub or small tree up to 15 m high, with trunk 40 cm or more in diameter; spreading crown; stipular spines and many drooping branches. The fruit is of variable shape and size. It is oval, obovate, oblong or round, and it can be 1-2.5 in (2.5- 6.25 cm) long, depending on the variety. The flesh is white and crisp. When slightly unripe, this fruit is a bit juicy and has a pleasant aroma. The fruit's skin is smooth, glossy, thin but tight. It is the most commonly found in the tropical and sub-tropical regions. Originally native to India it is now widely naturalized in tropical region from Africa to Afghanistan and China, and also through Malaysia, Australia and in some pacific regions. It can form dense stands and become invasive in some areas, including Fiji and Australia and has become a serious environmental weed in Northern Australia. It is a fast growing tree with a medium life span that can quickly reach up to 10–40 ft (3 to 12 m) tall.

Vernacular Names

English: Chinee apple, Chinese date, cottony jujube, Indian cherry, Indian jujube, Indian plum, jujube
Fijian: baer
French: jujubier, massonnier
Hindi: baher, bahir
Spanish: azufaifo africano

In traditional medicine of Ayurveda, unripe fruits are used to pacify "*Vata*", the leaves, fruits, bark & even roots are used to treat a variety of ailments including cold, flu and malnutrition related diseases in children, convulsions and indigestion. The leaves are applied as poultices and are helpful in liver troubles, asthma, fever and to treat sores and the roots are used to cure and prevent skin diseases. All the parts of this plant are very effective against different types of diseases. Its leaves are useful in the treatment of diarrhoea, wounds, abscesses, swelling and gonorrhoea. The leaves of *Z.mauritiana* are also used in the treatment of liver diseases, asthma and fever. The fruit has been used as anodyne, sedative, tonic anticancer and potent wound healer. Thefruit, leaves and seed extracts have been shown to exhibit antioxidant activity, where as bark is reported to have cytotoxicity against different cancer cell lines.

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FORMULATION AND EVALUATION OF MOUTH DISSOLVING FILM OF DESIPRAMINE HCL FOR THE MANAGEMENT OF DIPRESSION CONDITION

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ABSTRACT

The present investigation was undertaken with an objective of formulating mouth dissolving films (MDFs) of DESIPRAMINE HCL to enhance convenience and compliance of the elderly and pediatric patients for better therapeutic efficacy. DESIPRAMINE HCL is, Tricyclic antidepressant used in the management of depression condition. The film prepared with Desipramine HCL is enhance the bioavailability, and is very convenient for administration, without the problem of swallowing and using water. **Materials and Methods:** The films of DESIPRAMINE HCL were prepared by using polymers such as hydroxypropyl methylcellulose (HPMC) and there different grades like E15 as a single polymer by a solvent casting method. They were evaluated for physical characteristics such as uniformity of weight, thickness, folding endurance, drug content uniformity, surface pH, percentage elongation, and tensile strength, and gave satisfactory results. The formulations were subjected to disintegration, in vitro drug release tests. **Results:** A marked increase in the dissolution rate was exhibited by fast-dissolving films of DESIPRAMINE HCL containing HPMC E15 as a polymer, when compared to conventional tablets. **Conclusions:** Fast dissolving films of DESIPRAMINE HCL can be considered suitable for clinical use in the management of depression condition, where a quicker onset of action for a dosage form is desirable along with the convenience of administration.

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REVIEW ON MOUTH DISSOLVING FILM

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ABSTRACT

Fast-dissolving drug-delivery systems were first developed in the late 1970s as an alternative to tablets, capsules, and syrups for pediatric and geriatric patients who experience difficulties swallowing traditional oral solid- dosage forms. Fast dissolving films have become a novel approach to oral drug delivery system as it provides convenience and ease of use over other dosage forms such as orally disintegrating tablets, buccal tablets and sublingual tablets, so mouth dissolving films are gaining the interest of large number of pharmaceutical industries. Buccal drug delivery has lately become an important route of drug administration. But many of the patients (pediatric and geriatric) are unwilling to take solid preparations due to fear of choking. This has made the pharmaceutical industry look for alternative routes of drug delivery like film drug delivery. Fast dissolving oral drug delivery systems have started gaining popularity and acceptance as new drug delivery systems, because they are easy to administer, better patient compliance, rapid drug absorption and sudden-onset of drug action with instant bioavailability is possible. Formulation of mouth dissolving films involves both the visual and performance characteristics as plasticized hydrocolloids, API taste masking agents are being laminated by solvent casting and semisolid casting method. Solvent casting method being the most preferred method over other methods because it offers great uniformity of thickness and films prepared having fine glossy look and better physical properties. Mouth dissolving films are evaluated for its various parameters like thickness, physical property like folding endurance, disintegration and dissolution time.

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DEVELOPMENT AND VALIDATION OF U.V-SPECTROPHOTOMETRIC AND HPLC METHOD FOR HYDROCHLOROTHIAZIDE IN BULK AND TABLET DOSAGE FORM

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ABSTRACT

The aim of this research work was to develop simple, precise and rapid UV-Spectrophotometric and HPLC methods for analysis of Hydrochlorothiazide in Bulk and Tablet dosage form. UV-Spectrophotometric method was developed for the estimation of Hydrochlorothiazide in individual tablet dosage form. The proposed methods were applied for the determination of drugs in bulk and tablet dosage form. Determination of Hydrochlorothiazide was done by simple method. In this method, concentration was obtained by using the absorptivity values calculated for the drugs at **wavelengths, 260.0 nm.** A rapid and reliable HPLC method was developed and validated for estimation of Hydrochlorothiazide in bulk and tablet dosage form. Chromatographic separation was performed on Agilent C $_{18}$ (4.6 mm □ 250 mm i.d.), 5µm particle size in isocratic mode, using a mobile phase Methanol: Water (30:70 v/v), pH 7. The retention time for Hydrochlorothiazide was found to be 2.59 min. The method was applied to marketed tablet formulations. The UV-Spectrophotometric method was found to be simple, economical and rapid as compared to HPLC. But, HPLC method was found to be more accurate, precise, robust and rugged. Both these methods can be used for routine analysis of Hydrochlorothiazide in Bulk and Tablet dosage form.

KEYWORDS: Hydrochlorothiazide; UV-Spectrophotometric; HPLC; Tablet.

INTRODUCTION

Hydrochlorothiazide is a thiazide diuretic which reduces the reabsorption of electrolytes from the renal tubules, thereby increasing the excretion of sodium and chloride ions and

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REVIEW ON MOUTH DISSOLVING TABLET

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ABSTRACT

Now day's formulation research is breaking barriers of conventional methods. Recently, MDTs have take over an important position in the market by overcoming previously administration problems and contributing to extension of patient life, which have difficulty in swallowing tablets and capsules. Upon introduction into the mouth, these tablets dissolve/ disintegrate in the mouth without additional water for easy administration of pharmaceutical ingredients. Oral fast-dissolving tablets, are an examples of a few existing technologies with the potential to accommodate various physicochemical, pharmacokinetic and pharmacodynamics characteristic of drugs. Fast dissolving tablets (FDTs) have received ever-increasing demand during the last decade, and the field has become a rapidly growing area in the pharmaceutical industry. This article reviews the Need, advantages, limitations, various formulation technologies [conventional], marketed product of Fast dissolving tablets.

KEYWORDS: Mouth dissolving tablets, fast Dissolving Tablets, MDT's, Direct compression, Superdisintegrants.

INTRODUCTION

In recent decades, a variety of pharmaceutical research has been conducted to develop new dosage forms. Considering quality of life, most of these efforts have been focused on ease of medication. Among the various dosage forms developed to improve the ease of administration, the mouth dissolving tablet (MDT) is the most widely preferred commercial products. Solid dosage forms are popular because of low cost, ease of administration, accurate dosage self medication, pain avoidance and the most importantly the patient compliance. The most popular solid dosage forms are being tablets and capsules.[1,3] However

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RJPT

RESEARCH ARTICLE

Anthelmentic Activity of *Tridax procumbens* Linn Leaves on Indian Earthworms

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ABSTRACT:
The aqueous and chloroform extracts of *Tridax procumbens*, linn belonging to the family Asteraceae were evaluated for anthelmintic activity. The dried powder of *Tridax procumbens* leaves was extracted and the anthelmintic activity was studied. Both aqueous and chloroform extract collected were tested for anthelmintic activity against Indian adult earthworm Pheritima posthuma and recorded the time taken for induction of paralysis and death. Two concentrations (25 mg/ml and 50 mg/ml) of aqueous and chloroform were evaluated in the bioassay involving determination of time of paralysis (P) and time of death (D) of the worms. Piperazine citrate (10 mg/ml) was used as reference standard and normal saline solution as a control. Comparative results of present study indicated that the aqueous and chloroform extracts of leaves of *Tridax procumbens* linn shows significantly dose depending pharmacological activity on the Indian earthworms.

KEYWORDS: Anthelmintic activity, Pheritima posthuma, *Tridax procumbens* and Piperazine citrate.

INTRODUCTION:
Disease:
Helminthes infection is the most common infection in man and in animals which affects the large proportion of world's population. Anthelmintics are drugs that expel parasitic worms (helminths) from the body, by either stunning or killing them. They may also be called vermifuge (stunning) or vermicides (killing). This includes both flat worms, e.g., flukes and tapeworms and round worms, i.e., nematodes. In the treatment of parasitic diseases an anthelmintics are used accidentally.[1] Keeping this in view, the present communication deals with the evaluation of the anthelmintic activity of *Tridax procumbens*.[2]

PLANT DESCRIPTION:
Tridax procumbens linn is commonly known as Ghamra in Hindi and Ghav Pala or Dagadi Pala in Marathi. It is a weed found throughout India. A herb with woody base sometime rooting at the node, up to 60 cm high. Leaves are ovate-lanceolate 2 to7 cm, sometimes three lobed, flowers is small, long peduncles heads.[3]

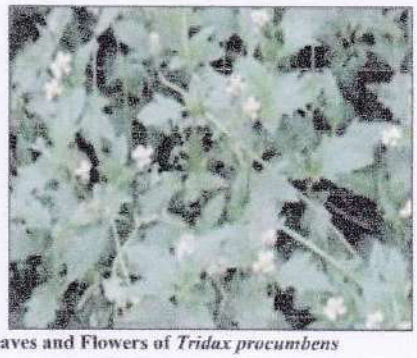

Fig 1- Leaves and Flowers of *Tridax procumbens*

TRADITIONAL NAMES:[4]
English - Coat Buttons and Tridax Daisy.
Hindi - Ghamra.
Sanskrit - Jayanti Veda.
Marathi - Dagadi Pala and Ghav Pala,
Telugu - Gaddi Chemanthi.
Tamil - Thata poodu.

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REVIEW ARTICLE

A Descriptive Study of *Acacia nilotica* Linn

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ABSTRACT:
The use of herbal products for the prevention and treatment of various diseases and disorders in human beings as well as in animals has been in practice from ancient time. Herbal remedies is still the foundation of about 60-80% of world population, mainly in the developing countries as well as in developed countries for primary health care because of its better acceptability, better compatibility with human body as well in animals with minimum side effects and easy availability and economically affordable. *Acacia nilotica* is very common and popular tree in India. This article briefly reviews the ethnobotanical as well as medicinal uses of *Acacia nilotica* with plant description. This is an attempt to compile and document information on different aspect of *Acacia nilotica* and its potential use.

KEYWORDS: *Acacia nilotica*, Ethnobotanical, Antimicrobial, Antioxidant and Antispasmodial.

INTRODUCTION:

Acacia species are commonly known as 'Babool' inIndia. It is widely used for the treatment of various diseases and disorders like in skin, sexual disorders, stomach and tooth problems etc in human beings as well as in animals. *Acacia nilotica* tree has been recognized worldwide as a multipurpose tree. It is widely distributed throughout dry and semi- dry zones of the world including India.[1-6]

The World Health Organization (WHO) has listed more than 21,000 plants, which are used for a lot of therapeutic purposes all over the world [7]. They observed that about 74% of 119 plant-derived pharmaceutical medicines are used in recent medicine. It also estimates that 4 billion people presently use herbal medicine for health care.[8]

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More than hundreds years, herbal compoundsobtained from medicinal plants, minerals and organic matter is still the foundation of about 75–80% of the world's population for health care marketed and gaining popularity in developed and developing countries[9]. Herbs have contains different active principles like alkaloids, volatile essential oils, glycosides, resins, oleoresins, steroids, tannins, terpenes and phenols [10]. In the last few years there is an exponential growth in the field of herbal medicine because of their natural origin, easy availability, efficacy, safety and less side effects with efficient to cure age-related disorders like memory loss, osteoporosis, immune disorders, etc. for which no modern medicine is available.[11, 12]

Medicinal plant researchers pursued with several goals like the development of low cost therapeutic compounds and the discovery of prototypic drugs[13]. *Acacia nilotica* is also known as Gum Arabic tree, Babul, Egyptian thorn, or Prickly Acacia is multipurpose nitrogen fixing tree legume. It occurs from sea level to over 2000mts and withstand at extreme temperature and air dryness but sensitive to frost when it is young [14]. It is widely spread in subtropical and tropical Africa from Egypt to South Africa, and in Asia.[15, 16]

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RESEARCH ARTICLE

A Review on *Tridax procumbens* Linn

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ABSTRACT:
Tridax procumbens Linn belongs to the family Asteraceae. The various extracts of *Tridax procumbens* have been used as indigenous medicine for a variety of diseases and disorders in human beings as well as animals. It has been extensively used in Indian traditional medicine for wound healing, as anticoagulant, in fungal infection, in diarrhea and dysentery, as antioxidant, antimicrobial, anti-inflammatory and immunomodulatory. Leaf extracts are used to treat infectious skin diseases in folk medicines. It is also dispensed as 'Bhringraj' which is well known ayurvedic medicine for liver disorders. Plants contain phenols or their oxygen substituted derivatives which are mostly secondary metabolites. At least 12,000 have been isolated. These substances serve as plant defense mechanisms against predation by microbes, insects, herbivores. It also contains terpenoides and flavoring agents etc.

KEYWORDS: *Tridax procumbens*, Biological activity, modulatory, extract and Medicinal plants.

INTRODUCTION:
Tridax procumbens is a species of flowering plant belonging to family Asteraceae and is the most potent species among 30 species. It is best known as widespread weed and pest plant. It is native to the tropical Americas but it has been introduced to tropical, subtropical and mild temperate regions worldwide. It is listed as a noxious weed in the United States and has a pest status. Some of the medicinally important species of the genus Tridax are: *T. angustifolia*, *T. serboana*, *T. bicolor*, *T. accedens*, *T. dubia*, *T. erecta* and *T. rosea*. *procumbens*, commonly known as coat buttons or tridax daisy, is a species of flowering plant in the daisy family. It is best known as a widespread weed and pest plant. It is native to the tropical Americas but it has been introduced to tropical, subtropical, and mild temperate regions worldwide.

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Traditionally, *Tridax procumbens* has been in use in India for wound healing, as anticoagulant, antifungal and insect repellent. It is used in diarrhoea and dysentery. Its leaf extracts were known to treat infectious skin diseases in folk medicines. It is a well-known ayurvedic medicine for liver disorders or hepato-protective nature besides gastritis and heart burn. A study was carried out to verify the claims wherein tribal inhabitants of Udaipur district, Rajasthan were using the plant for treatment of diabetes. It was concluded that the results were comparable to that of reference standard Glibenclamide and the *Tridax procumbens* flower extract showed antidiabetic properties[1, 2, 3].

Description:
The plant bears white or yellow flowers with three toothed ray florets. The leaves are toothed and generally anchor shaped. Its fruit is hard achene covered with stiff hairs and having a feathery, plume like white pappus at one end. Calyx is represented by scales or reduced to pappus. The plant is invasive in part because it produces so many of these achenes, up to 1500 per plant and each

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FORMULATION DEVELOPMENT AND EVALUATION OF *IN SITU* FLOATING GEL OF DOMPERIDONE

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ABSTRACT

The present investigation deals with the formulation development and evaluation of floating in situ gel based gastroretentive drug delivery system of Domperidone. Sodium alginate was used as a polymer and CaCo3 was used as a cross linking agent. In situ gel forming polymeric formulations are in solution form before administration, but once administered undergoes gelation in situ to form a gel, in response to temperature or pH. Oral tablet administration to patients is a significant problem and has become the object of public attention. The demand for liquid dosage forms that can be easily ingested is particularly strong in the pediatrics and geriatric markets. The objective of this study was to develop a novel in situ gel system for sustained drug delivery using natural and ionic cross linking biodegradable polymer. This system includes polymers that exhibit sol-to-gel phase transition due to change in specific physico-chemical parameter i.e, biological pH. Prepared formulations (solutions) were evaluated for pH, Viscosity, In vitro floating time, In vitro gelation, swelling index, Drug content and cumulative amount of drug release. From the desired set of experiments, it was evident that formulation containing sodium alginate and xanthan gum can control the release of drug for longer duration(12hours). The FTIR study has shown that there is a good compatibility between the drug and polymer. The in situ gel exhibited the optimum pH, viscosity, swelling index in vitro floating ability, in vitro gelling capacity, drug content and the amount of drug release.

KEYWORDS: Floating In situ Gel, Domperidone, Sodium alginate, Xanthan gum, HPMC K15M.

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DEVELOPMENT AND VALIDATION OF THE UV-SPECTROPHOTOMETRIC AND RP-HPLC METHOD FOR SIMULTENIOUS ESTIMATION OF ITRACONAZOLE AND TERBINAFINE HYDROCHLORIDE IN BULK AND IN FORMULATION

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ABSTRACT

The main objective was develop and validate the UV-Spectrophotometric and RP-HPLC method for the estimation ofitraconazole and terbinafine hydrochloride in bulk and pharmaceutical formulations as per ICH guidelines. An UV-Spectrophotometric method for the quantitative determination of itraconazole and terbinafine hydrochloride a highly potent antimycotic in tablet was developed in present work. The parameters linearity, precision, accuracy, limit of detection, limit of quantitationwere studied according to ICH Guideline UV Spectroscopic determination was carried out at an absorption maximum of 247 nm using methanol as solvent. In the UV spectroscopic method linearity over the concentration range of itraconazole was found to be 1-5µgm/ml with a correlation coefficient 0.9978. And for terbinafine hydrochloride was found to 2.5-10µgm/ml with a correlation coefficient 0.9986. result of the analysis were validated statisticaly and by recoverybstudies. The proposed method is simple, rapid, precise and accurate and can be used for the reliable quantitation of itraconazole and terbinafine hydrochloride in pharmaceutical formulation. A RP-HPLC method has been developed and validated to determine itraconazole and terbinafine hydrochloride in tablet dosage form. The chromatography was performed on c18 column and a mobile phase consisting of methanol and 0.1% OPA in water(65:35) eluents

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A BRIEF REVIEW ON ITRACONAZOLE AND TURBINAFINE

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ABSTRACT

Itraconazole has broader spectrum of activity. Itraconazole is over 99% protein bound and has virtually no penetration into cerebrospinal fluid. Terbinafine, sold under the brand name Lamisil, among others is an antifungal medication used to treat pityriasis versicolor, fungal nail infection, and ringworm including jock itch and athlete's foot. Terbinafine is increasingly used in combination with itraconazole antifungal to treat resistant or refractory mycoses due to synergistic in vitro antifungal activity. Due to its broad antifungal spectrum, interest in terbinafine has expanded to include its use in range of cutaneous and subcutaneous mycosis, such as sporotrycosis. As well as in combination with itraconazole to treat resistant or refreactory invasive fungal infection. :- terbinafine inhibits ergosterol synthesis by inhibiting the fungal squalene monooxygenase(squalene 2,3 – epoxidase) an enzyme that is part of the fungal cell wall synthesis pathway. Itraconazole inhibit fungal cytochrome P450 3A dependent enzyme decreases ergosterol synthesis and inhibits cell membrane formation.

KEYWORDS: Itraconazole, terbinafine, onychomycosis, Lamisil, sporonax.

INTRODUCTION

Itraconazole has a broader spectrum of activity than fluconazole (but not as broad as horiconazole or posaconazole). In particular it is active against aspergillus which fluconazole is not. it is also licenced for used in blastomycosis, sporotrichosis. Itraconazole is over 99% protein bound and has virtually no penetration into cerebrospinal fluid.

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REVIEW ON MICROSPHERES: METHODS OF PREPARATION AND EVALUATION

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ABSTRACT

Microspheres are typically free flow powders consisting of proteins or synthetic polymers which are biodegradable in nature. And ideally having a particle size less than 200µm. Microsphere after ball bearing effects because of their spherical shape. The therapeutic efficacy of microspheres contain drug depends upon their characteristics that can be altered in required terms by altering materials, methods, polymers or techniques used. A Microspheres has its drug dispersed throughout the particle i.e. the internal structure is a matrix of drug and polymeric excipients. It is the reliable means to deliver the drug to the target site with specificity, if modified, and to maintain the desired concentration at the site of interest without untoward effects. Microspheres received much attention not only for prolonged release, but also for targeting of anticancer drugs to the tumor. In future by combining various other strategies, microspheres will find the central place in novel drug delivery, particularly in diseased cell sorting, diagnostics, gene & genetic materials, safe, targeted and effective *in vivo* delivery and supplements as miniature versions of diseased organ and tissues in the body.

KEYWORDS: Microspheres, Drug delivery, target site, preparation, evaluation, application.

INTRODUCTION

Some of the problems of overcome by producing control drug delivery system which enhance the therapeutic efficacy of a given drug For obtain maximum therapeutic efficacy and minimum side effects it necessary to deliver the agent to the target tissue in the optimal amount. There are various approaches in delivering a therapeutic substance to the target site in a sustained controlled release fashion.[4] One such approach is using microspheress as

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ORAL IN-SITU FLOATING GELLING SYSTEM: REVIEW ON

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ABSTRACT

In-situ gelling system explains about gels which are defined as intermediate state of matter consists of liquid and solid components. Hydrogels is defined as three dimensional structures which has capacity to retain bulk amount of water and also biological fluids to swell. Conventional oral dosage forms pose low bioavailability problems due to their rapid gastric transition from stomach, especially in case of drugs which are less soluble at alkaline pH of intestine. Similarly, drugs which produce their local action in stomach get rapidly emptied and do not get enough residence time in stomach. So, frequency of dose administration in such cases is increased. In-situ gels are type of hydrogels that are solution in form and undergo gelation in contact with body fluids or change in pH. Some of the polymers that are used in in-situ gelling system are guar gum, Xanthan gum, Sodium alginate, Sodium Benzoate, Sodium Citrate, Polyethylene glycon and Hydroxy Propyl methyl cellulose.

KEYWORDS: In situ gel, Approches, Polymers, Evaluation.

INTRODUCTION

Recent development in technology has provided viable dosage alternatives that can be administered via different routes of administration. Various routes that are used these days include oral, parentral, topical, nasal, rectal, vaginal, ocular etc. But out of these routes, oral route of drug delivery is considered as the most favoured and practiced way of drug delivery, because of following reasons.[1,2,3]

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A REVIEW: HPLC METHOD DEVELOPMENT AND VALIDATION

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ABSTRACT

HPLC is the dominant separation technique in modern pharmaceutical and biomedical analysis because it results in highly efficient separations and in most cases provides high detection sensitivity. Most of the drugs in multi component dosage forms can be analyzed by HPLC method because of the several advantages like rapidity, specificity, accuracy, precision and ease of automation in this method. HPLC methods development and validation play important roles in new discovery, development, manufacture of pharmaceutical drugs and various other studies related to humans and animals. An analytical procedure is developed to test a defined characteristic of the drug substance or drug product against established acceptance criteria for that characteristic. This review gives information regarding various stages involved in development and validation of HPLC method. Validation of HPLC method covers all the performance characteristics of validation, like Accuracy, precision, specificity, linearity, range and limit of detection, limit of quantification, robustness and system suitability testing.

KEYWORDS: High Pressure Liquid Chromatography (HPLC), Method development, Validation.

1. INTRODUCTION

High Performance Liquid Chromatography (HPLC) was derived from the classical column chromatography and, is one of the most important tools of analytical chemistry today.[1] In the modern pharmaceutical industry, high-performance liquid chromatography (HPLC) is the major and integral analytical tool applied in all stages of drug discovery, development, and production.[2] The aim of HPLC method is to try & separate, quantify the main drug, any

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Anthelmintic activity of *Piper betle* on *Pheretima posthuma*

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Abstract
The study was conducted to investigate the anthelmintic activities of *Piper betel* leaves. The extract was subjected to assay for anthelmintic activity with the determination of paralysis time and death time using earthworm (*Pheretima posthuma*) at four different concentrations. In this study the anthelmintic activity of extract of leaves of Piper betel Linn was performed. Indian adult earthworms were used for the assessment of anthelmintic activity. Piperazine citrate (10 mg/ml) was used as standard and normal saline water was used as vehicle respectively. Observations were made for the time taken to paralysis and death.

Keywords: *Piper betle*, anthelmintic, extract and medicinal plants, *Pheretima posthuma*

Introduction

The leaves of Piper betel Linn have long been use in the Indian local system of medicine. In ancient India, betel leaves are considered auspicious and are still extensively used during religious functions in Asia. It is generally found in hot and moist climatic condition. In India it is found in Bihar, Bengal, Orissa, South India and Karnataka. The betel plant is an evergreen and perennial creeper, with glossy heart-shaped leaves and white catkin [1]. There are various types of leaves, the most popular being: Calcutta, Banarasi, Magahi, etc. In Bangladesh Dinajpur, Rangpur, Chittagong, Faridpur, Jessore, Narayanganj, Barisal and Sylhet are the areas producing the most betel. The harvested leaves are used both for domestic consumption and for export to Middle East, to European countries, USA, UK, Pakistan, and Myanmar. Paan is one of the major economic sources of rural Bangladesh. The best betel leaf is the "Magadhi" variety (literally from the Magadha region) grown near Patna in Bihar, India. In Kerala, the famous variety of betel leaf is from Venmony near Chengannur and it is called "Venmony Vettila". Betel leaf cultivated in Tirur in Kerala, Hinjilicut in Odisha are of fine quality. Betel leaves exported from Tirur are famous in Pakistan as "Tirur Pan". Piper betel is one of the invaluable medicinal plants where its leaves have been used for many medicinal purposes. Piper betel, a member of the Piperaceae, which is a large plant family, is also known Paan in India and Sirih in Malaysia and Indonesia, show in (figure 1). The fresh leaves of betel leaves have been wrapped together with the areca nut, mineral slaked lime, catechu, flavoring substances and spices are chewed since the ancient time [2]. The whole betel plant had some very bad press due to reports associating the usage of the herb with mouth cancer. It also helps in reducing difficulty in breathing for people suffering from asthma. Apply some mustard oil to the leaves of the betel plant, warm it and then keep it on the chest to bring relief from asthma [3]. A preliminary study has reported Piper betel leaves extract contains large numbers of bioactive molecules. Piper betel contains a wide variety of biologically active compounds whose concentration depends on the variety of the plant, season and climate. Pharmacological Profile has shown, antiplatelet, anti-inflammatory effects as well as immuno modulatory, gastro protective and antidiabetic activity. Paan has been referred to in Saktatantra as one of the means of achieving siddhi. It was believed that without betel chewing and offering pan to Guru no siddhi can be gained. Tambool has also been referred to as facilitating the sadhak in chewing dharma, yasha aisvarya, Srivairagya and mukti. It was reported that fresh leaves contains: moisture 85.4, protein 3.1, fat 0.8, carbohydrate 6.1, fibre 2.3, calcium 230 mg, phosphorous 40 mg, iron 7 mg, ionisable iron 3.5 mg, iodine 3.4 µ. They have a high content of potassium nitrate (0.26 - 0.42 %). The sugars identified in betel leaves include glucose, fructose, maltose and sucrose. The average content of free reducing sugars in different types of betel leaves varies from 0.38 - 1.46 %. It also contains the enzyme like diastase and catalase. Piper betel leaves are earlier reported to possess anticancer potential. Hence, the aqueous extract of the leaves was subjected to cytotoxicity studies on Hep-2 cell line using Micro culture Tetrazolium and Sulphorhodamine β assays (Chaurasia, Sundeep *et al.*). Piper betel leaf oil can be used as an industrial raw material for manufacturing medicines, perfumes, food additives etc. The leaves are nutritive and contain anti carcinogens showing promise for manufacturing of a blood cancer drug (Sengupta).

Scientific classification

Synonyms: Chavica Beta. Artanthe Hixagona
Kingdom: Plantae
Order: Piperales
Family: Piperaceae
Genus: Piper
Species: betel
Division: Magnoliphyta
Taste: Pungent tasting and warming.

Vernacular names

Sanskrit: Tambool, Mukhbhushan, Varnalata,
Hindi: Paan leaf,
English: Betel, Betel pepper, Betel-vine,
Telugu: Nagballi, Tamalapaku,
Tamil: Vetrilai,
Gujarati: Nagarbael,

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FORMULATION AND EVALUATION OF HERBAL SYRUP

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ABSTRACT

Most of herbal syrup was originally derived from plant herbal medicine refers to use extract of fruit for medicinal purpose. Along with other dosage from herbal drugs also formulated inform of syrups. Today syrup is used for treatment of many ailments and to overcome symptoms of diseases. The antioxidant syrup is used to treat the cancer because of many stress condition and other oxidative reaction in body the free radical are generated, by using these syrup the condition is overcome. The extraction of kiwi is added into orange peel it gives flavored to syrup and basil leaves extract is added as antibacterial agent to inhibit the growth of bacteria and sugar and alcohol used as preservative. Four formulation viz. F1, F2, F3 and F4 were prepared with variation in quantity of ingredients like alcohol, sugar and final volume of syrup. All prepared formulation was by parameters like density, specific gravity, pH, organoleptic characteristics. The results shown that herbal syrup formulation number 4 (F4) is more stable and elegant as compared to other formulations.

KEYWORDS: Herbal Syrup, Kiwi, Basil, Orange peel, Evaluation.

INTRODUCTION

Herbal syrup is prepared by adding concentrated decoction of herbs with either honey or sugar and we also use alcohol. The herbal syrup is made by decoction process. Mixing a decoction of herbs with sugar it helps to the formulation for thicken and preserve the formulation. This was responsible to increase the shelf life of formulation. The added sweetener can also help to increase the palatability of some herbs. The finally obtained syrup to be delicious![1]

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SUBLINGUAL TABLETS: A REVIEW ON

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ABSTRACT

Oral administration is one of the most convenient forms for the intake of drug due to ease of administration, painless, versatility, and paramount patient compliance. The demand of fast disintegrating tablets has been growing, during the last decades especially for geriatric and pediatric patients due to dysphasia. The demand of fast disintegrating tablets has been growing during the last decade, due to the characteristics of fast disintegrating sublingual tablets for the potential emergency treatment. In terms of permeability, the sublingual area of the oral cavity (i.e, the floor of the mouth) is more permeable than the buccal (cheek) area, which in turn is more permeable than the palatal (roof) of the mouth. Drug delivery through the oral mucous membrane is considered to be a promising alternative to the oral route. These tablets disintegrate and dissolve rapidly in saliva due to interaction with our salivary enzymes.

KEYWORDS: Sublingual drug delivery, Improved bioavailability, Tecnique, Evaluation.

INTRODUCTION

Oral administration is a route of administration where a substance is taken through the mouth. Many medications are taken orally because they are intended to have a systemic effect, reaching different parts of the body via the bloodstream. Tablet is defined as a compressed solid dosage form containing medicaments with or without excipients. According to the Indian Pharmacopoeia Pharmaceutical tablets are solid, flat orbiconvex dishes, unit dosage form, prepared by compressing a drugs or a mixture of drugs, with or without diluents. They vary in shape and differ greatly in size and weight, depending on amount of medicinal

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MICROSPHERE-AS A SUSTAIN DRUG DELIVERY SYSTEM

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ABSTRACT

Now a day the current growth in new drug delivery systems plays a dynamic role in pharmaceutical industries. Microspheres are normally free flowing powders lying of proteins or synthetic polymers requiring a particle size reaching from 1-1000μm. The variety of Methods for the preparation of microspheres offers a Variety of prospects to control features of drug administration and improve the therapeutic efficacy of a given drug. Now a day, the scope of controlled drug delivery system is extremely prompting the pharmaceutical dosage forms because it offers a varied range of products. Out of all controlled release products, Microspheres is one amongst all because of the controlled release and sustained release properties. This paper concentration on the various types of microspheres along with their technique of preparation and basic technique to evaluate its efficacy with greatest significant highlights on pharmaceutical application of microspheres by means of microspheres reserved by various routes of system such as oral, transdermal, parenteral etc.

KEYWORDS: Microspheres, controlled release, novel drug delivery, Size 1-1000μm.

INTRODUCTION

Microspheres are small spherical particles with diameters in the micrometer range (typically 1μm. to 1000μm). Microspheres are sometimes referred to as microparticles. Microspheres can be manufactured from various natural and synthetic materials. Glassmicrospheres, polymer microspheres and ceramic microspheres are commercially available. Solid and hollow microspheres vary widely in density and therefore, are used for different applications. Hollow microspheres are typically used as additives to lower the density of a material. Solid

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E-Cigarettes: Potential benefits and harms

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Abstract
Electronic cigarette (e-cigarette) is a device developed with intent to enable smokers to quit smoking and avoid the unhealthful effects of cigarettes. Electronic cigarettes (e-cigarettes) are products that deliver a nicotine-containing aerosol (commonly called vapor) to users by heating a solution typically made up of propylene glycol or glycerol (glycerin), nicotine, and flavoring agents invented in their current form by Chinese pharmacist Hon Like in the early 2000s. The US patent application describes the e-cigarette device as "an electronic atomization cigarette that functions as substitutes for quitting smoking and cigarette substitutes". The increase in its use during the adolescence period is attention-grabbing. Despite the fact that e-cigarette has become popular in a dramatic way, there are certain differences of opinion regarding its long-term effects on health, in particular In this article, we are discussing about the potential benefits and harms of the e-cigarette or electronic cigarette among the users.

Keywords: electronic cigarette, aerosol, adolescent, harmful

1. Introduction

Electronic cigarettes (e-cigarettes), a type of electronic nicotine delivery system, represent a dramatic new nicotine delivery technology. These devices can deliver nicotine along with other constituents via an aerosol, which is then inhaled, mimicking the feel of a conventional cigarette. This may serve to satisfy many of the behavioral and sensory cues of smoking in addition to providing nicotine. Introduced in the United States in 2007, e-cigarettes sales have been doubling annually and by 2013 were projected to become a nearly 2 billion industry [1]. This rapid uptake suggests e-cigarettes are a disruptive innovation to the conventional cigarette market. They may represent a less risky alternative to conventional cigarettes because users are not exposed to carbon monoxide (CO) or other toxicants at the same levels produced by the combustion of tobacco as in conventional cigarettes. However, the consequences of long-term exposure to the constituents of e-cigarettes remain unknown. Data on the effects of e-cigarettes on human physiology and health are limited in part due to their recent emergence as well as their rapidly evolving construction and lack of standardization [2]. These topics were further dividedinto subsections, presented below. In addition, regulatory perspectiveswere provided by representatives from the FDA Center for Tobacco Products (CTP) and the FDA Center for Drug Evaluation and Research (CDER).e-electronic cigarettes (e-cigarettes) have become increasinglypopular over the last decade. Although they areperceived by many to be safer than traditional cigarettes, many of the devices still contain nicotine, and inhaling their vapors exposes users to toxic substances, including lead, cadmium, and nickel—heavy metals that are associated withsignificant health problems. Withoutregulation, there is no way to know with certainty how muchnicotine the devices contain and what else is in them.Things, however, are changing. The Food and Drug Administration (FDA) recently announced that e-cigarettes andother tobacco products like cigars and hookahs will now beregulated in the same way the government regulates tobacco cigarettes and smokeless tobacco.

1.1 Government Regulation of E-cigarettes

In 2016, the FDA established a rule for e-cigarettes and their liquid solutions. Because e-cigarettes contain nicotine derived from tobacco, they are now subject to
Government regulation as tobacco products, including the requirement that both in-store and online purchasers be at least 18 years of age.

2. What Are E-Cigarettes

- E-cigarettes are known by many different names. They are sometimes called "e-cigs," "e-hookahs," "modes," "valepes," "vales," "tank systems," and "electronic nicotine delivery systems."
- Some e-cigarettes are made to look like regular cigarettes, cigars, or pipes. Some resemble pens, USB sticks, and other everyday items.
- E-cigarettes produce an aerosol by heating a liquid that usually contains nicotine—the addictive drug in regular cigarettes, cigars, and other tobacco products—flavorings, and other chemicals that help to make the aerosol. Users inhale this aerosol into their lungs. Bystanders can also breathe in this aerosol when the user exhales into the air.
- E-cigarettes can be used to deliver marijuana and other drugs.(fig.1) [3]

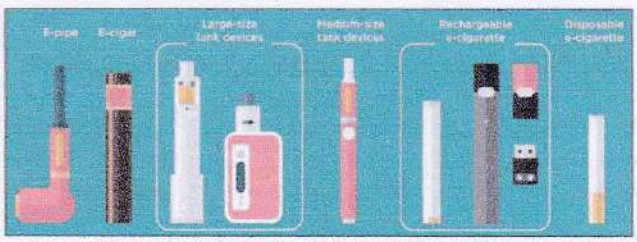

Fig 1: Various types of e-cigarette devices

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Formulation and Evaluation of Herbal Anti-Acne Gel Containing Neem and Garlic Extract

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Keywords: Herbal drug, Anti-acne, Gel, *Azadirachta indica*, *Allium sativum*, *Staphylococcus aureus*

ABSTRACT

Acne vulgaris is a long term inflammatory disorder of the pilosebaceous unit that leads to the formation of inflammatory lesions, seborrhea, comedones, etc. *Propionibacterium acnes* and *Staphylococcus epidermidis* have been recognized as pus-forming bacteria triggering inflammation in acne. *Staphylococcus aureus* support to cause inflammation in acne. Natural remedies are more acceptable in the belief that they are suffering from fewer side effects than the synthetic ones. Herbal formulations have a growing demand in the global market. This present research work aims to formulate and evaluate herbal antiacne gel containing ethanolic extract of Neem (*Azadirachta indica*) and Garlic (*Allium sativum*). The herbal antiacne gel was optimized by preparing 3 formulations (F1, F2, F3) using an extract of Neem, Garlic, and a combination of these two extracts. The formulation was evaluated for various parameters like Physical appearance, pH, Drug content, Spreadability, Extrudability, Anti-acne activity assay against S. aureus was successfully studied. Amongst all the formulation studied, batch F3 was found optimum for all the parameters. Both extracts i.e. ethanolic extract of *Azadirachta indica* and *Allium sativum* on combination show potential effect against Acne vulgaris and also exert a synergistic effect on the bacteria.

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A SHORT REVIEW ON-GEL AS A TOPICAL DRUG DELIVERY SYSTEM

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ABSTRACT

Gel preparation delivers well use property and stability in comparison to cream and ointment. Topical gel drug administration is a generalized drug delivery system anywhere in the body through ophthalmic, rectal, vaginal and skin as topical routes. It is superior to observe patient to topical preparations in dealing with chronic skin diseases like fungal infections, acne and psoriasis. Skin is one of the most broad and easily available organs on human body for topical organization and is key route of topical drug delivery system. There is numbers of parameters used to evaluate the gel but most of the time gels are evaluated by following parameters such as pH, homogeneity, grittiness drug content, viscosity, spread ability, skin irritation studies, in-*vitro* release, Stability.

KEYWORDS: Topical gel, percutaneous penetration, Skin, In-*vitro* release.

INTRODUCTION

Gels are semisolid preparations proposed for use on the skin or the reachable mucous membranes like oral cavity. Gels are Preparation of two interpenetrating methods where the colloidal particles, also identified as the gelator or gallant, are homogenously spread throughout a dispersion medium or solvent developing a three dimensional medium recognized as the gel.[1] The formulations useful on the skin surface are largely categorized in to two sets such as topical and transdermal. Topical formulations transport drug to local zone of skin without systemic contact. On the other hand, transdermal formulations useful to the skin surface for the purpose of delivering and preserving actual concentration of drug in the systemic exchange.[2] The topical drug delivery denotes the application of drug onto the body

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RESEARCH ARTICLE

Study of CNS Depressant activity of Ethanolic extract of *Madhuca longifolia* Flower

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ABSTRACT:
Depression is a heterogeneous mood disorder characterized with regular negative moods, decreased physical activity, feelings of helplessness, and is caused by decreased brain levels of monoamines such as noradrenaline, dopamine, and serotonin. Therefore, drugs restoring the reduced levels of these monoamines in the brain either by inhibiting monoamine oxidase or by inhibiting reuptake of these neurotransmitters might be fruitful in the treatment of depression that has been classified and treated in a verity of ways. Ethanolic extract of Flowers of *Madhuca longifolia* was used as test drug in the doses 100, 200, 400 mg/kg on Mice of body weight 20-25gm for evaluation of CNS depressant activity on Actophotometer. As dose increased locomotor activity was decreased. The significantly decreased in locomotor activity investigated with 400mg/kg Ethanolic extract of *Madhuca longifolia* with % inhibition of 55.92% as compared with control group who received distilled water 1.64%. The Ethanolic extract of *Madhuca longifolia* has shown specifically very negligible decline in locomotor activity with all dose 100,200%400 mg/kg by 1.46, 12.85 and 55.92 respectively. All extract have showed reduction in the locomotor activity which may be due to the CNS depressant property of the drug.

KEYWORDS: CNS depressant, *Madhuca longifolia*, locomotor activity, Ethanolic extract, EEML.

1. INTRODUCTION:
The universal role of plants in the treatments of disease is exemplified by their employment in all major system of medicine irrespective of the philosophical premise. (Lyle E Craker et al, 2002). Plants are having a great important to pharmacy to pharmaceutical Industry. Because these are rich source of drugs and of chemical for diversity for screening programs aimed at new drug discovery. (Shu: YZ et al 1998).

Most of the drugs which are in the Indian medicinal system are from plant source. The duration of the mediaeval period is known as between 8th century to 18th century AD (Heinrich Michael et al, 2004). Screening programs which are based on the part of the natural plant have achieve great success in identifying very useful chemical constituents such as anticancer agent like vinblastine and vincristine. Some cardio protective drugs like digoxin in digitoxin (Chopra RN, 1034) plants have at one time supplied virtually all culture with food. Clothing shelter and medicine approximately 10 of 15% of roughly 3,00,000 species of the higher pants have been used in traditional medicine system from last several years, as they are flows from generation to generation. The Indian subcontinent is enriched by verity of flora both aromatic and medicinal plants. This is due to the wide diversity of climatic condition available in India raging from deserts to swap lands. (Chopra RN, et al 1034).

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REVIEW ON BASIC FACTS & INFORMATION OF CORONAVIRUS

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ABSTRACT
Coronaviruses are enveloped non-segmented positive-sense RNA viruses belonging to the family Coronaviridae and the order Nidovirales which is broadly distributed in humans and other mammals. Although most human coronavirus infections are mild, but the epidemics of the two beta coronaviruses, Severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV), have caused more than 10,000 cumulative cases in the past two decades. And now a novel coronavirus namely called as 2019-nCoV is a new strain which has not been previously identified in humans emerged as major global health threats. Thus this study aims to assess the awareness of this novel coronovirus among general public and to provide some basic facts & information on this novel coronavirus. This study basically involves the general guidelines for public that how one should react in concern of coronavirus. Also it includes the recommendations from WHO for general public that how to protect oneself from this life threatening virus. Our recommendation is to conduct a continuous health education campaign about the awareness of coronavirus and also to provide the general guidelines & some basic information about symptoms, spreading pattern, mutation, infection, care and treatment of coronavirus among general public.

KEYWORDs: Coronavirus, Novel Coronavirus, MERS-CoV, SARS-CoV, 2019-nCoV

BACKGROUND
Coronaviruses are enveloped non-segmented positive-sense RNA viruses belonging to the family Coronaviridae and the order Nidovirales which is broadly distributed in humans and other mammals. Although most human coronavirus infections are mild, the epidemics of the two beta coronaviruses, severe acute respiratory syndrome coronavirus (SARS-CoV)[1-3] and Middle East respiratory syndrome coronavirus (MERS-CoV),[4, 5] have caused more than 10,000 cumulative cases in the past two decades, with mortality rates of 10% for SARS-CoV and 37% for MERS-CoV.[6,7]

These two more novel coronaviruses (CoVs) have emerged as major global health threats since 2002, namely severe acute respiratory syndrome coronavirus (SARS-CoV; in 2002) that spread to 37 countries, and Middle East respiratory syndrome coronavirus (MERS-CoV; in 2012) that spread to 27 countries. SARS-CoV caused more than 8000 infections and 800 deaths, and MERS-CoV infected 2494 individuals and caused 858 deaths worldwide to date. Both are zoonotic viruses and having epidemiologically similar, except that SARS-CoV has virtually no subclinical manifestation, whereas MERS-CoV behaves more similarly to the other four commonly circulating human CoVs, with a substantial proportion of asymptomatic infections. Symptomatic cases of both viruses usually present with moderate-to-severe respiratory symptoms that often progress to severe pneumonia. A notable common characteristic of both SARS-CoV and MERS-CoV is that they have low potential for sustained community transmission (ie, low basic reproductive number).[8,9,10] However, the most worrisome aspect is the ability of the viruses to cause unusually large case clusters via super spreading, which can exceed 100 individuals and are apparently seeded by a single index case.[11-13]

INTRODUCTION
Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). While a novel coronavirus namely called as 2019-nCoV is a new strain that has not been previously identified in humans.[14]

Coronaviruses are zoonotic, meaning they are transmitted between animals and people. Detailed investigations found that SARS-CoV was transmitted from civet cats to humans and MERS-CoV from dromedary camels to humans. Several known coronaviruses are circulating in animals that have not yet infected humans.[15]

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FORMULATION DEVELOPMENT AND EVALUATION OF PAROXETINE HYDROCHLORIDE HEMIHYDRATE pH INDUCED *IN- SITU* NASAL GEL DRUG DELIVERY SYSTEM

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ABSTRACT

Paroxetine hydrochloride hemihydrate undergoes hepatic first pass, hence it shows poor bioavailability. In this study attempt has been done to improve bioavailability by formulating pH induced *in-situ* gel; formulation was developed to reduce the mucociliary clearance by using Mucoadhesive polymer in gel, thereby increasing the contact of formulation with nasal mucosa and hence improving the absorption of drug. The *in situ* gelation was achieved by the use of Carbopol 934, which exhibit pH induced gelation property and HPMC K4M, HPMC K15M was used as the mucoadhesive agent. Gels were prepared by previously reported cold technique and characterized by Gelation study, Gel strength, Permeation Studies, Histopathological Evaluation, pH, Drug Content, Rheological studies, drug polymer interaction, Stability study. In *in-vitro* drug release study was found 87.87-96.23%, pH of gel is in range of 5-5.9, drug content 91.30-97.13%. Rheological study of gel formulation indicated that increase in polymer concentration increases the viscosity, gel strength was found in range of 25-41 sec., Spectral study revealed no interaction between drug and polymer as there is no shifting of drug λ max. Stability study indicates that there was no significant change in the Paroxetine hydrochloride hemihydrate. Paroxetine hydrochloride hemihydrate formulated as bioadhesive pH induced solution for nasal administration could have potential to avoid first-pass effect than oral route, thus improve bioavailability of drug and as a safe and sustained release nasal delivery system to control depression.

KEYWORDS: Nasal drug delivery, In Situ nasal Gel, Mucoadhesive, Formulation,

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REVIEW ON BUCCUL PATCHES AS A NOVEL DRUG DELEVERY SYSTEM

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ABSTRAC

Buccal drug delivery systems relate with the mucus layer casing the mucosal epithelial superficial, and mucin molecules and rise the residence time of the dosage form at the location of absorption. The objective of this article is to review buccal drug delivery talk over the structure and environment of the oral mucosa and methodology in evaluating buccal formulations. This review also places of interest in a brief description of advantages, limitations of buccal drug delivery. The drugs which have native action or those which have extreme absorption in gastrointestinal tract (GIT) need to increased period of stay in GIT. Thus, buccal dosage forms are advantageous in enhancing the drug plasma concentrations and also therapeutic activity. Buccal Patches are the type of drug formulation that has normally a different way of administration through the buccal mucosa for drug delivery. These patches have a tendency to assistance drug enter directly the systemic circulation fugitive hepatic first pass metabolism.

KEYWORDS: Buccal Delivery, Oral Mucosa, Mucoadhesion and Bio-adhesive Polymers. Buccal Patches, Bioavailability.

INTRODUCTION

Buccal delivery of drugs is one of the alternatives to the oral route of drug administration, particularly to those drugs that undergo first-pass effect. [1]Amongst the various routes of administration tried so far in the novel drug delivery systems, localized drug delivery to tissues of the oral cavity has been investigated for the treatment of periodontal disease, bacterial and fungal infection. Over the decades mucoadhesion has become popular for its potential to optimize localized drug delivery, by retaining a dosage form at the site of action

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A Short Review On Benzimidazole and Their Derivatives

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ABSTRACT

Benzimidazole derivatives are versatile nitrogen containing heterocyclic compound which have long been known as a promising class of biologically active compounds possessing wide variety of a biologically active compound like antiprotozoal, anticoagulant, antifungal, antihistaminic, antiulcer activities. Benzimidazole is outstanding effective compounds and these are a number of reviews available for biochemical and pharmacological studies. This review article covers the most active benzimidazole derivative and discusses the structure and their uses.

Keyword: Benzimidazole, Heterocyclic compound, Benzimidazole derivative, Antifungal, Antiprotozoal activity, Antihistaminic

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Appetite-Regulating hormones block alcohol cravings

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Abstract
Alcohol is commonly viewed as a psychoactive substance that primarily affects brain function. The effects of alcoholism on modern society are vast and deeply rooted in our history. Alcohol consumption causes problems at the individual, social, health and financial level. An alcohol craving is an intense desire or compulsion to drink alcohol. There exist commonalities between over-eating and over-consumption of alcohol. Evidence is growing that appetite regulating peptides such as leptin and ghrelin are altered in alcoholism. The neuropeptides leptin and ghrelin are involved in the appetite regulating network consisting of distinct orexigenic (ghrelin) and anorexigenic (leptin) circuitries. Recently, it was suggested that these hormones, ghrelin and leptin may play a role in alcohol use disorders. Therefore the goal of this review is to discuss the results of some recent investigations of the potential interactions of these systems with acute and chronic alcohol responses and the potential treatment for alcohol dependence.

Keywords: alcoholism, craving, ghrelin, leptin, drug dependence

Introduction

Alcoholism is a condition in which an individual becomes dependent on alcohol. Dependence on alcohol interferes with the individual's day to day activities along with his personal and professional life. Alcoholism has deleterious effects on one's overall health. Organs such as the brain, liver, heart, kidneys and stomach are most affected. Drinking alcohol during pregnancy causes damage to the brain of the unborn child.

Alcoholism is the most severe form of alcohol abuse and involves the inability to manage drinking habits. It is also commonly referred to as alcohol use disorder. Alcohol use disorder is organized into three categories: mild, moderate and severe. Each category has various symptoms and can cause harmful side effects. Individuals struggling with alcoholism often feel as though they cannot function normally without alcohol. This can lead to a wide range of issues and impact professional goals, personal matters, relationships and overall health. Over time, the serious side effects of consistent alcohol abuse can worsen and produce damaging complications.

- **Common signs of alcoholism include**
  - Spending a substantial amount of money on alcohol
  - Being unable to control alcohol consumption
  - Craving alcohol when you're not drinking
  - Feeling the need to keep drinking more
  - Behaving differently after drinking
  - Putting alcohol above personal responsibilities
- **Several short-term effects of alcohol abuse may produce**
  - Slow reaction time
  - Reduce brain activity
  - Lowered inhibitions
  - Restlessness
  - Blurry vision
  - Difficulty breathing
- **Here are some of the long-term health conditions caused by alcohol**
  - Brain defects
  - Wernicke-Korsakoff syndrome (a neurobiological disease)
  - Bone loss
  - Liver disease
  - Heart problems
  - Increased risk of cancer
  - Vision damage
  - Diabetes complications

An alcohol craving is an intense desire or compulsion to drink alcohol. When people are actively drinking, cravings keep them locked in the vicious cycle of addiction. During active addiction, people will give in to cravings and continue to drink because it keeps their blood alcohol level to a point where they won't experience the symptoms of withdrawal.

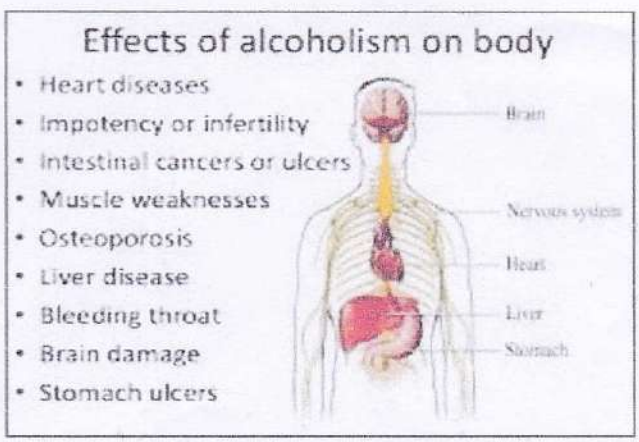

Fig 1: Effect of alcoholism on body [6]

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3-D PRINTING TECHNOLOGY: THE PROMISING FUTURE IN MEDICINE

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ABSTRACT

The interindividual variability is an increasingly global problem when treating patients from different backgrounds with diverse customs, metabolism, and necessities. Dose adjustment is frequently based on empirical methods, and therefore, the chance of undesirable side effects to occur is high. Three-dimensional (3D) Printed medicines are revolutionsing the pharmaceutical market as potential tools to achieve personalized treatments adapted to the specific requirements of each patient, taking into account their age, weight, comorbidities, pharmacogenetic, and pharmacokinetic characteristics. Three-dimensional printing (3DP) enables the development of diverse geometries through computer aided design using different techniques and materials for desired applications such as pharmaceutical drug delivery medicine. Three dimensional printing (3DP) technology is a novel technique for rapid prototyping, which constructs solid objects by deposition of several layers in sequence. The introduction and application of 3D printing have promoted enormous innovations in many diverse fields, including aerospace industry, architecture, tissue engineer, biomedical research and pharmacy. The main objective of this study is to review existing literature about 3D printing to better understand how this technology could assist doctors and health systems in future.

KEYWORDS: 3D-printing, computer aided drug design, pharmacy, Spritam, FDA.

INTRODUCTION

The technological advancements in the pharmaceutical field are continuously improving and provide various possibilities for meeting the needs of personalized drug therapy. The three-

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A FORMULATION & EVALUATION OF MUCOADHESIVE BENZOCAINE GEL

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ABSTRACT
Gel dosage forms are successfully used as drug delivery systems considering their ability to control drug release and to protect medicaments from a hostile environment. The aim of this work was to investigate the properties of carbopol 934, HPMC K4M polymeric system in water-miscible co-solvents such as glycerin and alcohol. Benzocaine is a local anesthetic, treatment of mouth ulcer and mucosal pain relief. The mucosal gel formulation is applied in the treatment of dental pain Samples were prepared by simply dispersing different amounts of Carbopols (0.2-0.4%) into the alcoholic solution at the room temperature and were keep at 27,30 and 31°C. All these systems were then characterized for distribution, bio adhesiveness on the mucosa, physical stability and drug release. The Franz diffusion cell used to study in vitro drug release. The increase in carbopol concentration caused increased viscosity and bio adhesiveness. Neutralization of pH in various concentrations of carbopol gels showed resulted in increased viscosity. A relationship between the viscosity and bioadhesive strength was shown in the neutralized carbopol gels. On the other hand, the results indicated that increasing amount of carbopol 934,HPMC K4M and glycerine reduced drug release.

KEYWORDS: Benzocaine, Carbopol934, HPMC K4M, Glycerin, Ethanol, Camphor.

INTRODUCTION

INTRODUCTION OF GEL

The word "gel" is derived from "gelatin" & both "gel" & "jelly"" Can be traced back to the Latin gele for "frost" & gelare, meaning freeze or congeal. This origin indicates the essential idea of liquid setting to a solid like material that does not flow, but is elastic & retains liquid characteristics. The difference between gel & jelly remains somewhat arbitrary, with some differences based on the field of applications.

The gels as semisolid system consisting of either suspension made up of small inorganic particles or large molecules interpenetrated by a liquid. Where the gel mass consists of a network of small discrete particles the gel is classified as two –phase system.

Single- phase gels consists of organic macromolecules uniformly distributed throughout a liquid in such a manner in that no apparent boundaries between the dispersed macromolecules and the liquid. Single phase gels and jellies can be described As three dimensional networks formed by adding macromolecules such as proteins, polysaccharides, and synthetic macro molecules to appropriate liquids. In pharmaceuticals applications, water and hydro alcoholic solutions are common many polymer gels exhibit reversibility between the gel state and sol, which is the fluid phase containing the dispersed or dissolved macromolecules.

However, formation of some polymer gels is irreversible because their chains are covalently bonded. The three dimensional networks formed in two phases gels in and jellies is formed by several inorganic colloidal clays. Formation of these in organic gels is reversible. Gels are generally considered to be more rigid than jellies because gels consists of more covalent cross links, a higher density of physical bonds, or simply less liquid gel – forming polymers procedure materials that span a range of rigidities , beginning with a sol and increasing in rigidity to a mucilage, jelly, gel and hydro gel.

The physical properties of gels and jellies can be classified based on two groups. Transitional properties associated with gels and jellies can be classified based on two groups. Transitional properties and rheological properties, yield Point and rupture Spectrophotometric and thermal technique are used identify gel microstructures (physical junction zones) and their related transitional properties. For example, nuclear magnetic resonance (NMR) spectroscopy measures the structural and dynamic characteristics of the polymer just prior to aggregation and gel formation and circular dichroism (CD) spectroscopy measures the conformational changes of the polymer during network

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FORMULATION DEVELOPMENT AND EVALUATION OF FAST DISSOLING TABLET OF LABETALOL HCL

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ABSTRACT

Delivery of drug is always been a challenge and is the most important aspect in formulation. Drug are usually delivered via different delivery systems and selection of the system depends on drug solubility, bio available half life, site of action etc. Oral delivery is usually the preferred route of drug administration, and there have been many advances in controlling the release rate of a drug and its bioavailability. Increased patient compliance is important for any Drug delivery system. Many patients do not adhere to a regime of prescribed drugs because of difficulty in administration or the taste of a drug. So it is vital to ensure the convenient administration of a drug. In the present work, fast dissolving tablet of Labetalol Hcl prepared using novel co-proceed superdisntegrants and physical mixtures consisting of avicel pH 102 and Ac-Di-sol in the different ratio and in vice versa. Labetalol Hcl is a drug of choice which is used in treatment of Hypertension and Angina. Drug compatibility with excipients was checked by FRIR studies. After examining the flow properties of the powder blends the results are found to be with in prescribed limits and indicated good flow properties. It was then subjected to tablet compression. All the formulation were subjected to post compression parameters like hardness and friability and they showed good mechanical strength and resistance. From this study, it can be concluded that dissolution rate of Labetalol Hcl FDTs can be enhanced by the use of coprocessed superdisintegrants.

KEYWORDS: Formulation, Development, Labetalol Hcl, FAST Dissolving.

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Anthelmintic Activity of *Areca catechu* Leaves on *Pheritima posthuma*

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Keywords: *Areca catechu*, anthelmintic, extract and medicinal plants, *Pheritima posthuma*.

ABSTRACT

The anthelmintic property of fresh aqueous + acetone extract of *Areca catechu* belonging to family Arecaceae was studied for anthelmintic activity against *Pheritima posthuma* (Indian earthworm). Four concentrations (25, 50, 75 and 100 mg/ml) of leaves extract were studied in a bioassay, which involve the determination of time of paralysis and time of death of the worms. 100 mg/ml conc. of aqueous + acetone extract of leaves of *Areca catechu* reveal considerable anthelmintic activity as compared to other three conc. and piperazine citrate (10 mg/ml). Piperazine citrate and saline water were including in the assay as standard reference drug and control, respectively.

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FORMULATION AND EVALUATION OF DRAGON FRUIT FACIAL CREAM

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ABSTRACT
Hylocereuspolyrhizus and Hylocereusundatus are two varieties of the commonly called dragon fruits, belongs to the Cactaceae family. Dragon fruit contains several types of antioxidants (Betalains, Hydroxycinnamates, Flavonoids) which protect cells from unstable molecules called free radicals, which are linked to chronic disease risk and aging. Dragon fruit is also rich in phyto albumins and vitamin C which are highly valued for their antioxidant properties so make your skin tighter, more flexible and bless you with a beautiful healthy glow. Regular use of this prepared dragon fruit Cream on the face can help in slowing down the process of ageing. It is also used in treating acne and sunburn. Also known as Pitaya, each dragon fruit contains approximately 60 calories. Dragon fruits are rich in vitamins including vitamin C, B1, B2 and B3. They are also rich in minerals including calcium, iron, magnesium and phosphorus. They are also a good source of fibre, protein and omega essential fatty acids.

KEYWORDS: Facial Cream, Dragon Fruit, Evolution Parameters.

INTRODUCTION
Topical drug administration is a localized drug delivery system anywhere in the body through vaginal, ophthalmic, rectal and skin as topical routes. A dermatological delivery system is one that is applied to skin by inuction spraying or dusting. The topical or dermatological preparation are applied to the skin for their physical effects i.e. for their ability to act as skin protestants, cosmetics, lubricant, rubifaciant, counterirritant, astringent, cleansing agent, keratolytics and depilatory agents, altering pigmentation, sclerosing agents etc. A large number of agents have been incorporated into the topical drug delivery system for their therapeutic effectiveness for local or systemic use that includes anesthetic, anti-inflammatory, corticosteroids, antibacterials, antifungal, scabicides, enemas, anti leprotics and sunscreen agents.

Classification of Topical medications
- ✓ Topical solution
- ✓ Lotion
- ✓ Shake lotion
- ✓ Cream
- ✓ Ointment
- ✓ Gel[1]

Creams are semisolid dosage forms containing one or more drug substances dissolved or dispersed in a suitable base. This term has conventionally been applied to semisolids that possess a relatively fluid consistency formulated as either water-in-oil (e.g., Cold Cream) or oil-in-water (e.g., Fluocinolone Acetonide Cream) emulsions. However, more recently the term has been limited to products consisting of oil-in-water emulsions or aqueous microcrystalline dispersions of long-chain fatty acids or alcohols that are water washable and more cosmetically and aesthetically acceptable.[2] A good cream should have the stable, good appearance, melt or soften on application to the skin, spread easily without too much drug, not feel greasy or oil, a light emollient film should remain on the skin after use of the cream and penetrate the skin easily.[3]

Advantage[4]
- Avoidance of first pass metabolism
- Convenient and easy to apply.
- Avoid of possibility.
- Inconveniences of intravenous therapy and of the varied conditions of absorption. Like pH changes presence of enzymes gastric emptying time etc.
- Reaching of efficacy with lower total daily dosage of drug by continuous drug input.
- Avoid fluctuation of drug levels inter and intra patent variations.

Disadvantage[5]
- Skin irritation of contact dermatitis may occur due to the drug and /excipients
- Poor permability of some drugs through the skin.

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FORMULATION AND EVALUATION OF TOPICAL FAIRNESS FACE WASH OF TURMERIC, NEEM AND LEMON

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ABSTRATE

Most of the fairness enhances agent were originally derived from plants and herbal medicines, referee to the any extract of parts of plants fir medicinal purpose. Along with other doses form, herbal drug are also formulated in the form of gels. A gelis a jelly like semisolid preparation used on variety of body surfaces. The objective of the study was to formulate and evaluate the fairness inhance gel from the local herbal medicinal plants. The extract of the selected plants was taken in different ratio randomly to formulated gel. The topical formulations weredeveloped and tested for physical parameters, appearance, pH, spread ability was successfully studies.

KEYWORD: herbal drug, fairness face wash, Azadirachtaindica, curcuma longa, citrus limon.

1 INTRODUCTION OF GEL

The word "gel" is derived from "gelatin" & both "gel" & "jelly"' Can be traced back to the Latin gele for "frost" &- gelare, meaning freeze or congeal. This origin indicates the essential idea of liquid setting to a solid like material that does not flow, but is elastic & retains liquid characteristics. The difference between gel & jelly remains somewhat arbitrary, with some differences based on the field of applications.

The gels as semisolid system consisting of either suspension made up of small inorganic particles or large molecules interpenetrated by a liquid.

Where the gel mass consists of a network of small discrete particles the gel is classified as two –phase system.

Single- phase gels consists of organic macromolecules uniformly distributed throughout a liquid in such a manner in that no apparent boundaries between the dispersed macromolecules and the liquid. Single phase gels and jellies can be described As three dimensional networks formed by adding macromolecules such as proteins, polysaccharides, and synthetic macro molecules to appropriate liquids. In pharmaceuticals applications, water and hydro alcoholic solutions are common many polymer gels exhibit reversibility between the gel state and sol, which is the fluid phase containing the dispersed or dissolved macromolecules.

However, formation of some polymer gels is irreversible because their chains are covalently bonded. The three dimensional networks formed in two phases gels in and jellies is formed by several inorganic colloidal clays. Formation of these in organic gels is reversible. Gels are generally considered to be more rigid than jellies because gels consists of more covalent cross links, a higher density of physical bonds, or simply less liquid gel – forming polymers procedure materials that span a range of rigidities, beginning with a sol and increasing in rigidity to a mucilage, jelly, gel and hydro gel.

The physicalproperties ofgels and jellies can be classified based on two groups. Transitional properties associated with gels and jellies can be classified based on two groups. Transitional properties and rheological properties, yield Point and rupture Spectrophotometric and thermal technique are used identify gel microstructures (physical junction zones) and their related transitional properties. For example, nuclear magnetic resonance (NMR) spectroscopy measures the structural and dynamic characteristics of the polymer just prior to aggregation and gel formation and circular dichroic (CD) spectroscopy Measures the conformational changes of the polymer during network formation. Mechanical techniques are used to determine rheological properties of gel. These techniques employ either small deformation measurements that yield viscoelastic parameters or large deformation measurements that generate complete stress strain profile, which include failure parameters.[1] The majority of gels are formed by the aggregation of colloidal sol properties, the solid or semisolid system so formed being interpenetrated by

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Research Article

RESEARCH: CHOCOLATE FORMULATION AS DRUG DELIVERY SYSTEM FOR PEDIATRICS

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ABSTRACT

The primary objective of this study was to formulate and evaluate the nutritious chocolate containing herbal nervine tonics that will have the extra beneficiary learning and memory enhancing effect without any side effects. Hence, in the present investigation an attempt was made to prepare chocolate formulation of *Convolvulus pluricaulis* and *Bacopa monnieria* which improve the patient's compliances acceptability. The quantitative determination of Bacoside A in *Bacopa monnieria*, scopoletin in *Convolvulus pluricaulis* and its prepared formulation was developed. The prepared chocolate formulation was evaluated for organoleptic properties, pH, blooming test, preliminary phytochemical screening and hardness. Stability study was performed to see the significant changes observed in the physical properties of chocolate.

KEYWORDS: *Bacopa monnieria, Convolvulus pluricaulis*, Bacoside A, Scopoletin, Chocolate.

INTRODUCTION

Chocolate is highly sophisticated and much infinitely adaptable foods that can becombined to create completely different taste and consistency sensations. Chocolate is an anhydrous medium resistant to microbial growth and hydrolysis for water sensitive active agents. Chocolate abundantly contains compounds such as saturated fat, polyphenols, sterols, di and triterpenes, aliphatic alcohols, methylxanthines flavones, antioxidants. Cocoa is the main ingredient of chocolate and it is loaded Chocolate in polyphenols. Chocolate containing the drug in suitable quantity is known as medicated chocolate. Basically there are four types of taste modalities, salty, sour, bitter, sweet through detect the flavors Childrens tastes sensation is much differ than adult infants and more over children have a preference for sweet-tasting substance. Chocolate have been shown to help our body produce chemical known as Serotonin. It makes feel relaxed. Further chocolate is also having some advantages like quick onset of action, reduction in the drug dose of manufacture and the combination of these elements we can scale, increases drug loading capacity. Some drugs are bitter in taste due to which oral administration of bitter drugs leads to patient incompliance especially in children. To overcome this limitation, it is advisable to formulate dosage form which is most acceptable for pediatric patients. Chocolate is one of the most palatable and favorite in children, so we have developed chocolate drug delivery system. [1]

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FORMULATION AND EVALUATION OF METFORMIN MUCOADHESIVE BUCCAL PATCHES

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ABSTRACT

The buccal region of the oral cavity is an attractive target for administration of the drug of choice. To increse bioavailability and prevent first pass metabolism of drug. The aim of present research work was to design and evaluate mucoadhesive buccal patch of Metformin as BCS class II drug to provide controlled predetermined manner drug delivery to the oral mucosa. The patches were prepared using hydroxy propyl methyl cellulose (HPMC K4M & K15) as a mucoadhesive polymers and polyethylene glycol 4000 was used as a plasticizer, the buccal patches are prepared by the solvent casting method. The patches were evaluated for different physical parameters. The prepared patches shows smooth in appearance, uniform thickness, and required surface pH, moisture content, Drug content showed no visible cracks, and show good folding endurance. Results are observe satisfactory. It is also observe that the amount of polymer significantly influenced characteristics like swelling index, mucoadhesive strength and *In vitro* drug release studies were conducted for Metformin buccal patches in phosphate buffer (pH6.8) patches exhibited drug release in the range of more than 101.68% and stability study.

KEYWORDS: Mucoadhesive Buccal patches, Metformin, HPMC K 4M, HPMC K 15.

INTRODUCTION

Oral route has been the commonly adopted and most convenient route for drug delivery. Oral route of administration has been received more attention in the pharmaceutical field because of the more flexibility in the designing of dosage form than drug delivery design for other routes, ease of administration as well as traditional belief that by oral

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REVIEW

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A REVIEW: ROASTED BARLEY AS A PHOTOACOUSTIC CONTRAST AGENT

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ABSTRACT

A contrast agent or contrast medium is a substance used to increase the contrast of structures or fluids within the body in medical imaging. Contrast agents absorb or alter external electromagnetism or ultrasound, which is different from radiopharmaceuticals, which emit radiation themselves. Often, contrast materials allow the radiologist to distinguish normal from abnormal conditions. Contrast materials are not dyes that permanently discolor internal organs. They are substances that temporarily change the way x-rays or other imaging tools interact with the body. Photoacoustic computed tomography (PACT) is an emerging imaging modality. While many contrast agents have been developed for PACT, these typically cannot immediately be used in humans due to the lengthy regulatory process. Contrast agents, in order to be approved for human use, need to go through extensive screening in terms of safety and usability. Researchers bought more than 200 types of tea, chocolate, herbs and other foodstuffs in an attempt to find an edible contrast agent. Roasted barley, a grain used to produce beer, bread and other products, provided the best results. In this article we are reviewing the use of roasted barley as a contrast mediafor imaging swallowing disorders.

KEYWORDS: Photoacoustic computed tomography, barley, contrast agent, barium

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Review Article
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Clove (Syzygium Aromaticum): A Miraculous Spice

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ABSTRACT

Clove (Syzygium aromaticum) is one of the most valuable spices that has been used as food preservatives and also used for the treatment of various medical conditions like dentistry and research confirms it is effective at inhibiting the growth of foodborne pathogens, certain bacteria, and fungi. They are native to the Maluku Islands in Indonesia and are commonly used as a spice, sold both whole and ground. Japanese researchers have discovered that like Eugenia Caryophyllus (also known as clove oil) contains antioxidant properties which help prevent the cell spoil in time causes malignant disease. Buds are harvested when they are under an inch (less than 2 cm.) long, before they turn pink and open. Clove consist of Eugenol (up to 90%), acetyl eugenol, beta-caryophyllene and vanillin; crategolic acid; tannins etc. A dose of 40 to 60 ppm eugenol was found to induce quick anesthesia with a relatively short time for recovery in young trout.

Keyword: Clove, Eugenol, Volatile, Spice, Anesthesia.

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A review on areca catechu plant

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Abstract
Areca catechu L. is a species of palm which grows much of tropical Pacific, Asia, and parts of Africa. The palm is believed to have originated in the Philippines and is widely cultivated in several South Asian and Southeast Asian countries. The seeds of areca nut have been widely used in clinical practices. Areca nut has an important place in the ancient Indian system of medicine such as Ayurveda, Unani and Homeopathy. It is traditionally used in a number of ailments for its Laxative, Digestive, Carminative, Antiulcer, Antidiarrhoeal, Anthelmintic, Antimalarial, Antihypertension, Diuretic, Antibacterial, Hypoglycemic, Antiheartburn activities. Areca leaves also gives Antidiabetic and Antinociceptive activity. Traditional use of the plant for medicinal properties is to be documented for their possible use as future medicines or drugs. There is a need for identifying native natural plant sources to acquire to their recognized medicinal properties, which may widen them to use as new therapeutics for various diseases. In the present article, it has been described about usefulness of arecanut as an herbal drug and its therapeutics application prospects.

Keywords: *Areca catechu*, morphology, pharmacological activities, antimalarial, antihypertension

Introduction
Traditional use of medicines is recognized as a way to learn about the potential of future medicines. Its fruit or seed is also called areca nut or 'Supari'. It has a characteristic astringent and slightly bitter taste [2]. In most parts of India, areca nut is marketed after processing. One type of areca nut is 'Red Supari'. It is obtained by boiling and drying unripe dehusked nuts at different stages of maturity. The other type is 'White Supari' which is obtained by mere drying of ripe nuts and dehusking later on [3]. Recently, the medicinal uses and properties of areca nut were investigated. It has [4], Anti-depressant [5], Anthelmentic [6], Aphrodisiac [7], Hepatoprotective [8], Cytoprotective [9], Anti-tumor [10], Analgesic [11], Antioxidant, Antidiabetic [12], Hypolipidemic [13], Antihypertensive [14], Anti-migraine [15], Antiulcer [16], Wound healing [17], Learning and Memory improvement [18], Anti-aging [19], Anti-malarial [20], etc. In spite of all these medicinal values of areca nut, its chronic consumption or chewing may cause several adverse effects including carcinogenesis [21, 22].

Taxonomical classification
- Kingdom : Plantae
- Order : Arecales
- Family : Arecaceae
- Subfamily : Arecoideae
- Tribe : Arecae
- Subtribe : Arecinae
- Genus : Areca
- Species : *Areca catechu*L

Local names:
- Marathi : Supari
- Hindi : Supari
- Sanskrit : Puga
- Malayalam : Adakka
- Kannada : Adakka
- Malay : Pinang [23]
- Gujarati : Supari
- Tamil : Kamugu
- Bengali : Supari
- Telgu : Pokavakka
- English : Betel tree [1], Supari palm, Pinang Palm

Morphology of plant [24]
Areca nut is an erect, unbranched palm reaching heights of 12-30 m, depending upon the environmental conditions.

1. Stem [25]

Fig 1: Stem of *Areca catechu*

The stem, marked with scars of fallen leaves in a regular annulated form, becomes visible only when the palm is about 3 years old. Girth depends on genetic variationand soil conditions.

2. Roots [26]
Root system is adventitious, typical of monocots.

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RESEARCH ARTICLE

Phytopharmacological Study of *Areca catechu* leaf

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ABSTRACT:

Areca catechu (Arecaceae) is an erect unbranched palm tree, growing mainly in south and Southeast Asian countries. It is commonly used in day to day life. In present investigation an attempt has been made for the pharmacognostic standardization and phytochemical evaluation of *Areca catechu* leaves. The pharmacognostic evaluation comprises of detailed macroscopy, powdered microscopy, quantitative microscopy and physical constants such as ash and extractive values. The leaves extract were subjected to preliminary phytochemical screening. The data obtained in present study will serve as valuable tool for identification, authentication and detection of adulterants standardization and quality control of the drug. In this research work the anthelmintic property of leaves extract of *Areca catechu* belonging to family Arecaceae was studied for anthelmintic activity against Pheritima Posthuma (Indian earthworm). The leaves powder of *Areca catechu* was subjected to successive extraction by maceration using solvents like Acetone + Aqueous, Pet. Ether and Alcohol. Four concentrations (25, 50, 75 and 100 mg / ml) of different extract of leaves were studied in a bioassay, which involved the determination of time of paralysis and time of death of the worms. 100 mg/ml conc. of aqueous + acetone extract of leaves of *Areca catechu* reveal considerable anthelmintic activity as compared to other three conc. and piperazine citrate (10 mg/ml). Piperazine citrate and saline water were including in the assay as standard reference drug and control, respectively.

KEYWORDS: *Areca catechu*, Anthelmintic activity, Phytochemistry.

INTRODUCTION:

Areca catechu of family Arecaceae is an erect unbranched palm reaching heights of 12-30 m, depending upon the environmental conditions also known as supari (Hindi). The adult palm has 7-12 open leaves, each with a sheath, a rachis and leaflets. The leaf stalk extends as the midrib until the end of the leaf and ends as leaflets. Male flowers very numerous, sessile, without bracts; calyx 1-leaved, small, 3-cornered, 3-parted; petals 3, oblong, rigid striated stamens 6, anthers sagittate. Female flowers solitary or 2 or 3 at or near the base of each ramification of the spadix, sessile, without bracts; sepals permanent staminodes 6, connate, styles scarcely any; stigmas 3, short, triangular. Fruit a monocular, one-seeded berry, 3.8-5 cm long, smooth orange or scarlet when ripe, with a fibrous outer layer.[1]

They have various utilities of areca catechu like anthelmentic, Antibacterial, Anti-inflammatory, oxytocic clastogenic, Anti-hypertensive, Anti-covulsant, Anti-venom activity.

The literature has revealed that seeds and leaves of plant contain about six alkaloids of which four (Arecoline, Arecaidine, Guvacine and Guvacolin) has been conclusively identified in biochemical studies. Polyphenols (flavonols and tannins) are responsible for the astringent taste of nut.[2]

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Anthelmintic activity of *Pongamia pinnata* L. leaves on *Pheretima posthuma*

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Abstract
The anthelmintic property of fresh aqueous+ acetone extract of *Pongamia pinnata L.* belonging to family Fabaceae was studied for anthelmintic activity against *Pheretima Posthuma* (Indian earthworm). Four concentrations (25, 50, 75 and 100 mg/ml)of leaves extract were studied in a bioassay, which involve the determination of time of paralysis and time of death of the worms. 100 mg/ml conc. of aqueous + acetone extract of leaves of *Pongamia pinnata L.* reveal considerable anthelmintic activity as compared to other three conc. and Albendazole (10mg/ml).Albendazole and saline water were including in the assay as standard reference drug and control respectively.

Keywords: *Pongamia pinnata L,* pheretima posthuma, anthelmintic activity

Introduction
Karanja is botanically Pongamia pinnata L. belongs to family Fabaceae. Pongamia pinnata is a fast-growing tree which reaches 40 feet in height and spread forming a broad, spreading canopy casting moderate shade mostly found near the river side. Medicines from herbal sources have got a spontaneous importance while considering the side effects of the synthetic and chemical drugs. Plant based medicaments, for centuries; man's prime therapeutic weapons are still in the front line for treating a large number of diseases [1, 2, 3, 4].

All parts of this plant have medicinal properties and traditionally used as medicinal plants. They have been used as crude drug for the treatment of tumors, piles, skin diseases, wounds and ulcers [5]. Besides this, the plant possess antiflammatory, anti plasmodial, antinociceptive, anti-lipidperoxidative, antidiarrheal, antiulcer, antihyperammonic and anti-oxidant activity [6] Particularly, leaves have anthelmintic, digestive and laxative used for inflammations, piles and wounds [7] and juice of the leaves is taken for cold, cough, diarrhoea, dyspepsia, flatulence, gonorrhea and leprosy [8].

Therefore in the present study an attempt was made to find out the anthelmintic activity of leaves of Pongamia pinnata L.

Scientific classification [9]

Kingdom	:	Plantae
Order	:	Fabales
Family	:	Fabaceae
Genus	:	Pongamia
Species	:	*P. pinnata*

Image of *Pongamia pinnata* L. leaves

Fig 1: Leaves of Pongamia pinnata

Materials and Methods
Plant Material
The fresh leaves of *Pongamia pinnata L.*have been collected from the local area at Shahada and authentified by Dr. Santosh K Tayade, HOD of Botany, Art's Science and Commerce College, Lonkheda, Shahada, Dist-Nandurbar (MS).

Worms
Indian earthworms *(Pheretima Posthuma)* were used to study anthelmintic activity. The earthworms were collected from moist soil at local area at Taloda, Dist-Nandurbar.Theaveragesizeofearthwormwas6-8cm.Earth worm. All worms were washed with normals a line, and kept in beakers containing normals aline separately.

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Title Page

Evaluation of Anti-ulcer Activity of leaves of *Alstonia Scholaris* (L) R Br by using Pylorus Ligation Method

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Abstract

Title: Evaluation of Anti-ulcer activity of leaves of *Alstonia Scholaris* (L) R Br by using pylorus ligation method

Context:

Aims: Peptic ulcer, most common disorder of the GIT has multi-factorial causes in its path physiology & cannot achieve a complete eradication with a single drug hence search of drugs from various systems of medicines like Ayurveda, Siddha, Unani is a common practice. The main objective behind this research to give better and safer alternative for synthetic drugs.

Methods and Material: Ulcers were induced in 24 hours fasted albino rats by pylorus ligations. In each induction procedure there were four groups namely control, positive control and two tests and each group containing six animals. In all four separate groups, the groups received oral administration of Hydro-alcoholic extract of *Alstonia Scholaris* (200mg/kg) and *Alstonia Scholaris* (400mg/kg) prior to ulcer induction showed significant reduction in the occurrence of gastric ulcers as compared to control received distilled water and positive control group received Omeprazole (20mg/kg).

Statistical analysis used: The values were expressed as mean ± SEM. Statistical analysis was performed by one way analysis of variance (ANOVA) followed by Tukey multiple comparison test and data on liver weight variations were analyzed using Student's 't' test. P values less than 0.001 Vs control were considered significant

Result: Both test drugs showed significant reduction in gastric juice volume and total acidity as well as significant increase in gastric pH. When anti-ulcer activity of Hydro-alcoholic extract of *Alstonia Scholaris* (200mg/kg) and *Alstonia Scholaris* (400mg/kg) was compared, *Alstonia Scholaris* (400mg/kg) showed more potency than *Alstonia Scholaris* (200mg/kg).

Conclusion: These results emphasize on the need to diversify alternative therapeutic approaches pertaining to herbal medicine. Wherein a single easily available plant may provide answer to several therapeutic challenges as observed in antiulcer activity shown by Hydro-alcoholic extract of *Alstonia Scholaris* (400mg/kg).

Key words: *Alstonia scholaris,* Saptparna, Antiulcer activity, Pylorus ligation, Hydro-alcoholic extract of *Alstonia Scholaris* (HEAS).

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Open Access Review Article

Urolithiasis (Kidney Stones): Current Pharmacological Diagnosis and Management

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ABSTRACT

Kidney stones are a common condition causing significant morbidity and economic burden. The prevalence of Urolithiasis (Kidney stones) is increasing from past 20 years, worldwide 5-15% of the population affected by Urolithiasis. The most common type of kidney stone is calcium oxalate formed in the renal surfaces. The mechanism of stone formation is a complex process which results from several physicochemical events including supersaturation, nucleation, growth, aggregation, and retention of urinary stone constituents within tubular cells. Obese people are known to have a higher risk of stone formation. Metabolic syndrome has resulted in an increasing rate of nephrolithiasis among women. The diagnosis and initial management of urolithiasis have undergone considerable evolution in recent years. This review article provides information about epidemiology, mechanism, diagnosis, and pathophysiology of kidney stone formation, and methods for the evaluation of stone risks for new and follow-up patients.

Keyword: Urolithiasis (Kidney stones), Calcium oxalate, Uric acid stone, kidney, Herbs, *In-vivo* and *in-vitro*.

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INTRODUCTION

Urolithiasis is the presence of calculi in the kidney and/or in any part of the urinary tract, including the ureters and bladder and may develop in one or both of the kidneys. Nearly about 80% of these calculi are composed of calcium oxalate and phosphate.[1] The lifetime risk of urinary stone disease is 12% in males and 6% in females.[2] Urolithiasis is a complex process that is a consequence of an imbalance between promoters (calcium, sodium, oxalate, urate, cystine, low urine pH, low urine flow) and inhibitors (citrate, magnesium, pyrophosphate, Tamm Horsfall protein, urinary prothrombin fragments, glycosaminoglycan osteopontin, and high urine flow) in the kidneys.[3] Calcium oxalate (CaOx) represents up to 80% of analyzed stone. Kidney stone formation is a complex process that results from a succession of several physicochemical events including supersaturation, nucleation, growth aggregation and retention within the renal tubules.[3]

What are kidneys?

The kidneys are two bean-shaped organs in the renal system. The kidneys extend from the level of the twelfth thoracic vertebra to the third lumbar vertebra. The left kidney is closer to the midline, longer and more slender than the right. They help the body pass waste as urine.[2] They also help filter blood before sending it back to the heart. The renal hilum, an entrance to the space in the kidney called the renal sinus, is a cleft lying at the concave medial margin of the kidney and is where the structures serving the kidney enter and exit.[2]

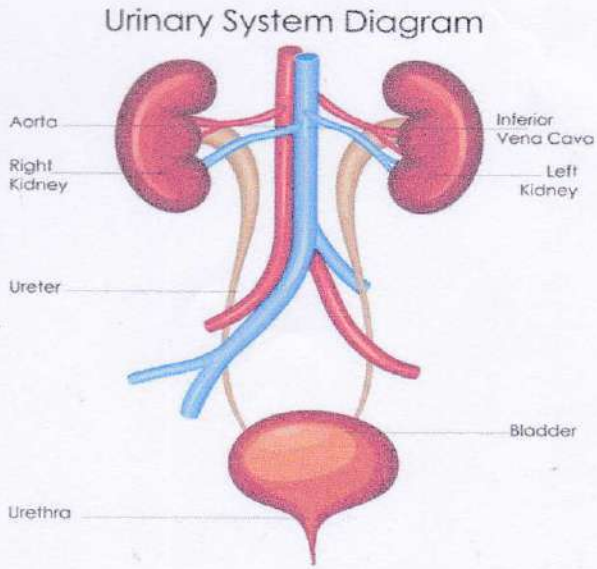

Fig.1: Urinary System Diagram

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RESEARCH ARTICLE

Formulation and Evaluation of Ramipril Fast Dissolving Tablet using Solid Dispersion

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ABSTRACT:
Solubility is a key parameter for oral bioavailability of poorly water soluble drugs. Ramipril is sparingly soluble in water which affects the absorption of drug via GIT, and ultimately makes the drug with low bioavailability. In the present study is solubility enhancement of Ramipril by solid dispersion technique. Solid dispersion of Ramipril is prepared by using two polymers ie: Polyvinyl Pyrrolidone (PVP K30) and Polyethylene Glycol 4000 (PEG 4000) in different ratios (1:1, 1:2, 1:3) using solvent evaporation method. On the basis of % drug content and solubility study S.D.2 and S.D.5 solid dispersion were selected an taken for formulation of fast dissolving tablet of Ramipril. On evaluating various FDTs of Ramipril the best formulation was found to be F6 (1:2 PEG 4000) showed disintegration time was 28 sec. and cumulative percentage drug release 97.68 % in 40 min.

KEYWORDS: Bioavailability, Ramipril, PVP K30, PEG 4000, Solid dispersion.

INTRODUCTION:

The oral route of drug administration is the most common and preferred method of delivery due to convenience and ease of ingestion. From a patient's perspective, swallowing a dosage form is a comfortable and a familiar means of taking medication. As a result, patient compliance and hence drug treatment is typically more effective with orally administered medications as compared with other routes of administration, for example, parenteral.[1] More than 90% of drugs have poor solubility. It is estimated that 40% of active New Chemical Entities (NCEs) identified in combinatorial screening programs employed by many pharmaceutical companies are poorly water soluble.[2] After administering a drug orally, it firstly dissolves in gastric and or intestinal fluids, and then permeates the membranes of the GI tract to reach systemic circulation. Therefore, a drug with poor aqueous solubility will typically exhibit dissolution rate limited absorption, and a drug with poor membrane permeability will typically exhibit permeation rate limited absorption. Unfortunately, many of these potential drugs are abandoned in the early stages of development due to solubility concerns. It is therefore becoming increasingly more important that methods for overcoming solubility limitations be identified and applied commercially such that the potential therapeutic benefits of their active molecules can be realized. Poorly water-soluble drugs are increasingly becoming a problem in terms of obtaining the satisfactory dissolution within the gastrointestinal tract that is necessary for good bioavailability. It is not only existing drugs that cause problems but it is the challenge of medicinal chemists to ensure that new drugs are not only active pharmacologically but have enough solubility to ensure fast enough dissolution at the site of administration, often gastrointestinal tract. Dissolution of solid dosage forms in gastrointestinal fluids is a prerequisite to the delivery of the drug to the systemic circulation following oral administration. Dissolution depends in parts on the solubility of the drug substance in the surrounding medium. Surface area of drug particle is another parameter that influences drug dissolution, and in turn drug absorption, particle size is a determinant of

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Anthelmintic Activity of the Aerial Roots of *Ficus benghalensis*

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Keywords: *Ficus benghalensis,* anthelmintic, *Pheretima Posthuma* and piperazine citrate, Medicinal Plant

ABSTRACT

The present research work had evaluated the anthelmintic activity of *Ficus benghalensis* L. (Moraceae) (Banyan tree) an important Indian plant having sacred value and associated with longevity. In present investigation Acetone: Water (70:30) extract of aerial roots of *Ficus benghalensis* was prepared and subjected for anthelmintic activity using Indian earthworm. The extract concentrations used for activity are 25, 50, and 100 mg/ml. The results of the study revealed that the 100 mg/ml concentration is having best anthelmintic activity. The phytochemical investigation was also performed on the extract and had shown the presence of phenolics, tannins, saponins; mucilage and alkaloid compounds existence and anyone from above may be responsible for anthelmintic activity.

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REVIEW ARTICLE

Neem: As a Natural Medicine

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ABSTRACT:
Neem (*Azadirachta indica*) is a member of the Meliaceae family. It serves as the Health-promoting Effect because it is rich source of Anti-oxidant. Neem is very important medicinal plant which is used to treat different diseases in Unani System of Medicine as well as traditional system of medicine (Ayurveda, Homeopathic Chinese and European 'Materia Medica'). It is fast growing popular tree found in Africa, America and especially Indian subcontinent. Neem is considering harmless to humans, animals, and birds and has been approved by the US Environmental Protection Agency. All parts of the neem tree- leaves, flowers, seeds, fruits, roots and bark have been used traditionally for the treatment of inflammation, infections, fever, skin diseases and dental disorders. Azadirachtin and other active ingredients in the neem seed have insecticidal properties. Neem has been extensively used in Ayurveda, Unani and Homeopathic medicine. It contains many medicinal values and some biological activities like use in treatment of anti-allergic, anti-dermatic, anti-viral, anti-malarial, anti-fungal and anti-bacterial. It helps in the strong immunity and used in some inflammatory skin disorders. It has rightly been called as a "Single Solution to A Thousand Problems".

KEYWORDS: Neem, Azadirachta indica, Anti-oxidant, Ayurveda, Unani, Azadirachtin.

1. INTRODUCTION:

Neem (*Azadirachta indica*) is fast growing evergreen popular tree and has been used in Ayurvedic medicine for more than 4000 years due to its medicinal properties [1]. Neem is a large found wild and often cultivated in India. The plant product or natural products shows an important role in diseases prevention and treatment through the enhancement of antioxidant activity, inhibition of bacterial growth and modulation of genetic pathways [2]. Neem is called 'Arishta' in Sanskrit word that means "reliever of sickness" [3]. It is typically grown in tropical and semi-tropical regions. The height of the tree is about 12 meters to 15 meters and rarely 25-35 m.

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It is a flowering plant and normally starts fruiting after 3-5 years. The tree becomes productive within 10 years [4]. The neem tree develops into a substantial shade tree with a thick, round canopy and can live for 150-200 years [5]. All the part of the tree is bitter in taste. The neem tree is an incredible plant that has been declared the "Tree of the 21st century" by the United Nations. The US National Academy of Science published a report in 1992 entitled "Neem: A tree for solving global problems" [3]. The therapeutics role of number of plants in disease management is still being enthusiastically researched due to their less side effect and affordable properties. It has been accepted that drugs based on allopathy are expensive and also exhibit toxic effect on normal tissues and on various biological activities [2]. Traditionally, the leaves and their paste are used for curing allergic skin reactions and antivirally treating smallpox and chicken pox. It is a largely accepted fact that numerous pharmacologically active drugs are

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REVIEW ARTICLE

Review on Echinacea & it's Species

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ABSTRACT:
Today many diseases affect the human. For treatment of these diseases we use different types chemical based medicines so these medicines sometime exert side-effects on human body. So for avoiding these side-effects we use different herbs which have lot of medicinal property but rarer side-effects. So Echinacea is one of them herb which are used to treat many diseases. But due to improper information about these herb avoid the use. Echinachea have many property like Antibiotics, Antiviral, Antifungal etc.

KEYWORDS: Echinacea, Asterids, Sea Orchin, Eudicots, Trcheophytes.

INTRODUCTION:

Echinacea is a genus or group of herbaceous flowering plants in the daisy family. The genus Echinacea has many species which are commonly called as cone-flower[1].Echinacea also known as the purple coneflower, is an herbal medicine that has been used for centuries, customarily as a treatment for the common cold, coughs, bronchitis, upper respiratory infections, and some inflammatory conditions [4].

The generic name is derived from the Greek word "Ekhinos" means "Sea Orchin" due to spiny central disk.[1]

General Classification of Echinacea:

Kingdom	-	Plantae
Clade	-	Tracheophytes
Clade	-	Angiosperms
Clade	-	Eudicots
Clade	-	Asterids
Order	-	Asterales
Family	-	Asteraceae
Sub-Family	-	Asteroideae
Sub-tribe	-	Helianthodae
Tribe	-	Heliantheae
Genus	–	Echinacea [1]

Uses of Echinacea in the following treatments

1. Attention deficit-hyperactivity disorder (ADHD)
2. Bee stings
3. Bloodstream infections
4. Chronic fatigue syndrome (CFS)
5. Cold sores (herpes labialis)
6. Cough
7. Diphtheria
8. Dizziness
9. Eczema
10. High fever or other allergies
11. HIV/AIDS
12. Indigestion

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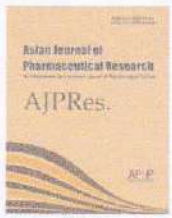

REVIEW ARTICLE

Corona (Covid - 19)

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ABSTRACT:
An communicable disease outbreak in the China in December 2019 has established with a record number of deaths in China and intermittent spread of infection to other countries. Coronaviruses (Corona: Crown like shape) were recognized in 1968 totally on the idea of their characteristics morphology as seen in microscope. Coronaviruses (CoVs) primarily cause multiple respiratory and internal organ infection in human and animals. Although the history of CoVs began in 1940's, the identification of the first human CoVs were reported in 1960's as causative agent for mild respiratory infection. In this review, we have to shortly explain coronavirus, Taxonomy, Types, structure and it's replication, Sign and symptoms, method of detection, pharmacological agent and also herbal treatment for management of covid 19.

KEYWORDS: COVID 19, Detection of Corona Infection, Pharmacological and Herbal Treatment.

INTRODUCTION:

Viral infection executes a huge diseases burden on humanity, but our knowledge about pathogenic viruses is rather inadequate. The impression that we know almost everything about viral diseases and that medicine can cope with every possible infection was crushed by the appearance of several lethal viruses that are still out our control. Including HIV, Ebola, Avian influenza and many other (**49**).Respiratory tract infection are leading cause for hospitalization of infants and young children(**84**). The most important viral agent in this patient group are respiratory syncytial virus (RSV) and the picornaviruses (25).Other agent that causes various respiratory diseases are influenza and parainfluenza viruses, adenoviruses, coronaviruses, and human mutapneumovirus**(5,27,28,36,46).**

An communicable disease outbreak in the China in December 2019 has established with a record number of deaths in China and intermittent spread of infection to other countries**(80).**In recent update from WHO and other live updates observing institutes, the virus has infected more than 7,50,890 people worldwide with more than 36,405 deaths in different regions and countries. The China, the major hit country, alone recorded more than 3,314 deaths by end of March 2020. This disease proved to be more lethal and showed closeness with Severe Acute Respiratory Syndrome (SARS). In consideration of urgency and to give an identity to current unique symptomic disease, the World Health Organization (WHO) announced a new name for the epidemic disease caused by new corona virus: **Co**rona **Vi**rus **Di**sease 20**19** (COVID-19) on 11 February 2020.

Coronaviruses (Corona: Crown like shape; **Figure 2**) (**47**) were recognized in 1968 totally on the idea of their characteristics morphology as seen in microscope **(95).** Coronaviruses (CoVs) primarily cause multiple respiratory and internal organ infection in human and animals (**71**). Although the history of CoVs began in 1940's (**6**), the identification of the first human CoVs

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REVIEW ARTICLE

Indian Species and their Medicinal Property

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ABSTRACT:

Today many diseases affect our body sometime these disease are easily cure or sometimes its take time. For treatment of particular disease we use different chemical based medicines. Sometimes these medicine provide harm affect to our body. Beside using these chemical based medicines use Indian species which have lot of medicinal property and very rarer side effects to human body. So due to improper information about medicinal property of these species peoples are generally avoid the use of these species in there day to day life.Various species are generally available are amchoor, alkanet root, asafoetida, Cardamom, garlic etc having number of useful medicinal property.

KEYWORDS: Detoxification, Alkanna, Carminative, Anti-parasitic, Analgesic.

INTRODUCTION:

A) Amchoor:

Medicinal Property of Amchoor:

1. Amchoor has high content of iron so it is especially beneficial for those preganant women and those suffering from iron deficiency anemia.
2. Reduces acidity, improves digestion and enhance bowel movements.
3. Benefits for cardiovascular health.
4. Detoxification.
5. Control blood pressure and diabetes.
6. Improve vision.
7. Anti-aging effect
8. Boosts metabolism
9. Scurvy.[2]

B) Alkanet Root / Alkanna:

Medicinal Property of Alkanet Root:

1. Scare Recovering
2. Fever treatment
3. Hair & Nail treatment
4. Rheumatic recovery
5. Maintaining skin health
6. Support and promote high performance health
7. Antifungal and Skin healing
8. Herps treatment
9. Anti-aging activity
10. Anti-cancer activity [1]

C) Asafoetida:

Medicinal Property of Asafoetida:

1. Carminative
2. Anti-pasmodic
3. Expectorant
4. Sedative
5. Diuretics
6. Anthelminthic
7. Aphrodisiac
8. Emmenagogue
9. Antiparasitic
10. Anti-cholesteremic
11. Anti-fertility

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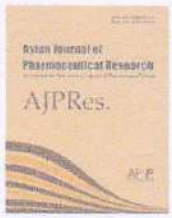

REVIEW ARTICLE

A Short Review on Fluidized Bed Dryer

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ABSTRACT:
This artical also discusses about demostration of fluidized bed dryer with principle and application and other processing. This has lead to development of thechnology, process and equipments which not only reduce time but also increasing the output. A Fluidized bed dryer significantely reduce drying time, compared with vaccum dryer or tray dryer. In the pharmacutical industry, fluidized bed dryer are typically used for pellets drying, coating and granulation. Fluidized bed drying are very well known to yield high heat and mass transfer and hence adopted to many industrial drying process particularly pharmacy product. In this paper we show construction, working of the fluidized bed dryer. It work on the drying principle. It has several advantages and disadvantages.

KEYWORDS: Fluidized, Drying, Particle, Temperature, Pharmaceutical, Method.

INTRODUCTION:
Drying method is common in the chemical, pharmaceutical and food productions.[1] It has been informed that an ordinary 12% of energy spent it used on drying, and the price of drying could range up to 60-70 % of entire charge of deal.[2] The particle are fluidized in bed when the drag force created by the gas flow through the bed is equal to the weight of the particles.[3] When fluidizations happen, the solid particle has various properties of a fluidized. Single noticeable things are the fluidized particle get to level and assume and figure of holding container. Big weighty thing sink when added to the thing and light particle float.[4]

Fluidized belt have been extensively used in the chemical, pharmaceutical, and food businesses as batch dryer due to their high heat and mass transfer charges as an outcome of high connection between gas and particle in the compartment.[5-6]

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Effective applications of fluidized belt dryer include drying food creation such as soybean's, farming product such as paddy and colza, biochemical product such as baker's yeast, and pharmaceutical material such as dibasic calcium phosphate powder.[2-7-8]

Throughout fluidization, air runs through the bed of particles and suspended the particle in the air stream, outcome in a dynamic fluidized identical state for the particles.[9] When air upward passes through a bed of particle, the compression of supplied air globules due to the growing resistance with increasing air movement. With increasing air flow, an extended bed is obtained with some particle brought up into the air stream. As the upward drag energy keeps increasing with the air flow, finally the mass of particle is counterbalanced, separation of the particles increased and bed is fluidized.[10-11]

Principle:
In the fluidized bed dryer warm air is passed through a perforated bottom of the vessel holding particles to be dry. The particles are suspended in the air stream and rise from the bottom. This situation is termed as fluidized state. Hot air bounded each particle to dry it totally. Therefore the constituents or granules are dried consistently.[12-13]

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REVIEW ARTICLE

Evaporation A Unit Operation in Pharmaceutical Industry

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ABSTRACT:
There are many processes in life that are taken on a daily basis. There are some common ones that we don't even notice happen every day. One such process is evaporation. This paper also presents on evaporation. To study more about evaporation and other related concepts. It was focus on objective, factor affecting evaporation. The main characteristics, as well as the application of evaporation in pharmaceutical industry of each method are indicated. Evaporation is a process by which liquid water goes directly into the vapour phase due to an increase in temperature. The evaporation process is widely used to make drugs, especially in the pharmaceutical industry. We want to know that on which bases evaporation process effectively works and plays an important role in pharma industry as well as other industries.

KEYWORDS: Evaporation, Vapour, Heat transfer, Temperature.

INTRODUCTION:
Evaporation can be defined as the process where a liquid is converted to a gaseous state. Evaporation can only take place when water is available. Evaporation requires that the humidity of the atmosphere be lower than the evaporation surface.[1] Evaporation occurs when the liquid is converted into gas. The process begins when the liquid molecules receive energy in the form of heat. They turn into a vapour after this gaining of energy.[2] Evaporation is the most important environmental process that can reduce the quality and quantity of water available for industrial, agricultural and domestic use.[3] Evaporation is the release of vapor from the surface of a liquid below its boiling point. Evaporation can also occur at room temperature. The vapor atmosphere that produces steam reduces the pressure that causes changes in temperature. The vapor pressure is highest at the boiling point of the liquid as vapor is formed throughout the liquid. The liquid vapor pressure is equal to the atmospheric pressure at its boiling point.[4]

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Objectives of Evaporation:
1. To get concentrate products.[5]
2. To remove water from an aqueous solution.[5]
3. To evaporate Seawater for developing drinking water.[5]
4. To obtain solid free water which is used for chemical processing in boilers.[5]

Applications:
1. Evaporation is used to make salt from aqueous solution in concentration and recovery of dissolved solvents like sodium chloride.[6]
2. Evaporation is commonly used in the pharmaceutical industry, chemical industry for the manufacture of bulk of drugs.[5]
3. It is used to prepare galencial preparation.[5]
4. It is also used in the concentration of solutions.[7]
5. It is used to concentrate pharmaceutical herbal extracts in the herbal industry.[6]
6. It is used in the pharmaceutical industry to remove excess moisture, facilitate handling of products, and improve product stability.[6]
7. It is used to preserve long-term activity or to stabilize enzymes in laboratories.[6]
8. Evaporation is used in the manufacture of organic

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Advances in Bioresearch

ORIGINAL ARTICLE

Formulation and Evaluation of Lamivudine Loaded Micro Particles by Novel Technique

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ABSTRACT
Present work is to formulate Lamivudine loaded microparticle by counterion induced aggregation method, employing simultaneous cold temperature and hyperosmotic solution treatment as a novel technique. Chitosan was chosen as polycation and smaller molecular electrolytes such as sodium citrate, sodium sulphate and were chosen as polyanions. The resulted aggregated microparticles were subjected to surface morphology, size distribution, in- vitro release and drug excipient interaction study. Results and discussion: Sodium citrate (SC) and sodium sulphate (SS) were able to form aggregates except as chitosan forms complexes and depends on pH and pKa of medium. Prepared aggregates were subjected to cold hyperosmotic dextrose solution to provide more mechanical strength. The percentage of entrapped drug was more in SC based microparticle as compared to SS. The SS and SC microparticles had average particle size of 1500 mm and 1300 mm respectively. Also, the SEM study showed SS particles were had smoother surface than SC.There was no such major interaction were found during FTIR and DSC study. In addition, stability study was per-formed and data showed no significant change in assay value for SS2. The microparticles prepared by above mentioned method had sufficient mechanical strength and were able to released drug.
***Keywords:** Lamivudine, Micro Particles, Chitosan & Polycation.*

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INTRODUCTION

Lamivudine(3TC) a synthetic nucleoside analogue with activity against HIV-1 and HBV. This deoxycytidine analogue is phosphorylated intracellularly and inhibits HIV reverse transcriptase as well as hepatitis B virus (HBV) DNA polymerase. Its incorporation into DNA results in chain termination. Most human DNA polymerases are not affected and systemic toxicity of 3TC is low. Point mutation in HIV-reverse transcriptase and HBV-DNA polymerase gives rise to rapid lamivudine resistance. Lamivudine usually is given with other antiretroviral agents, such as ZDV or D4T.3TC at a dose of 600 mg/day reduced HIV cells by 75%, and in combination with ZDV (Zidovudine), the reduction in viral load was 94%.3CT is rapidly absorbed through the GI tract. [1to3]. Controlled release drug delivery employs devices, such as polymer-based disks, rods, pellets encapsulates drug and releases at controlled rates for relatively long periods of time. One approach to produce sustained release of drugs is by the use of micro-particulate drug delivery systems. [4to6] in last decade several research works already reported based on microparticle. Several methods of preparing microparticulate drug delivery systems are available, e.g., Physical association, chemical crosslinking method, spheronization, spray granulation, coacervation and fluidized bed granulation etc.[7,8] The main disadvantages associated with those most techniques include high cost of manufacturing, need of specialized and high skill trained persons and equipment. Chemical crosslinking method involves formation of carboxylic acideamide bonding and Schiff base formation by some of -NH_2 and -OH chemical handlers such as glutaraldehyde, diglycidyl ether, diisocya-nate, diacrylate etc.[9,10] Whereas, physical association method involves crosslinking between small anionic molecules, such as citrates, sulphates, phosphates and large anionic macro- molecules such as, DNA, alginate, chondroitin sulphate, hy- aluronic acid, carboxymethyl cellulose, pectin, dextran sulphate and proteins with some

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A Brief Review on Valsartan and Evaluation of Pharmacosomes

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ABSTRACT: Valsartan is an orally active Angiotensin II receptor type 1 antagonist which causes reduction in blood pressure and is used in treatment of hypertension. Angiotensin II Receptor type 1 antagonists have been widely used in treatment of diseases like hypertension, myocardial infarction and heart failure. Their beneficial effects are related to inhibition of Angiotensin II by blockade of AT1 receptor. It was first developed by Novartis and has a wide market in the developed and the developing countries. It is a lipophilic drug and possesses moderate onset of action than other drugs of the same category. It is also available in combination with other antihypertensive drugs. This review evaluates the detail profile of Valsartan like physicochemical properties, pharmacokinetics, indications and contraindication storage, etc. and the preparation methods of pharmacosomes and its detailed evaluation. The main objective of this study is to review that the formulation of pharmacosomes is a better approach for enhancement of bioavailability of valsartan.

KEYWORDS: Valsartan, Hypertension, Pharmacosomes, Bioavailability, etc.

I. INTRODUCTION:

Valsartan is a potent, orally active non-peptide tetrazole derivative and selectively inhibits Angiotensin II Receptor type-I which causes reduction in blood pressure and is used in treatment of hypertension. It was first developed by Novartis and has a wide market in the developed and the developing countries. It is also available in combination with other antihypertensive drugs. It is a lipophilic drug and possesses moderate onset of action than other drugs of the same category. It is soluble in the neutral pH range. Valsartan is soluble in acetonitrile and methanol. It belongs to the BCS class III drug classified as low permeability and high solubility drug. The drug is rapidly absorbed orally and has limited volume of distribution and is extensively bound to plasma proteins. Valsartan is not extensively metabolized and is mainly excreted by non-renal routes. Valsartan is effective in treatment of paediatric, adolescents and the elderly patients with mild to moderate hypertension. [1, 2]

II. HISTORY:

Valsartan was first developed by Novartis and was sold under the brand name DIOVAN and it currently holds the largest market share for the drug of its kind in the market.[1]

III. DRUG PROFILE OF VALSARTAN:

3.1 PHYSICOCHEMICAL PROPERTIES OF VALSARTAN:

Valsartan is (2S)-3-Methyl-2-(pentanoyl {[2'-(1H-tetrazol-5-yl)-4-biphenylyl] methyl} amino)butanoic acidwith empirical formula $C_{24}H_{29}N_5O_3$. Its molecular weight is 435.519g/mol. [3]

Valsartan is a white coloured crystalline powder that is freely soluble in ethanol, methanol, and acetonitrile and sparingly soluble in water. Valsartan appears in the melting range of 105-110°C. The partition coefficient of Valsartan is 0.033 (log P=1.499), suggesting that the compound is hydrophilic at physiological pH. The compound is stable under storage in dry conditions. As valsartan has pH dependent solubility it belongs to a special case in a proposed general classification system that categorises drugs with respect to their biopharmaceutical and absorption properties.In the biopharmaceutical classification system, valsartan has been classified as Class III drug with low permeability, poor metabolism and high solubility. Valsartan has bioavailability of about 25% due to its acidic nature. Being acidic in nature it is poorly soluble in the acidic environment of GIT and is absorbed from the upper part of GIT that is acidic in nature and where its solubility is low.Valsartan is 0.18 g/L soluble in water at 25°C.In a buffered solution a dianion salt is formed due to which its

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REVIEW ARTICLE

A Short Review On: Structures and synthesis of some Heterocyclic Compounds

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ABSTRACT:
It is a branch of chemistry dealing with the synthesis, properties and applications of this heterocycles. Its play a very important role in nature and in chemical synthesis as well. Heterocyclic chemistry deals with heterocyclic compounds which constitute about sixty-five percent of organic chemistry literature. A heterocyclic compound or rings structure is a cyclic compound contain atom of at least two different elements as a member of its ring. In nature N, O, S, containing heterocyclic molecule can be found in every living being. A heterocyclic compound or ring structure is a cyclic compound that has atoms of at least two different elements as members of its ring(s). Examples of heterocyclic compounds include all of the nucleic acids, the majority of drugs, most biomass (cellulose and related materials), and many natural and synthetic dyes. More than half of known compounds are heterocycles. 59% of US FDA-approved drugs contain nitrogen heterocycles.

KEYWORDS: Heterocyclic compounds, pyridine, furan, indole, pyrrole, pyrrolidine.

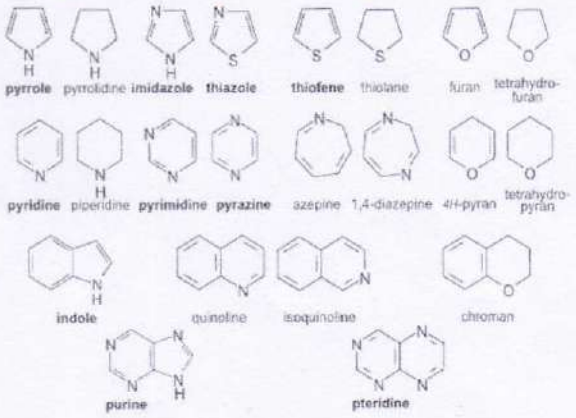
INTRODUCTION:

Heterocyclic compounds are of very much attention in our everyday life. Heterocyclic compounds have one or more hetero atoms in their structure. They might be cyclic or non-cyclic in nature. Heterocyclic compounds have an extensive range of application. They are mostly used as pharmaceuticals, as agrochemicals and as veterinarian products. They also discovery applications as sanitizers, designers, antioxidants, as corrosion inhibitors, as co-polymers, dye stuff. They are used as vehicles in the synthesis of other organic compounds. Some of the natural products e.g., antibiotics such as penicillin's, cephalosporin; alkaloids such as vinblastine, morphine, reserpine etc. have heterocyclic moiety. [1,4]

Heterocyclic compounds are broadly spread in nature and vital to life; they play a dynamic role in the metabolism of all living cells. Genetic material DNA in also collected of heterocyclic bases-pyrimidines and purines. An immense number of heterocyclic compounds, mutually synthetic and natural, are pharmacologically active and are in clinical use. [1,3]

Heterocyclic compounds have a varied range of application: they are major between the type of compounds used as pharmaceuticals, as agrochemicals and as veterinarian products. They also find applications as sanitizers, designers, antioxidants, as corrosion inhibitors, as copolymers, dyestuff. They are used as vehicles in the synthesis of other organic compounds. [1,2,3,4]

Survey of the most important heterocycles



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REVIEW ARTICLE

Demonstration of Ball mill and their applications in Pharmacy

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ABSTRACT:
These article is to understand the Demonstration of ball mill and there are well known and used for particle size reduction. Grinding process are described and the most Commonly used control strategies are analyzed and uses ball mill in pharmacy. Ball mill is a cylindrical device that used to grind and blend raw materials and it rotates around a horizontal axis, partially filled with the material to be ground plus the grinding medium. When it is controlled by speed, the load nearest the wall of the cylinders will break and it quickly followed by other particle in the top curves and form a sliding stream containing several layers of balls separated by material of varying thickness.

KEYWORDS: Ball mills, grinding circuit, pebble mill and tumbling mill.

INTRODUCTION:

A ball mill is a type of grinder used to grind, blend and sometimes for mixing of materials for use in mineral dressing processes, paints, pyrotechnics, ceramics, and selective laser sintering. Almost every year several billion tons of metallic ores, minerals, cement and various other solids used in the ceramic and chemical industries are subjected to size reduction in ball mills. It is important to establish the optimum values of various mill operating parameters, such as the mill speed, ball load, ball diameter and particle load, from the energy consumption point of view.[1]

Ball mills are widely used in comminuting process in mineral industry. The comminuting in the ball mill takes place by impact, friction, and abrasion between rocks and balls inside the mill during rotation.

Steel balls are charged into a cylinder, along with the material to be ground, and rotated, allowing the balls to crush material which travels between them. Without the balls in the cylinder, or some other media to crush the material we wish to grind, little grinding will take place. To ensure the stability of the material in the ball mill, many parameters of the equipment should be adjusted of ten, such as, the speed of the scatter machine, the quantity of the feeding material, the speed of the dust collecting machine, the speed of the powder selecting machine, etc.[2]

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REVIEW ARTICLE

Application of steroid in clinical practice

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ABSTRACT:

Corticosteroids represent important therapies for numerous acute conditions and chronic diseases based on their broad anti-inflammatory and immunosuppressant effects. They have been used extensively in managing many oral diseases, due to their excellent anti-inflammatory and immune-modulator effect. This article is present at reviewing the uses of corticosteroids in the treatment various oral condition. To study more about corticosteroids and other related concepts. It was focus on Physiological effects, Effect of anesthesia and surgery and important indication of steroid in anaesthetic practice. There are strategies that can be used to minimize these risks, but some risks are often unavoidable. Topical use of corticosteroids, including inhalation, can be used to target specific organ for treatment. Corticosteroid therapy can be life-saving in serious and serve medical conditions.

KEYWORDS: Corticosteroids, Steroid, Effect, Inflammation, modulator effect.

INTRODUCTION:

Physiological effects:

As the primary endogenous glucocorticoid, cortisol has a variety of physiologic effects in humans. These effects are pleiotropic and pedestrian, and affect nearly every or -Gan and metabolic process in the body. Pharmacologic use of corticosteroids is commonly to suppress or prevent signs and symptoms of allergic responses or inflammation, or to suppress an inappropriate or unwanted immune responseless commonly, hydrocortisone is used for physiologic replacement of cortisol when the hypothalamic-pituitary -adrenal axis is present or circulating cortisol is deficient. Due to a primary adrenal condition or due to secondary failure of the pituitary or hypothalamus, which results in deficits of adreno-corticotrophic hormone or corticotrophin Releasing hormone. Corticosteroids effects on inflammation and immune function are described below. In addition, these agents affects carbohydrates, protein, and lipid metabolism, which results in gluconeogenesis, protein catabolism, and fatty acid mobilization along with multiple other effects.

Corticosteroids also affect bone and calcium metabolism, cardiovascular homeostasis, central nervous system function, and a variety of endocrine effects. There also are effects on cardiovascular function and fluid electrolyte balance that are attributed both to gluco-corticoids and miner-alocorticoid activity. With pharmacologic dosing of corticosteroids, these effects are significants and often undesirable, which results in physiologic consequences that are described in the adverse drug reactions and side-effects section.

Although cortico-steroids are used primarily for their anti-inflammatory effects, they also associated with beneficial effects on the 2-adrenergic receptors. Cortico-steroids are associated with upregulation of 2-adrenergic receptor function as well as acting to reverse down regulation of these receptors associated with chronic 2-adrenergic therapies. Plausible mechanisms for this effects at the 2-arenergic receptor are to increases coupling of re-captors to G proteins, which increases adenyl cyclase, and to also increase the synthesis of new receptors[1]

Effects of Anaesthesia and surgery:

Plasma cortisol levels typically increase from two-ten-folds following induction of anesthesia, during surgery, and in posto-perative period. The maximum ACTH and cortisol levels are reached in the early postoperative

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Review Article

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A REVIEW ON MOUTH DISSOLVING FILM

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ABSTRACT

Mouth Dissolving Films (MDF) or Oral Thin Films (OTFs), offer a convenient way of dosingmedications, not only to special inhabitant's groups with swallowing difficulties such as Paediatrics and Geriatrics, but also to the general population. Fast dissolving drug delivery have been developed as an alternative to conventional dosage form as an oral means of drug delivery in case of chronic conditions. Present days fast dissolving films are preferred over conventional tablets and capsules for masking the taste of bitter drugs to increase the patient compliance. Mouth Dissolving Films consist of a very thin oral strip which dissolves in less than one minute when placed on the tongue. Dissolvable oral thin films are in the market since past few years in the form of breath strips and are widely accepted by consumers for delivering vitamins, vaccines and other drug products. Mouth Dissolving Films are the novel dosage forms that disintegrate and dissolve within the oral cavity. Intra-oral absorption permits rapid onset of action and helps by-pass first-pass effects, thereby reducing the unit dose required to produce desired therapeutic effect.

KEYWORDS: Fast Dissolving Oral Film, Oral Thin Films, Oral cavity, Mouth Dissolving Films.

INTRODUCTION

Oral route is most common and mostly applicable route of drug administration. Recent advances and developments in the technology have presented viable dosage alternatives from oral route for pediatrics, geriatric, bedridden, nauseous or noncompliant patients. Various bio adhesive mucosal dosage forms have been urbanized which includes adhesive tablets, gels, ointments, patches and more recently the use of polymeric films for buccal delivery, also known as mouth dissolving films. Mouth dissolving films, a new drug delivery system for the oral delivery of the drugs, was developed based on the technology of the transdermal drug delivery system. The delivery system consists of a very thin oral strip, which is simply placed on the patient's tongue or any or tissue, instantly wet by saliva the film rapidly hydrates and adheres onto the site of application. It then rapidly disintegrates and dissolves to release the medication for Oro mucosal absorption or with formula modifications, will maintain the quick-dissolving aspects allow for gastrointestinal absorption to be achieved when swallowed.In contrast to other existing, rapid dissolving dosage forms,which consist of lyophilizates, the rapid films can be produced with a manufacturing process that is competitive with the manufacturing costs of conventional. Pharmaceutical companies and consumers alike haveembraced oral thin films (OTFs) as a practical and accepted alternative to traditional OTC medicine forms such as liquids, tablets, and capsules. OTFs offer fast.

Mouth dissolving films (MDF): Oral route is the most preferred route for the delivery of thedrugs till date as it bears various advantages over the other route of drug administration, the particular class of patients which includes geriatric, paediatric and dysphasic patients associated with many medical conditions as they have difficulty in swallowing or chewing solid dosage forms. Many paediatric and geriatric patients are unwilling to take solid preparations due to fear of choking. That's way the MDF are very essential to used.

Definition of FDF: Fast dissolving films are most advance form of solid dosage form due toits flexibility. It improves efficacy of Active pharmaceutical ingredient (API) dissolving in the short duration oral cavity after the contact with less amount of saliva as compared to dissolving tablet.

Mechanism of absorption through saliva: There are two possible routes for drug absorption: the transcellular (intracellular, passing through the cell) and the paracellular (intercellular, passing around the cell) route. Another classification involves passage through non-polar (lipid elements) and polar (hydrophilic material through aqueous pores) routes.

The permeation mainly occurs by the par cellular route,

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REVIEW ON NITAZOXANIDE: A BROAD SPECTRUM ANTIPARASITIC AGENT

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ABSTRACT
Nitazoxanide is a thiazolide antiparasitic agent that shows excellent in vitro activity against a wide variety of parasites as well as some bacteria. It has been used as a single agent to treat mixed infections with intestinal parasites i.e. protozoas and helminths. It was originally discovered in 1975 by Jean Francois Rossignol & It was initially developed as a veterinary antihelminthic with activity against intestinal nematodes, cestodes, and liver trematodes & In humans, nitazoxanide has been reported to be effective against a broad range of parasites, including *Giardia lamblia, Entamoeba histolytica, Cryptosporidium parvum, Cyclospora cayetanens,* etc. The main objective of this review is to study detailed profile of nitazoxanide like physicochemical properties, pharmacokinetics, clinical uses, and adverse effects of Nitazoxanide.

KEYWORDS: Nitazoxanide, Antiparasitic agent, protozoa, helminths, etc.

INTRODUCTION
Intestinal parasitic infections rank amongst the most important causes of morbidity and mortality worldwide there has been very little recent effort by the pharmaceutical industry to develop agents to treat human parasitic infections.[1,2]

Nitazoxanide is a thiazolide broad-spectrum antiparasitic agent. In contrast with other agents, it is being primarily developed to treat human parasitic infections as well as bacterial infections. It was first described in 1975 by Jean Francois Rossignol and was initially developed as a veterinary anthelminthic with activity against intestinal nematodes, cestodes and liver trematodes.[3] In humans, nitazoxanide has been reported to be effective against a broad range of parasites including *Giardia lamblia, Entamoeba histolytica, Cryptosporidium parvum, Cyclospora cayetanensis, Trichomonas vaginalis, Vittaforma corneae, Encephalitozoon intestinalis, Isospora belli, Blastocystis hominis, Balantidium coli, Enterocytozoon bieneusi, Ascaris lumbricoides, Trichuris trichura, Taenia saginata, Hymenolepis nana, and Fasciola hepatica* as well as some bacteria including *Clostridium difficile & Helicobacter pylori.*[4-10]

Also, It has been used as a single agent to treat mixed infections with intestinal parasites i.e. protozoas and helminths. It is the first and only US FDA-approved drug for treatment of Cryptosporidium infection and is the first new drug approved for treatment of Giardia infection.[11,12]

Drug profile of nitazoxanide
Physicochemical properties of nitazoxanide
Nitazoxanide is chemically 2-(Acetolyloxy)-N-(5-nitro-2-thiazolyl) benzamide with molecular formula $C_{12}H_9N_3O_5S$. Its molecular weight is 307.28 g/mol. Nitazoxanide is a light yellow crystalline powder. It is poorly soluble in ethanol and practically insoluble in water. It has boiling point of 394°C & Melting point of 202°C. [13, 14]

Chemical class of nitazoxanide
Nitazoxanide belongs to the class of drugs known as thiazolides. The structure of nitazoxanide is shown in Fig.1.[15]

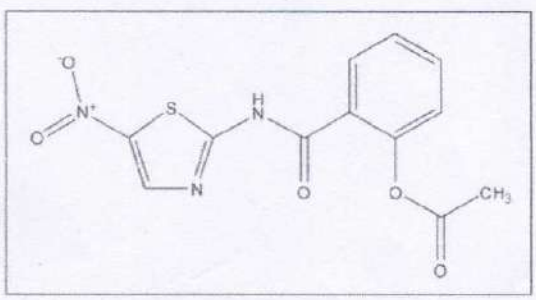

Fig. 1: Structure of Nitazoxanide.

Mechanism of action of nitazoxanide
There are many mechanisms of nitazoxanide. The most widely accepted mechanism of nitazoxanide is believed to be the disruption of the energy metabolism in

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EJPMR

GLAUCOMA: AN OVERVIEW

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ABSTRACT

Glaucoma is caused by elevated intraocular pressure (IOP) that leads to optic nerve damage and visual field loss & frequently called "the silent thief of sight". In 1862, Donders discovered that high intraocular pressure caused blindness and called the disease "Glaukoma simplex". It is the most frequent cause of irreversible blindness worldwide if left undiagnosed and untreated. This article gives an overview about types, mechanism, symptoms, causes, diagnosis and treatment of glaucoma.

KEYWORDS: Intraoccular pressure (IOP), tonometry, trabeculectomy, trabeculoplasty, iridotomy, etc.

INTRODUCTION

Glaucoma is caused by elevated intraocular pressure (IOP) that leads to optic nerve damage and visual field loss. Glaucoma affects more than 70 million people worldwide with approximately 10% being bilaterally blind making it the leading cause of irreversible blindness worldwide. From a pathophysiological and therapeutic point of view, intraocular pressure is the primary modifiable risk factor, since progression of glaucoma usually stops if this pressure is lowered by 30–50% from baseline.[1, 2, 3, 4]

Patients with glaucoma do not usually have any ocular or systemic symptoms. Glaucoma is frequently called "the silent thief of sight" because of the lack of symptoms in open-angle glaucoma. There are many different types of glaucoma, but the two main categories are open-angle and angle-closure glaucoma.[5,6] Glaucoma can remain asymptomatic until it is severe, resulting in a high likelihood that the number of affected individuals is much higher than the number known to have it. Population-level surveys suggest that only 10% to 50% of people with glaucoma are aware they have it.[7, 8, 9, 10]

Mechanism

Your eye constantly makes aqueous humor. As new aqueous flows into your eye, the same amount should drain out. The fluid drains out through an area called the drainage angle. This process keeps pressure in the eye (called intraocular pressure or IOP) stable. But if the drainage angle is not working properly, fluid builds up. Pressure inside the eye rises, damaging the optic nerve.[11]

Types of Glaucoma

Glaucoma is not one disease but a group of eye diseases characterized by anatomical features, such as open angle (where the anterior chamber angle of the eye remains open) and angle closure (closure of the anterior chamber angle). The two broad categories of glaucoma. If the eye has no pre-existing disease, the glaucoma is considered primary. Patients who have glaucoma in an eye that had pre-existing disease are diagnosed with secondary glaucoma. There are several different types of glaucoma, and they have been classically divided into the categories of primary or secondary open-angle glaucoma and primary or secondary angle-closure glaucoma.

1] Open-angle glaucoma

Primary open-angle glaucoma is the most common type of glaucoma encountered in clinical practice. It is differentiated from angle-closure glaucoma by the gonioscopic appearance of the anterior chamber angle. Primary open-angle glaucoma is a diagnosis of exclusion in that there are no apparent preceding or associated ocular or systemic causes.[10]

Secondary open-angle type glaucoma is due to injury, eye disease, and rarely eye surgery causing increased intraocular pressure and, therefore, optic nerve damage like the open-angle form of glaucoma. One mechanism of secondary open-angle glaucoma is from laser surgery, which can cause pigment release, inflammatory cells, debris, and mechanical deformation resulting in blockage of the trabecular meshwork leading to increased intraocular pressure. The most common mechanism for the secondary open-angle type is from diseases causing neovascularization. Neovascularization can either physically block the outflow tracts.[12]

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Research Article

A descriptive study and in-vitro antioxidant activity of leaves extracts of *tridax procumbens* linn

Hemant P. Suryawanshi*, Akash Jain, S. P. Pawar

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ABSTRACT

Tridax Procumbens Linn is a member of the Asteraceae family. *Tridax Procumbens* has to be utilized because native medication intended for a number of complaints and problems in humans and animals for thousands of years. It is used widely in Indian conventional remedies for healing of wounds, like anticoagulants, in fungal infection, in diarrhea and dysentery, as an antioxidant, antimicrobial, anti-inflammatory, and immunomodulators. In folk medicine, certain communicable skin diseases are treated by using leaves extract. It's also known as 'Bhringraj,' an ayurvedic drug used to treat liver problems. At least 12,000 people have been separated from their families. These compounds protect plants from pathogens, insects, and herbivores by acting as defensive mechanisms. The aim of the test is to establish the antioxidant potential of the leaves of *Tridax Procumbens*. The current research is aimed at identifying novel plant directions, and antioxidant activity has been chosen for that reason. Using the maceration procedure, the power of the plant's shade dried leaves was extracted with chloroform water and ethanol. The antioxidant activities of the resulting extracts were evaluated using 2 techniques: nitric oxide scavenging activity and ferric chloride reductive ability. The alcoholic extract in 600 mg/ml and 800 mg/ml and 1000 mg/ml concentration has demonstrated antioxidant activity higher than ascorbic acid (20 mg) by nitric oxide scavenging method. By using a ferric chloride scavenging model, the aqueous and alcoholic extracts at 400 g/ml and 600 g/ml concentrations revealed antioxidant activity near to that of ascorbic acid (20 g).

Keywords: *Tridax Procumbens*, Antioxidant, *Asteraceae*, Immunomodulators.

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INTRODUCTION

It is a blossoming plant that belongs to the family asteraceae as well as is mainly powerful of the thirty varieties. It is most recognized for being a common wild plant and nuisance plant. It is a tropical American native, however it is now found in tropical, subtropical, and mild temperate climates all over the world. *T. Procumbens* classified as a poisonous wild plant and a pest in US. *T. angustifolia, T. serboana, T. bicolor, T. accedens, T. dubia, T. erecta, and T. rosea* are some of the medicinally significant Tridax species. *Tridax Procumbens,* often known as tridax daisy or coat buttons, is a blooming plant in the daisy family. It is most recognized for being a common wild plant as well as nuisance plant. *Tridax Procumbens* has been used for healing of lesion in India for generations also as an anticoagulant, antifungal, and insect repellant. Diarrhoea and dysentery are treated with it. In folk medicine, its leaf extracts were used to cure infectious skin problems. Apart from gastritis and heartburn, it is a recognized for hepatoprotective properties. A study was conducted to verify reports that indigenous people in Rajasthan's Udaipur district were utilizing the plant to cure diabetes. The results were determined to be equivalent to the Glibenclamide reference standard, and the flower extract *T. Procumbens* was found to have anti-diabetic characteristics. [1, 2, 3]

Figure 1: Leaves of *Tridax Procumbens*

Morphological features

The tiny perennial herb Tridax Procumbens L. has blade-like leaves that are short and hairy. The corolla is golden in colour. It grows in open places, tropical coarse-textured soils, sunny dry

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Proceeding Paper

Formulation and Evaluation of Verdant Tablets Containing Saponin-Coalesced Silver Nanoparticles Got from Fenugreek Seed Extract †

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Abstract: Presently nanoparticles are in demand due to several applications. Commercially used Metallic nanoparticles are usually comprised of synthetic chemicals. These chemicals are noxious and combustible. Current research had the objective to explore the advantages of nanoparticles using herbal material; hence we developed silver nanoparticles of aqueous extract of *Trigonella foenum-graecum* (Fenugreek) seeds and formulated them into tablets. Fenugreek seeds contain steroidal sapogenins and are responsible for the reduction of blood cholesterol levels, control diabetes, enhance breast milk production, digestion aid, and helps in weight loss hence prepared formulation can be recommended in all the above cases. The pre-compression parameters evaluated for formulations are bulk density, tapped density, Carr's index Hausner's ratio, angle of repose and results are 0.16 gm/cc, 0.86 gm/cc, 14.16, ratio 1.13 and 32 respectively; whereas post-compression parameters are weight variation, friability, hardness, thickness, and disintegration were evaluated the results are 0.504 gm, 0.2%, 3.21 gm/cm^2, 2.55 mm, and 07 min respectively.

Keywords: nanoparticles; fenugreek; steroidal sapogenins; aqueous extract; tablet; evaluation

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1. Introduction

Nanotechnology is a crucial field of recent research handling the blueprint, synthesis, and manipulation of particle structure starting from roughly 1–100 nm in one dimension. In this sized range, the physical, chemical, and biological properties of the nanoparticles change in fundamentals way from the properties of both individuals, atoms/molecules, and of the corresponding bulk materials. Nanoparticles are often made up of materials of diverse chemical nature, the foremost common being metals, metal oxides, non-oxide ceramics, polymers, silicates, carbon, organics, and biomolecules. Nanoparticles exist in several different morphologies like spheres, cylinders, platelets, tubes, etc. [1]. Silver Nanoparticles are of interest as possess the unique properties (e.g., size and shape relying on optical, electrical, and magnetic properties) which may be incorporated into antimicrobial applications, biosensor materials, composite fibers, cryogenic superconducting materials, cosmetic products, and electronic components. Several physical and chemical methods are used for synthesizing and stabilizing silver nanoparticles [2,3]. Metallic nanoparticles are prepared by wet chemical synthesis including the chemicals are fairly often toxic and flammable. Therefore consistent and eco-friendly process was used to prepare silver nanoparticles including aqueous extract of *Trigonella foenum-graecum* (Fenugreek) seeds and

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