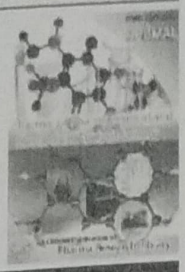
International Journal of Medicine and Pharmaceutical Research

Journal Home Page: www.pharmaresearchlibrary.com/ijmpr



RESEARCH ARTICLE

UV-Visible Spectroscopy: Conspectus

Dr. K. Padmalatha, CH. Anupamaswathi*, P. Pavani, P. Sharon, G. Srilakshmi, Ch. Divya, A. Lavanya, Yoga Priyanka

Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada.

ABSTRACT

UV-VIS Spectroscopy is the term used for the analytical estimation of the different types of the solvents and substances. It has been in use for the last 35 years and become the most important analytical instrument in the modern-day laboratory. Spectrophotometer is generally preferred by small-scale industries as the Instrument is inexpensive and the maintenance problems are minimal. The pharmaceutical analysis includes the procedure necessary to seethe "identity, strength, quality and purity" of compounds. It measures a large number of organic and inorganic compounds in a wide range of products and processes - in nucleic acids and proteins, foodstuffs, pharmaceuticals and fertilizers and also includes the raw material analysis and intermediates during the manufacturing process of drugs. The analysis is based on measuring the absorption of a monochromatic light by colorless compounds in the near ultraviolet path of spectrum (200-400nm).

ARTICLE INFO

Corresponding Author
CH. Anupamaswathi
Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada.
MS-ID: JPBMAL4156

PAPER-QRCODE

ARTICLEHISTORY:Received 21 Oct 2019, **Accepted** 29 Nov 2019, **Available Online**18 January 2020

Citation: *CH. Anupamaswathi, et al.UV-Visible Spectroscopy: Conspectus. J. Pharm, Biomed. A. Lett.,2020, 8(1): 25-29.*

CONTENTS

1. Introduction

Definition: Spectroscopy is defined as study of interaction of electromagnetic radiation with matter. It is the measurement and interpretation of Electro Magnetic Radiation [EMR] absorbed or emitted when the molecules or atoms or ions of a sample move from one energy state to another energy state i.e. from ground state to excited state and excited to ground state.

Spectrum: It is a plot of the response as a function of wavelength or frequency is referred to as a Spectrum.

UV-VIS Spectroscopy: Ultraviolet (UV) spectroscopy is a physical technique and it is based on Beer-Lambert law. This law states that the absorbance of a solution is directly proportional to the concentration and path length. Thus, for a fixed path length, we can determine the concentration

World Journal of Pharmaceutical and Life Sciences
WJPLS
www.wjpls.org
SJIF Impact Factor: 6.129

A SYSTEMIC REVIEW ON ADVERSE DRUG REACTIONS REPORTED IN A PERIOD FROM 2014 TO 2018 IN DIFFERENT PARTS OF INDIA

Sravanthi Appikonda*, Lavanya Eli, Dhanush Bellapu and Padmalatha Kantamneni

Department of Pharmacy Practice, Vijaya Institute of Pharmaceutical sciences for Women, Enikepadu, Vijayawada, Andhra Pradesh, India.

***Corresponding Author: Sravanthi Appikonda**
Department of Pharmacy Practice, Vijaya Institute of Pharmaceutical sciences for Women, Enikepadu, Vijayawada, Andhra Pradesh, India.

Article Received on 05/01/2020 **Article Revised on 26/01/2020** **Article Accepted on 16/02/2020**

ABSTRACT

One of the main causes for the morbidity and the mortality in the world is Adverse Drug Reaction(s) [ADR]. Thalidomide tragedy is the best example for ADR after which international attention to patient safety was gradually increased. There was global occurrence of 10% of ADRs where 2% were reported in India. Major contributors for morbidity, mortality and hospitalization of patients and increasing economic burden of patients are ADRs. CDSCO and Pharmacovigilance play a key role in the identification of ADRS. This study was carried out by collecting different ADRs collected and reported by health care professionals at different places of India. Underreporting was the main problem in reporting an ADR which can be overcome by following spontaneous reporting system. Most vulnerable organs for ADRs are Gastrointestinal tract along with skin & appendages. Antimicrobials are the class of drugs which majorly causes ADRs. Adults and middle aged are common group of people affected due to ADRs. Causality, severity and preventability were calculated using different scales like WHO-UMC causality assessment scale, Naranjo causality assessment scale, Hartwig's severity assessment scale and Schumock and Thornton Preventability assessment scale.

KEYWORDS: Adverse Drug Reaction, ADRs reported in different parts of India, vulnerable organs for ADRs, Most ADR causing drugs.

INTRODUCTION

One of the main causes for the morbidity and the mortality in the world is Adverse Drug Reaction(s) [ADR]. A best example for ADR was Thalidomide tragedy which occurred during late 1950's. An ADR is an untoward effect which can occur even when the drug is given within the therapeutic range.[1]

The most common cause for the medical intervention is drugs, which uses generally for diagnosis or prevention or mitigation. So, the saying goes "Drugs are double edged weapons".[2] One of the important cause for increasing mortality and morbidity in ambulatory and hospitalized patients were Adverse Drug Reactions. [3] Age, gender, co-morbidities, genetic factors are the patient related factors and route of administration, time of administration, duration of therapy, type of drug and dosage of drug are the drug related factors which influences the severity and incidence of Adverse Drug Reaction.[2]

According to World Health Organization (WHO) – ADR is any response to a drug which is noxious, unintended which occurs at doses normally used in man for prophylaxis or diagnosis or therapy of disease or for the modification of physiology of the body.

According to Karch and Lasagna – An ADR is any response to a drug that is noxious and unintended which occurs at doses used in humans for prophylaxis or diagnosis or therapy excluding failure to accomplish the intended purpose.

An important tool for the collection of ADR is to establish a relation between drug and it's reactions. For the betterment of the ADR reporting FDA categorized the serious adverse event into life threatening, initial or prolonged hospitalization, disability, congenital anomaly, required intervention to prevent permanent damage.[1] Proper monitoring of ADRs can prevent the occurrence.[2] Pharmacovigilance and CDSCO (Central Drug Standard Control Organization) are helpful for reducing the preventable adverse drug reactions. [3 & 4] A health care professional (HCP's) plays a vital role in reporting the adverse drug reaction(s). ADRs reported by health care professionals created information to generate new signals which helped in updating the knowledge of other HCP's.[4] There are different scales for the

Review Article

CODEN: IJRPJK ISSN: 2319 – 9563

International Journal of Research in Pharmaceutical and Nano Sciences

Journal homepage: www.ijrpns.com

FAST DISSOLVING ORAL FILMS: AN EMERGING TECHNOLOGY IN DRUG DELIVERY SYSTEMS

A. V. S. Hima Bindu*[1], K. Padmalatha[1], G. Bhavyasree[1], J. Harika[1], S. Anantha lakshmi[1], K. Jayasree[1], A. Supriya[1], B. Lakshmi[1]

[1*]Department of Pharmaceutics, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada 521108, Andhra Pradesh, India.

ABSTRACT

Fast-dissolving oral films have emerged as alternative dosage forms for the patients who experience difficulties in swallowing traditional oral solid dosage forms such as children and the elderly, but also to the general population. These are solid dosage forms, which disintegrate and dissolve immediately within 1 min when placed in the mouth without drinking water or mastication. This technology has been used for local action as well as rapid release products, to enhance drug bioavailability and also to mask the bitter taste of the drug. These formulations are suitable for cough, cold, sore throat, allergenic conditions, nausea, pain, hypertension and CNS disorders, epilepsy and many more diseases. This review reflects information regarding formulation consideration, manufacturing methods and evaluation tests employed in the preparation of fast dissolving oral films.

KEYWORDS

Fast Dissolving Oral films, Without water, Children, Elderly, Rapid release and Polymers.

Author for Correspondence:

Hima Bindu A V S.

Department of Pharmaceutics,

Vijaya Institute of Pharmaceutical Sciences for Women,

Enikepadu, Vijayawada, Andhra Pradesh, India.

Email: satyahimabindu@gmail.com

INTRODUCTION

Oral administration is the most preferred route among all other routes. Most of the drugs are taken orally in the form of tablets, capsules, etc. by all patients including adult, pediatric and geriatric patients. The oral route is sometimes problematic because of the swallowing difficulty for pediatric, geriatric and dysphasic patients who have fear of choking. To beat the issues of conventional tablets, a new drug delivery system for the oral delivery of the drugs, was investigated which is known as Fast dissolving films/oral dispersible

Review Article

CODEN: IJRPJK ISSN: 2319 – 9563

IJRPNS

International Journal of Research in Pharmaceutical and Nano Sciences

Journal homepage: www.ijrpns.com

https://doi.org/10.36673/IJRPNS.2020.v09.i03.A12

MUCOADHESIVE MICROSPHERES: A NOVEL CARRIER IN DRUG DELIVERY

Mohammad Mehraj*[1], A. V. S. Himabindu[1], K. Padmalatha[1]

[1*]Department of Pharmaceutics, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada - 521108, Andhra Pradesh, India.

[2]Department of Pharmacology, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada - 521108, Andhra Pradesh, India.

ABSTRACT

Carrier technology provides an interesting as well as an intelligent approach for the delivery of drug. It provides delivery of drug by interacting the drug to a carrier particle such as microspheres, nanoparticles, liposomes, etc. Microspheres play an important part of the micro particulate drug delivery system because of their small size and other efficient properties. Mucoadhesive microspheres give better drug absorption because of adherence to the mucosal surface and release the drug for a prolonged period. It is an ideal targeting system with high safety profile. This review article gives the information about mucoadhesion, polymers used in mucoadhesive microspheres, number of available methods of preparation of mucoadhesive microspheres.

KEYWORDS

Microspheres, Mucoadhesion and Bioavailability.

Author for Correspondence:

Mohammad Mehraj

Department of Pharmaceutics,

Vijaya Institute of Pharmaceutical Sciences for Women,

Enikepadu, Vijayawada, Andhra Pradesh, India.

Email: satyahimabindu@gmail.com

INTRODUCTION

Oral controlled drug delivery system is the most versatile, convenient and commonly employed route of drug delivery for drugs having less plasma half life and residence time in GIT. Many concepts have been proposed in recent years to provide a dosage form with a longer transit time and therefore a more efficient absorption. Recently the novel dosage forms which may control the release rate and target the active drug molecule to a specific site have attained a best formulation interest. Microspheres are one of the best novel drug delivery system which have several applications and are made up of assorted polymers. The concept of mucoadhesion will more specifically increase gastric retention of drugs[1,2].

Asian Journal of Pharmaceutical and Health Sciences
www.ajphs.com

Pharmaceutical Co-crystals -A review

G. Madhavi, M.V.P.L.Bhavya, T.Lalitha, G. Jyothika, V.V.Bhavana, M.Hema Rani, M.Bhagya Lakshmi, K.Padmalatha
Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada-521108, Andhra Pradesh, India.

ARTICLE HISTORY

Received: 13.09.2019

Accepted: 05.10.2019

Available online: 30.09.2019

Keywords:

Co-crystals,Physico-chemical properties, Techniques

***Corresponding author:**

Email : gorrepatimadhavi@gmail.com
Phone : +91 -

ABSTRACT

Co-crystal formation is one of the methods to improve the physico-chemical properties of the active pharmaceutical ingredient. Co-crystallization with pharmaceutically acceptable compounds do not affect the pharmacological activity of the API but can improve physical properties such as solubility, dissolution rate, moisture stability and compaction behavior. Co-crystals are most dynamically developing group of multicomponent solid pharmaceutical substances. Co-crystals can be divided into co-crystal anhydrates, co-crystal hydrates (solvates), co-crystals of salts (unsolvated, unhydrated, solvated or hydrated). Techniques for preparation of co-crystals are solvent evaporation, anti-solvent method, hot melt extrusion and solvent free grinding. Co-crystals are characterized by hot stage microscopy, differential scanning calorimetry, X-ray diffraction, IR and Raman spectroscopy.

INTRODUCTION

Co-crystals are solids that are neutral crystalline single-phase materials composed of two or more different molecular and/or ionic compounds generally in a stoichiometric ratio, which are neither solvates nor simple salts [1]. If at least one of the coformers is an API and the other is pharmaceutically acceptable, then it is recognized as pharmaceutical co-crystal [1]. Co-crystals of different stoichiometric with the same coformer is possible, as illustrated bycarbamazepine and *p*- amino benzoic acid in 1:1, 2:1 and 4:1stoichiometric configurations [2]. Hydrogen bonds are the basis of molecular recognition phenomena in pharmaceutical systems and are responsible for the generation of molecular networks with the same molecular components or with the different molecular components in the crystalline state [3].

Crystal forms are more preferred than the other forms because of their stability, reproducibility. Amorphous and other solid solutions such as partially crystalline forms, subcooled liquid and the different types of crystal forms that have variable dissolution rates and intrinsic solubility, which severely affect bioavailability [4]. Various methods have been designed for solubility improvement of API such as salt formation, micronization, emulsification and polymer drug vehicles [5].

Co-crystals are most dynamically developing group of multicomponent solid pharmaceutical substances. Co-crystals can be divided into co-crystal anhydrates, co-crystal hydrates (solvates), co-crystals of salts (unsolvated, unhydrated, solvated or hydrated).The solubility enhancement of biopharmaceutical class II and IV drugs is challenge for the formulation scientists. Thus, the knowledge of crystal engineering along with the molecular properties of active pharmaceutical ingredients can poses a great option [6].

PHARMACEUTICAL CO-CRYSTALS

A co-crystal is a multicomponent crystal in which all components are usually solid at room temperature in a stoichiometric ratio and it involves non-covalent interactions such as hydrogen bonds, vander-waals bonds, ionic bonds in a crystal lattice. Co-crystals incorporate pharmaceutically acceptable guest molecules into a crystal lattice along with the API. Physicochemical properties of pharmaceuticals can be improved by obtaining cocrystals using co-crystallization. Co-crystallization with pharmaceutically acceptable compounds did not affect the pharmacological activity of the API but can improve physical properties such as solubility, stability, compaction behavior [7,8].

Pharmaceutical co-crystals can be defined as crystalline materials comprised of an API and one or more unique co-crystal formers, which are solids at room temperature. The improvement of physical and chemical property by using crystal engineering can be useful for pharmaceutical co-crystals. A pharmaceutical co-crystal is a single crystalline solid that incorporates two neutral molecules, one being an API and the other crystal former.

CO-CRYSTALS AND SOLVATES

The main difference between the solvates and co-crystals is the physical state of the isolated pure components: if one of the component is a liquid at room temperature, the crystals are designated as solvates: if both components are solids at room

World Journal of Pharmaceutical Sciences
ISSN (Print): 2321-3310; ISSN (Online): 2321-3086
Available online at: http://www.wjpsonline.org/
Review Article

A brief review on bubble baby disease

Sajja Molya[1], Naveen Y*[1], Praveen Sivadasu[2] and Padmalatha Kantamaneni[3]

[1]Department of Pharmacy Practice, [2]Department of Pharmaceutics and [3]Department of Pharmacology, Vijaya Institute of Pharmaceutical Sciences for women, Enikepadu, Vijayawada, Andhra Pradesh, 521108

Received: 09-07-2020 / Revised Accepted: 20-08-2020 / Published: 30-08-2020

ABSTRACT

Bubble baby disease is scientifically known as Adenosine deaminase - Severe combined immunodeficiency disease (ADA-SCIDS) which is a rarely occurring disease predominantly in infants (one in a lakh population). The disease is initiated by a complete deficiency of the immune system where the infants cannot tolerate even minor infections or allergies. Further, it is mainly caused due to the mutation in the gene IL2RG located on the X chromosome of the parents. To date, there is no particular test to diagnosis this disease, and delay in diagnosing this disease may lead to the death of a particular infant. Furthermore, in recent times researchers are concentrating on developing a test method to diagnose the disease rapidly. The treatment options include bone marrow transplantation, gene therapy, and pharmacotherapy (Calcarea phosp tablets) with reckeweg treatment (natural immunity booster drops). Though therapies very effective in improving the health of infants they possess few drawbacks like keeping the babies in sterile and isolated conditions which are done by placing the baby in a bubble made up of plastic. This short communication will cover about the disease and treatment options available in the present scenario.

Keywords: Bubble baby disease; Immunodeficiency; X chromosome; IL2RGgene; Infants

INTRODUCTION

Severe combined immunodeficiency (SCID) is a group of genetic diseases causing profound developmental and functional impairment of T cells, affecting cellular and humoral immunities. Under this classification when an infant is unable to synthesize adenosine which decreases levels of T&B lymphocytes leading to a complete shutdown of the immune system and making the baby live in a bubble made of plastic is termed as bubble baby disease as shown in Fig 1. [1]Further, among the various genes that cause this disorder IL-2 receptor gamma chain gene (IL2RG) which accounted for more than 19% of total 45 cases prior and post T-cell receptor excision circle (TREC) in the USA

Address for Correspondence: Mr. Yaradesi Naveen, Asst Professor, Dept of Pharmacy Practice, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, Andhra Pradesh -521108; E-mail: naveennaga7789@gmail.com

How to Cite this Article: Sajja Molya, Naveen Y, Praveen Sivadasu and Padmalatha Kantamaneni. A brief review on bubble baby disease. World J Pharm Sci 2020; 8(9): 175-178.

STM JOURNALS

Research & Reviews: A Journal of Drug Design & Discovery
ISSN: 2349-9036
Volume 7, Issue 1
www.stmjournals.com

Evaluation of Antiulcer Activity of *Allamanda cathartica* Aqueous Leaf Extract in Experimental Rat Models

D. Santhi Krupa[1,*], Kusuma V.[2], Sushma Reddy[2], Sofia Begum[2], Siresha K.[2], Pooja Neelima[2], Padmalatha K.[3]

[1]Assistant Professor, Department of Pharmacology, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, Andhra Pradesh, India

[2]Student, Department of Pharmacology, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, Andhra Pradesh, India

[3]Principal, Department of Pharmacology, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, Andhra Pradesh, India

Abstract

A peptic ulcer is an open sore that forms on an epithelial surface of the stomach. To decrease the incidence of relapses, side effects, drug interactions of the existing drugs, and to increase the use of available phytochemicals, this present study was aimed to evaluate the antiulcer activity of Allamanda cathartica using pyloric ligation induced gastric ulcer model and Aspirin-induced gastric ulcer model. In pyloric ligation induced gastric ulceration model, Group I receives distilled water. Group II receives ranitidine 50 mg/kg, p.o. Group III and IV receive Allamanda cathartica aqueous leaf extract (ACALE) at 250 mg/kg and 500 mg/kg, p.o, respectively for 7 days. In the Aspirin-induced gastric ulcer model, Group I receive 1% CMC, Group II receive Aspirin (100 mg/Kg, p.o), Group III receive ranitidine (50 mg/kg, p.o), Group IV and Group V receive ACALE at 250 and 500 mg/kg, p.o along with Aspirin. ACALE consists of flavonoids, alkaloids. ACALE 500 mg/kg had shown antiulcer activity on pyloric ligation induced experimental models by decreasing the effect of gastric acid on GIT and by its antisecretory activity. In the Aspirin-induced gastric ulcer model, Group IV and V had shown a decrease in ulcer index, increased ulcer protection, decrease in gastric acidity parameters. The findings of the present study conclude that the phytochemicals, within ACALE can treat both Pylorus ligated and Aspirin-induced gastric ulcers. So, ACALE should be evaluated further and developed for future use as antiulcer drug.

Keywords: *Side effects, ligation, gastric ulcer, antisecretory, flavonoids*

****Author for Correspondence*** E-mail: shanthikrupa@gmail.com

INTRODUCTION

A peptic ulcer is an open sore that forms on an epithelial surface and leads to loss of tissue lining the lower esophagus, stomach, or duodenum. According to the most recent WHO data, peptic ulcer deaths in India had reached in 57,658. Peptic ulcer disease (PUD) had been a significant source of morbidity and mortality worldwide. Antisecretory antiulcer, mucoprotective drugs are used to treat peptic ulcers and, *H. Pylori* mediated gastric ulcer therapy had demanded the inclusion of antibiotic regimens [1, 2]. The existing proton pump inhibitors, anticholinergics, acid neutralizers, antibiotics, H_2-receptor blockers, sucralfate, and bismuth may produce various side effects, on long term use. Plant extracts, their crudes are viewed as a significant store of medications. Flavonoids, a highly diverse class of plant secondary metabolites with beneficial human health effects, can act as potential molecules in the healing of gastric ulcers. Based on the above basis, this present study was planned and aimed to evaluate the antiulcer activity of widely distributed golden trumpet plant, *Allamanda cathartica* using *in-vivo* experimental methods. It can decrease the incidence of relapses, side effects, drug interactions and increases use of available phytochemicals for the human health benefits. Identification of the new

An Elsevier Indexed Journal

ISSN-2230-7346

Journal of Global Trends in Pharmaceutical Sciences

FORMULATION AND EVALUATION OF ATORVASTATIN CALCIUM LIQUISOLID TABLETS & COMPARING THE DISSOLUTION DATA WITH MARKETED TABLET

Kalyani Devi. T[1]*, Venkateswara Rao. S[1] and Padmalatha. K[2]

Department of Pharmaceutics[1], Department of Pharmacology[2],
Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada–521108,

*Corresponding author E-mail: venkateshsadhu@gmail.com

ARTICLE INFO

Key words:
Atorvastatin calcium, Liquisolid compacts and Dissolution rate.

Access this article online
Website: https://www.jgtps.com/
Quick Response Code:

ABSTRACT

Objective: The objective of the present investigation was to improve dissolution and bioavailability of practically insoluble lipid lowering drug Atorvastatin calcium using liquisolid technique. **Method**: Liquisolid compacts were prepared by using various carriers and a mathematical model for calculating the required quantities of powder and liquid ingredient to produce an acceptably flow and a compressible admixture. Micro crystalline cellulose, Lactose monohydrate, Hydroxy propyl methyl cellulose, Dicalcium phosphate , Silicon dioxide, Crosscarmellulose were employed as carrier, coating material and super disintegrant respectively. The prepared liquisolid compacts were evaluated for their micromeritic properties and drug-excipient interactions by FTIR. The liquisolid tablets were prepared and evaluated for their tableting properties. **Results:** The liquisolid systems showed acceptable micromeritic properties, the FTIR studies states that there is no chemical interaction between the drug and the excipients. The tableting properties of the liquisolid compacts were within the accepted limits. The release rate of Atorvastatin calcium was higher when compared to the marketed Atorvastatin calcium. **Conclusion**: In the present research work, the potential of liquisolid systems to enhance the dissolution properties of Atorvastatin calcium was investigated. In case of Atorvastatin calcium liquisolid tablets thereby revealing enhanced dissolution rate than marketed tablets. Thus the objective of incorporating Atorvastatin calcium into liquisolid system to achieve faster dissolution rates was met with success.

INTRODUCTION

The oral route of administration is preferred route for drug administration because of its high patient compliance and drug development, the problem associated with oral route was plasma drug concentration may not be reached. The solubility of drug is the major concern, it is the major factor to achieve desired concentration of drug in systemic circulation. Most of the hydrophobic drugs are slightly soluble drugs, for such drugs dissolution is the rate limiting step. The major Challenge for poorly soluble drugs is to enhance to dissolution rate, because the therapeutic dose of the drug substance depends upon bioavailability which in turn depends on the solubility and dissolution rate[1]. Various techniques have been employed in order to formulate drug delivery system which enhances the dissolution rate were lyophilization, microencapsulation, solid dispersion, inclusion, co precipitation, of drug solution or liquid drugs into soft or hard gelatin capsules. all the above techniques having high production cost and technology demanding[2]. By using the

World Journal of Pharmaceutical Sciences
ISSN (Print): 2321-3310; ISSN (Online): 2321-3086
Available online at: http://www.wjpsonline.org/
Review Article

Gastro retentive floating microspheres: A review

Pooja M[1], Venkateswara Rao Sadhu[1], Padmalatha Katamaneni[2]

Department of Pharmaceutics[1], Department of Pharmacology[2], Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada–521108, India

Received: 21-04-2020 / Revised Accepted: 30-05-2020 / Published: 31-05-2020

ABSTRACT

Drug absorption in the gastrointestinal tract is a highly variable process. Floating Microspheres are promises to be a potential approach for gastric retention enhances the bioavailability and controlled delivery of various therapeutic agents. Gastro retentive floating microspheres are low density systems that have sufficient buoyancy to float over gastric contents and remain and remain in stomach for prolonged period. The drug is released slowly at desired rate resulting in increased gastric retention with reduced fluctuations in plasma drug concentration. Floating microspheres to improve patient compliance by decreasing dosing frequency, better therapeutic effect of short half-life drugs can be achieved. Enhanced absorption of drugs which solubilise only in stomach, gastric retention time is increased because of buoyancy. Floating microspheres are prepared by solvent diffusion and solvent evaporation methods to create the hollow inner core. In the present review preparation, methods, characterization, advantages, mechanism of drug release from microspheres, list of polymers, applications and list of drugs formulated as floating microspheres are discussed.

Keywords: Floating Microspheres, Gastro Retention, Short half- life drugs and Solvent Diffusion.

Address for Correspondence: Mr. Sadhu Venkateswara Rao, Associate Professor, Department of Pharmaceutics, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, India; E-mail: venkateshsadhu@gmail.com

How to Cite this Article: Pooja M, Venkateswara Rao Sadhu, Padmalatha Katamaneni. Gastro retentive floating microspheres: A review. World J Pharm Sci 2020; 8(6): 121-126.

World Journal of Pharmaceutical and Life Sciences
WJPLS
www.wjpls.org
SJIF Impact Factor: 6.129

A REVIEW ON ROLE OF PHARMACIST ON ECONOMIC BURDEN OF ADVERSE DRUG REACTIONS

Chaithra Vemparala*, Tabitha Sharon, Sreenu Thalla and Padmalatha Kantamneni

Department of Pharmacy Practice, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu Vijayawada, Andhra Pradesh, India.

***Corresponding Author: Chaithra Vemparala**
Department of Pharmacy Practice, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu Vijayawada, Andhra Pradesh, India.

Article Received on 05/01/2020 **Article Revised on 26/01/2020** **Article Accepted on 16/02/2020**

ABSTRACT

Adverse drug reaction (ADR) defined as harmful or unpleasant reaction resulting from intervention due to the use of medicinal product which may produce hazard from future administration. The incidence of ADRs was being increased from 3.7% to 30%. The studies report that ADRs account for 5% of hospital admissions and seen in 10-20% of hospitalized patients. Incidence of serious ADRs was 6.7% and fatal ADRs were 0.32% respectively. ADRs account for 4.2-30% of hospital admissions in United States and Canada, 2.5-10.6% in Europe and 5.7-18.8% in Australia. The pharmacist must assist in monitoring the safe and effective use of medication and reduce the occurrence of ADRs. As the pharmacists have vast knowledge of therapeutics and pharmacology of medications they can detect and monitor the ADRs and other medication related problems. Pharmacists should work together with other health care professionals to increase reporting of ADRs in hospital and community settings.

KEYWORDS: Adverse drug reaction, economic burden, patients', pharmacist, medications.

INTRODUCTION

Adverse drug reaction (ADR) defined as harmful or unpleasant reaction resulting from intervention due to the use of medicinal product which may produce hazard from future administration. Even though ADRs are to be concerned by the medical professionals, pharmaceutical industry and regulatory authorities, they are not being reported. In India, under aegis of ministry of health and family welfare initiated Pharmacovigilance Programme of India and established adverse drug monitoring centers at different areas of the country to monitor ADRs.[2] The incidence of ADRs was being increased from 3.7% to 30%. Based on the incidence and severity of ADRs the cost per ADR ranges from 215- 459 United States (US) dollars and cost per in-house ADRs alone was 2 million US dollars in general medicine department. In India it has been estimated that the amount to treat ADRs was INR690/- (Indian Rupee). Underreporting of ADR is the most commonly reported problem for the incidence of ADRs. This increases the economic burden on the society and government and affects the healthcare system and patients in many ways such as complication of therapy, prolongation of hospital visits and in turn leads to increased economic costs for patients as well as government. In US the annual economic burden accounts 177.4 billion dollars.[4] The present review focus on economic burden on patients and government due to ADRs and role of clinical pharmacist to compensate them with specific treatment or alteration of dosage regimen or withdrawal of product (drug).

EPIDEMIOLOGY

A systematic review was done by considering 16 studies to find out the incidence of ADRs that lead to hospitalization and that developed during hospitalization. The risk factors for ADRs were age, gender and polypharmacy. Studies which include ADR that lead to hospitalization and developed during hospitalization were 10. Six studies included ADRs that lead to hospitalization and 5 studies included ADRs that developed during hospitalization. This study concluded that hospitalized patients had significant burden of ADRs.[1]The studies report that ADRs account for 5% of hospital admissions and seen in 10-20% of hospitalized patients. Incidence of serious ADRs was 6.7% and fatal ADRs were 0.32% respectively.[2] ADRs account for 4.2-30% of hospital admissions in United States and Canada, 2.5-10.6% in Europe and 5.7-18.8% in Australia.[5] Another study reported that in south India, among 3.7% hospital admissions suffering from ADR, 1.3% was fatal and 0.7% of admissions were due to ADRs.[10]

An Elsevier Indexed Journal ISSN-2230-7346

Journal of Global Trends in Pharmaceutical Sciences

HPLC METHOD DEVELOPMENT AND VALIDATION FOR THE DETERMINATION OF RITONAVIR IN PURE FORM AND PHARMACEUTICAL DOSAGE FORMS

K. Lasya*, M. Vamsi Krishna and K. Padmalatha

Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada – 521108.

***Corresponding author E-mail:** lasya.kadiyala@gmail.com

ARTICLE INFO

Key Words
Ritonavir, HPLC, Validation. Pharmaceutical dosage forms

Access this article online
Website: https://www.jgtps.com/
Quick Response Code:

ABSTRACT

A simple, selective, rapid and precise HPLC method was developed for the estimation of ritonavir in pure form and in pharmaceutical dosage forms. The drug was separated on a Luna C18 (4.6×250mm, 5µm) column with mobile phase comprising of acetonitrile: water in the ratio of 80:20%v/v. Retention time of the drug was found to be4.09 min. Linearity of the method was found to be 10-50µg/mL. Assay of the formulation was found to be 100.27%. The method was validated according to the ICH guidelines. The method was found to be suitable for the routine quality control analysis of ritonavir.

INTRODUCTION

Ritonavir is an antiretroviral drug from the protease inhibitor class used to treat HIV infection and AIDS [1]. It is an HIV protease inhibitor that interferes with the reproductive cycle of HIV. Although it was initially developed as an independent antiviral agent, it has been shown to possess advantageous properties in combination regimens with low-dose ritonavir and other protease inhibitors. Ritonavir inhibits the HIV viral proteinase enzyme that normally cleaves the structural and replicative proteins that arise from major HIV genes, such as gag and pol.

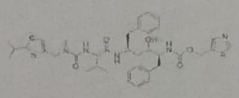


Fig. 1: Structure of Ritonavir

Chemically ritonavir is 10-Hydroxy -2-methyl-5-(1-methylethyl)-1-[2-(1-methylethyl)-4thiazolyl]-3,6-dioxo-8,11-bis(phenylmethyl)-2,4,7,12tetraazatridecan-13-oic acid,5-thiazolyl methyl ester, [5S-(5R*,8R*,10R*,11R*)]. Structure of ritonavir is given in figure 1. It is white to light tan powder. Practically insoluble in water, freely soluble in methanol and ethanol, and soluble in isopropanol. Molecular weight of ritonavir is 720.944. Literature survey revealed that few spectrophotometric [2, 3], HPLC [4-9] and LC-MS/MS [10, 11] methods have been reported for estimation of ritonavir. In the present investigation we have developed a simple, rapid and precise HPLC method for the estimation of ritonavir in pure form and pharmaceutical dosage forms.

An Elsevier Indexed Journal ISSN-2230-7346

Journal of Global Trends in Pharmaceutical Sciences

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR THE ESTIMATION OF TELBIVUDINE IN BULK DRUGS AND PHARMACEUTICAL FORMULATIONS

M. Gnana Chandrika*, M. Vamsi Krishna and K. Padmalatha

Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada-521108. Andhra Pradesh, India

***Corresponding author E-mail:chandrika.bharathi@gmail.com**

ARTICLE INFO

Key Words
Telbivudine, HPLC, Validation, Pharmaceutical Formulations

Access this article online Website: https://www.jgtps.com/ Quick Response Code:

ABSTRACT

A simple, selective, rapid and precise HPLC method was developed for the estimation of telbivudine in bulk drugs and in pharmaceutical formulations. The drug was separated on a Luna C18 (4.6×150mm, 5µm) column with mobile phase comprising of methanol: water in the ratio of 70:30%v/v. Retention time of the drug was found to be2.8 min. Linearity of the method was found to be 10-50µg/ml. The method was validated according to the ICH guidelines. The method was found to be suitable for the routine quality control analysis of telbivudine.

INTRODUCTION

Telbivudine (TBD) is a synthetic thymidine nucleoside analog with specific activity against the hepatitis B virus. Telbivudine is orally administered, with good tolerance, lack of toxicity and no dose-limiting side effects. The chemical name for telbivudine is 1-((2S,4R,5S)-4-hydroxy-5hydroxymethyltetrahydrofuran-2-yl)-5-methyl-1H-pyrimidine-2,4-dione, or 1-(2-deoxy-β-L-ribofuranosyl)-5methyluracil. Telbivudine is the unmodified β-L enantiomer of the naturally occurring nucleoside, thymidine. Its molecular formula is $C_{10}H_{14}N_2O_5$, which corresponds to a molecular weight of 242.23. Structure of telbivudine is given in figure 1.

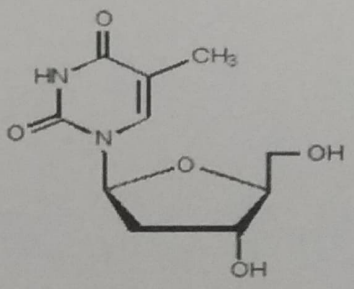


Figure 1: Structure of telbivudine

Telbivudine is a white to slightly yellowish powder. Telbivudine is sparingly soluble in water (greater than 20 mg per mL), and very slightly soluble in absolute ethanol (0.7 mg per mL) and n-octanol (0.1 mg per mL). Telbivudine inhibits HBV DNA

World Journal of Pharmaceutical Sciences
ISSN (Print): 2321-3310; ISSN (Online): 2321-3086
Available online at: http://www.wjpsonline.org/
Review Article

Analytical and Bio-analytical Methods of Telbivudine: A Review

M. GnanaChandrika, M. Vamsi Krishna and K. Padmalatha

Department of Pharmaceutical Analysis, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada-521108

Received: 01-06-2020 / Revised Accepted: 19-06-2020 / Published: 01-07-2020

ABSTRACT

Telbivudine is a synthetic thymidine nucleoside analog with specific activity against the hepatitis B virus. Telbivudine acts by inhibiting HBV DNA polymerase (reverse transcriptase) by competing with the natural substrate, thymidine 5'–triphosphate. This leads to the chain termination of DNA synthesis, thereby inhibiting viral replication. HPLC and LC-MS/MS methods have been reported for the estimation of telbivudine in bulk drugs, pharmaceutical formulations and biological fluids. In this review we have presented the different analytical and bio-analytical methods reported for the telbivudine.

Keywords: Telbivudine, Hepatitis B virus, Analytical and bio-analytical methods

Address for Correspondence: M. GnanaChandrika, Department of Pharmaceutical Analysis, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada-521108
E-mail: chandrika.bharathi@gmail.com

How to Cite this Article: M. GnanaChandrika, M. Vamsi Krishna and K. Padmalatha. Analytical and Bio-analytical Methods of Telbivudine: A Review. World J Pharm Sci 2020; 8(7): 12-15.

Indian Journal of Natural Products and Resources
Vol. 10(4). December 2019. pp 238-251

Hepatoprotective studies of floral extracts of *Gomphrena serrata* L. and piperic acid on CCl_4 induced hepatotoxicity

Mamillapalli Vani[1*], Shaik Abdul Rahaman[2] and Avula Prameela Rani[3]

[1]Department of Pharmacognosy and Phytochemistry, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu 521108, Vijayawada, Krishna (Dt.), Andhra Pradesh, India

[2]Department of Medicinal Chemistry, Nirmala College of Pharmacy, Atmakur 522503, Mangalagiri, Guntur (Dt.), Andhra Pradesh, India

[3]Department of Pharmaceutics, Acharya Nagarjuna University, Nagarjuna Nagar 522510, Guntur, Andhra Pradesh, India

Received 03 November 2018; Revised 29 December 2019

The present investigation aims to isolate, characterise and evaluate the phytoconstituents of *Gomphrena serrata* L. responsible for hepatoprotective activity in carbon tetrachloride-induced hepatotoxicity models both *in vitro* and *in vivo*. The plant species has not been explored for various therapeutic activities. HPLC analysis of subfraction of plant extract showed the presence of piperine, which was isolated and further hydrolysed to piperic acid. The results of the study indicate that the plant hydroalcoholic, acetone extracts at 500 mg/kg and compound piperic acid at 0.5 mg/kg exhibited better results in the regeneration of damaged hepatocytes and reduction of biochemical marker enzymes. The hepatoprotective activity might be due to inhibition of cytochrome P450 2E induced ER and oxidative stress. The present study reveals that the hepatoprotective activity of floral extracts might be due to *in situ* conversion of piperine into piperic acid. As piperic acid showed the equipotent potential to standard drug silymarin, it can be further developed as a hepatoprotective drug.

Keywords: *Gomphrena serrata* L., *G. serrata* extracts, Hepatoprotective, Piperic acid.

IPC code; Int. cl. (2015.01)- A61K 36/00, A61K 36/21, A61K 133/00, A61P 1/00, A61P 1/16

Introduction

The plant kingdom is an enormous resource of therapeutic entities. Therapeutic search for novel molecules always drives researchers to herbs. Damage to liver and liver diseases has become a common problem worldwide[1]. Alcohol abuse and nonalcoholic fatty liver disease (NAFLD), a metabolic disorder, which promote oxidative stress and inflammation, are the most common causes of hepatic damage[2]. Cirrhosis, jaundice and fatty liver include the more prominent liver diseases[3]. Current pharmacotherapy of liver disorders uses a limited number of drugs with profound side effects. Herbal medicines are used in the treatment of hepatic problems[4]. The therapeutic area of hepatic problems requires novel hepatoprotective agents with different modes of action. The drugs which activate endoplasmic reticulum (ER) stress response evolve as better therapeutic agents for hepatic problems[5].

*Correspondent author
Research Scholar at School of Pharmaceutical Sciences & Technologies, Jawaharlal Nehru Technological University, Kakinada, Andhra Pradesh, India
Email: vanimamillapalli@yahoo.co.in
Mob.: 09704625782

The genus *Gomphrena* is cosmopolitan with 140 species occurring in different temperate, and subtropical regions of the world. Many plants of the family Amaranthaceae are employed in folk medicine for their nutritive assets and treatment of several diseases. The plant *G. serrata* L. Amaranthaceae is an ornamental, edible, roadside plant grown in the regions of America, Antarctica, and Indo-Malaysia. The plant species has not been explored scientifically much for phytochemical and pharmacological studies. The closest species *G. celoisoides* is often confused with *G. serrata*[6] and hence selected plant species (*G. serrata)* has been neglected. The genus *Gomphrena* is being used for the treatment of jaundice, high cholesterol and urinary problems in Latin America and Caribbean[7,8]. The folklore people of different regions use *G. Serrata* leaf extracts as natural blood coagulators, and the whole plant extracts in cardiovascular and diabetic disorders[9-11]. The whole plant alcoholic, aqueous and *n*-hexane extracts were studied for antibacterial properties against *Bacillus cereus* and *Escherichia coli*[12]. Oleuropein was isolated from the plant extracts[13]. The

Indian Journal of Drugs, 2019, 7(4), 140-146

ISSN: 2348-1684

Research Article

STUDY OF PIPERIC ACID FOR ANTIASTHMATIC ACTIVITY IN GUINEA PIGS

Vani Mamillapalli *1, Abdul Rahaman Shaik 2, and Prameela Rani Avula3

1Jawaharlal Nehru Technological University, Research Scholar, Department of Pharmacy, Kakinada-533003, East Godavari (Dt.), Andhra Pradesh, India, +919704625782

2 Nirmala College of Pharmacy, Faculty,Department of Medicinal Chemistry, Atmakur, Mangalagiri-522503, Guntur (Dt.), Andhra Pradesh, India, +919849702527

3 Acharya Nagarjuna University, Faculty, Department of Pharmaceutics, Nagarjuna Nagar, Guntur-522510, Andhra Pradesh, India, +919440056759

*For Correspondence:
Vijaya Institute of Pharmaceutical Sciences for Women, Faculty, Department of Pharmacognosy & Phytochemistry, Enikepadu, Vijayawada, Krishna (Dt.), Andhra Pradesh, India, +919704625782

Received: 07.06.2019
Accepted: 22.12.2019

Access this article online

Website:
www.drugresearch.in

Quick Response Code:

ABSTRACT

Piperic acid an aromatic acid, usually a metabolite of piperine exists naturally in piperaceae and amaranthaceae families. The synthetic derivatives of pipericacid act as promising bioactive molecules. They are anti- oxidant and anti-inflammatory agents. Antihistaminic and anticholinergic studies are used as a part of antiasthmatic study. In the current study antihistaminic and anticholinergic studies were carried out using guinea pig bronchi and ilei in naturally isolated compound piperic acid from the acetone flower extracts of the plant Gomphrena serrata. The results indicate that the compound (2 mg/kg 10.89 ± 2.01*** at $p<0.001$) showed profound anticholinergic activity significantly in acetylcholine induced bronchospasm model compared to standard drug atropinesulphate (2 mg/kg 11.60±1.24). The compound can be further studied for antiasthmatic activity by various other ways to establish its mechanism of action as well as drug development studies to render it a novel antiasthmatic drug.

KEY WORDS: Antiasthmatic, bronchospasm, anticholinergic, isolated.

INTRODUCTION

Bronchospasm, a pulmonary disease caused by constriction of lung muscles usually found associated with respiratory conditions such as asthma or irritants. It makes difficulty in breathing which can be mild to severe (Broide 2001). Presently, no full cure is available, but management methods can help withstand the disease. The drugs currently available show symptomatic and poor response with few side effects. Use of natural drugs is still common and wide spread all over the world. The pathogenesis of asthma is complex, and the use of herbals is also complicated with respect to their role and effective targets. Hence, separation of the effective constituents from herbals and studying their efficiency forms the general basic approach for asthma

© 2019 Journal of Pharmacy & Pharmacognosy Research, 7 (4), 234-245, 2019
ISSN 0719-4250
http://jppres.com/jppres

Original Article | Artículo Original

Hepatoprotective activity of 2-piperidone isolated from leaf extracts of *Talinum portulacifolium* (Forssk.) Asch. ex Schweinf in carbon tetrachloride induced hepatotoxicity

[Actividad hepatoprotectora de 2-piperidona aislada de extractos de hojas de *Talinum portulacifolium* (Forssk.) Asch. ex Schweinf en hepatotoxicidad inducida por tetracloruro de carbono]

Vani Mamillapalli[1,2*], Abdul Rahaman Shaik[3], Prameela Rani Avula[4]

[1]Department of Pharmacy, Jawaharlal Nehru Technological University, Kakinada, Pin code 533003, East Godavari (Dt.), Andhra Pradesh, India.
[2]Department of Pharmacognosy & Phytochemistry, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Pin code 521108, Vijayawada, Krishna (Dt.), Andhra Pradesh, India.
[3]Department of Medicinal Chemistry, Nirmala College of Pharmacy, Atmakur, Mangalagiri, Pin code 522503, Guntur (Dt.), Andhra Pradesh, India.
[4]Department of Pharmaceutics, Acharya Nagarjuna University, Nagarjuna Nagar, Pin code 522510, Guntur, Andhra Pradesh, India.
*E-mail: vijayapharmacyfw@gmail.com

Abstract

Context: Liver disorders have become common problem worldwide. The drugs available currently for the treatment are few with serious side effects. Since phytochemicals have proven to be potential therapeutic agents, an attempt has been made to screen novel hepatoprotective agents from the leaves of the medicinally ignored plant *Talinum portulacifolium*.

Aims: To evaluate the phytoconstituents of *Talinum portulacifolium* responsible for hepatoprotective activity in carbon tetrachloride-induced hepatotoxicity models both *in vitro and in vivo*.

Methods: The hepatic damage was assessed *in vitro* by serum marker enzymes alanine aminotransferase, aspartate aminotransferase, and alkaline phosphatase followed by *in vivo* histopathological examination.

Results: The results of the study indicate that the plant hydroalcoholic and acetone extracts at 500 mg/kg and compound 2-piperidone at 0.5 mg/kg exhibited equipotent results in the reduction of biochemical marker enzymes ($p<0.01$. $p<0.05$ and $p<0.001$) significantly compared to standard drug silymarin. The histopathological studies further supported that compound 2-piperidone showed better regeneration of damaged hepatocytes compared to standard. The possible mechanism of action may be due to inhibition of cytochrome P450 2E induced endoplasmic reticulum and oxidative stress.

Conclusions: The present study reveals that the hepatoprotective activity of leaf hydroalcoholic and acetone extracts may be due to the presence of 2-piperidone. As it showed equipotent potential to standard drug silymarin, it can be further developed as a hepatoprotective drug.

Keywords: hepatoprotective; 2-piperidone; *Talinum portulacifolium*.

Resumen

Contexto: Los trastornos hepáticos se han convertido en un problema común en todo el mundo. Los medicamentos disponibles actualmente para el tratamiento son pocos con efectos secundarios graves. Dado que los fitoquímicos han demostrado ser agentes terapéuticos potenciales, se ha intentado seleccionar nuevos agentes hepatoprotectores de las hojas de *Talinum portulacifolium*.

Objetivos: Evaluar los fitoconstituyentes de *Talinum portulacifolium* responsables de la actividad hepatoprotectora en modelos de hepatotoxicidad inducida por tetracloruro de carbono tanto *in vitro* como *in vivo*.

Métodos: El daño hepático se evaluó *in vitro* mediante las enzimas marcadoras séricas alanina aminotransferasa, aspartato aminotransferasa y fosfatasa alcalina, seguido de un examen histopatológico *in vivo*.

Resultados: Los resultados del estudio indican que los extractos hidroalcohólicos y de acetona de la planta a 500 mg/kg y el compuesto 2-piperidona a 0,5 mg/kg mostraron resultados significativos ($p<0,01$. $p<0,05$ y $p<0,001$) equipotentes en la reducción de las enzimas marcadoras bioquímicas en comparación con la droga estándar de silimarina. Los estudios histopatológicos respaldaron además que el compuesto 2-piperidona mostró una mejor regeneración de hepatocitos dañados en comparación con el estándar. El posible mecanismo de acción puede deberse a la inhibición del retículo endoplásmico inducido por el citocromo P450 2E y al estrés oxidativo.

Conclusiones: El presente estudio revela que la actividad hepatoprotectora de los extractos hidroalcohólicos y de acetona de las hojas puede deberse a la presencia de 2-piperidona. Como mostró un potencial equipotente a la silimarina estándar, pudiera desarrollarse como un fármaco hepatoprotector.

Palabras Clave: hepatoprotector; 2-piperidona; *Talinum portulacifolium*.

ARTICLE INFO
Received: November 13, 2018.
Received in revised form: May 16, 2019.
Accepted: May 25, 2019.
Available Online: June 10, 2019.
Declaration of interests: The authors declare no conflict of interest.
Funding: The authors confirm that the project has not funding or grants.

World Journal of Pharmaceutical Sciences
ISSN (Print): 2321-3310; ISSN (Online): 2321-3086
Available online at: http://www.wjpsonline.org/
Review Article

A review on gemcitabine hydrocloride

K. Padmalatha, D. Vijaya Durga, R. Chaitanya

Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada

Received: 02-03-2020 / Revised Accepted: 31-03-2020 / Published: 01-05-2020

ABSTRACT

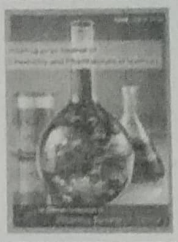
Analytical method development and validation is an integral part during the development of drug substance and drug product in the pharmaceutical industry. It plays important role in the discovery, development, manufacture and quality control of pharmaceuticals. Analytical methods are designed to determine the drug content in formulation, presence of impurities, separation of drug and its related impurities and degraded products. Validation of method proves that it can be suitable for its use in research and development and assures the reliability of proposed method. Now days, need of analytical method development is increasing due to the emergence of new drugs and development of new combinations of various drugs as their standard methods are not available in Pharmacopoeias. An effective method development and its validation prove to be very useful in drug discovery and development. This review is focused on literature findings from 2009-2018 of analytical method development and validation of gemcitabine hydrochloride drug in various dosage forms.

Keywords: Gemcitabine, method development, spectrophotometric, RP-HPLC, validation

Address for Correspondence: D. Vijaya Durga, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada; Email: remalli.chaitanya999@gmail.com

How to Cite this Article: K. Padmalatha, D. Vijaya Durga, R. Chaitanya. A review on gemcitabine hydrochloride. World J Pharm Sci 2020; 8(5): 70-76.

International Journal of Chemistry and Pharmaceutical Sciences
ISSN: 2321-3132 | CODEN (USA): IJCPNH
Available online at: http://www.pharmaresearchlibrary.com/ijcps



Method Development and Validation of Gemifloxacin by using Gas Chromatography

K. Padmalatha, Vijaya Durga. D*, Sk. Salma, N. Naga Lakshmi, Ch. Janaki, U. Sony, M. Shireen, K.V.S.S. Sahithi

Department of Pharmacology, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada-521108, India.

ABSTRACT

The aim of present research work to development of simple, rapid and cost-effective method for the estimation Gemifloxacin by using gas chromatography with flame ionization detector (GC-FID).The solutions of standard and the sample were prepared in DMSO and Dichloromethane and Isopropyl were used as residual solvents. GC separation was performed by 30m x 0.53mm ID fused silica coated with 6% cyanopropyl 94% dimethylpolysiloxane (DB 624 of SGE make is suitable).Nitrogen was used as carrier gas at a flow-rate of 4.18 ml/min. After injection of the sample at inlet temperature 1250o c, the temperature of the GC oven was as follows: initial temperature was 40oc, held for 5 min, increased to 125oC at a rate of 8oc min-1 held for 5 min, and finally to 225oc at a rate of 14oc min-1 and held for 10 min. Detector temperature is 250oc. 1.5 µl was injected in split less mode. Calibration curves were linear between the concentration range 2.5-1.5µg ml-1. The method was validated for specificity, linearity, precision, accuracy and limit of quantitation. Also, the method was applied to directly and easily to the analysis of the pharmaceutical preparation of Gemifloxacin tablet.

Keywords: Gemifloxacin, Gas chromatography, DMSO, Pharmaceutical preparation

ARTICLE HISTORY: Received 11 Sept 2019, **Accepted** 29 Nov 2019, **Available Online** 27 January 2020

Citation: Vijaya Durga. D, *et al.* Method Development and Validation of Gemifloxacin by using Gas Chromatography. *International Journal of Chemistry and Pharmaceutical Sciences,* 8(1), 2020: 12-19.

CONTENTS:

Corresponding author
Vijaya Durga. D
Department of Pharmacology,
Vijaya Institute of Pharmaceutical Sciences for Women,
Enikepadu, Vijayawada-521108, India

JOURNAL QR-CODE

1. Introduction

Gemifloxacin is an oral broad-spectrum quinolone antibacterial agent used in the treatment of acute bacterial exacerbation of chronic bronchitis and mild-to-moderate pneumonia. Gemifloxacin acts by inhibiting DNA synthesis through the inhibition of both DNA gyrase and topoisomerase IV, which are essential for bacterial growth. It is used to For the treatment of bacterial infection caused

World Journal of Pharmaceutical and Life Sciences
WJPLS
www.wjpls.org
SJIF Impact Factor: 6.129

PERCIPIENCE OF BIOLOGICAL MECHANISMS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND ITS RISK OF LUNG CANCER

Akhila Yerubandi*, Sivakshari Makkapati, Sreenu Thalla, Padmalatha Kantamneni

Department of Pharmacy Practice, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, Andhra Pradesh, India, 521108.

***Corresponding Author: Akhila Yerubandi**
Department of Pharmacy Practice, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, Andhra Pradesh, India, 521108.

Article Received on 05/01/2020 **Article Revised on 26/01/2020** **Article Accepted on 16/02/2020**

ABSTRACT

Chronic Obstructive Pulmonary Disease (COPD) is defined as the chronic lung disease which is progressive and irreversible obstruction of airway along with the episodes of acute exacerbations. It is a combination of Emphysema and Chronic Bronchitis. Lung cancer has become most leading cause of death in last few years. Squamous cell carcinoma is the COPD related type of cancer, which is most common type of lung cancer. COPD is the major health hazard affecting around 251 million people globally. Biological mechanisms include chronic inflammation, Oxidative stress and DNA damage and repair. Genetic mechanisms include genetic overlap, somatic mutations, DNA methylation, MicroRNA (miRNA) regulation and epigenetics. Formation of lung tumor is due to induction of various interleukins and cyclooxygenase -2. Oxidative stress has major role in lung cancer development. Reactive Oxygen Species (ROS) damages DNA and single strand breaks and sites are increased in COPD and the lung cancer. Somatic mutations may affect both lung cancer and COPD. Hyper methylation of both promoter and tumor suppressor genes occur in lung cancer. miRNA regulates about more than 60% of protein coding genes. DNA methylations and post-translational modifications of histones are observed in these changes. Biological mechanisms identified so far offers a target for development of particular therapeutic strategies that further improve the health of the patients.

KEYWORDS: Chronic Obstructive Pulmonary Disease, Lung cancer, Biological mechanisms, Genetic mechanisms.

INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is defined as the chronic lung disease which is progressive and irreversible obstruction of airway along with the episodes of acute exacerbations. It is a combination of Emphysema and Chronic Bronchitis.[1] Few studies explained that COPD is going to be the third leading cause of death in 2020. COPD has about 25% of the life time risk. The major risk factor of COPD is smoking where 20-25% of smokers develop COPD. If the inflammatory response starts in COPD, it only persists after cessation of smoking.[2] This inflammation may leads to two major manifestations that includes cardiovascular disease (CVD) and lung cancer. Few studies suggest that there is a strong association that inflammatory process of COPD increases the risk of CVD and lung cancer.[3]

Lung cancer has become most leading cause of death in last few years. The major etiological factors of COPD are smoking and occupational exposures such as pollution, biomass exposure, industrial dust and fuels exposure, asbestos and radiation.[4] There were various epidemiological studies conducted in 1950's and 1960's in which association of lung cancer and cigarette smoking were clearly established. Molecular epidemiology mainly focuses on the biological mechanisms that develop the malignancy in lung parenchyma and airways of smokers and the factors that develops lung cancer. COPD which is one of the major cause of morbidity and mortality have more risk of lung cancer.[5] A study explains that patients with moderate to severe COPD have more risk of developing lung cancer five times more than that of cigarette smokers without disease. The major mechanisms that progress various lung diseases such as COPD, Emphysema and Lung disease has gained much attention from past few years. Oxidative and Nitrosative stress results in reactive oxygen and nitrogen species (ROS and RNS) that activates the cellular process results in neoplastic transformation or the mutations in DNA induction which finally favors carcinogenesis.[6]

World Journal of Pharmaceutical and Life Sciences
WJPLS
www.wjpls.org
SJIF Impact Factor: 6.129

A REVIEW ON ASSESSMENT OF QUALITY OF LIFE AND SPECTRUM OF MENTAL DISORDERS IN CANCER PATIENTS

S. K. Jareena*, S. K. Hafeezunnisa, Sreenu Thalla and Padmalatha Kantamneni

Department of Pharmacy Practice, Vijaya Institue of Pharmaceutical Sciences for Women, Enkiepadu, Vijayawada, Andhra Pradesh, India, 521108.

***Corresponding Author: S. K. Jareena**
Department of Pharmacy Practice, Vijaya Institue of Pharmaceutical Sciences for Women, Enkiepadu, Vijayawada, Andhra Pradesh, India, 521108.

Article Received on 20/01/2020 **Article Revised on 10/02/2020** **Article Accepted on 01/03/2020**

ABSTRACT

In cancer patients, there is psychological distress most of the time underdiagnosed. Infertility rates are as high as 90% in men during there reproductive years. Common psychological and emotional responses to cancer develop with its diagnosis, its prognostic uncertainty and fears about death and dying. Indian patients put karma/fate and sheer helplessness on its first diagnosis and its major sources of continuing emotional distress are fear of incurability, disfigurement, recurrence of disease and sense of helplessness over its treatment, pain. Non-utilization of the community-based cervical cancer screening program was due to the absence of symptoms, apprehensions about the screening test, pre-occupation with family problems, practical difficulties and lack of approval from the spouse. Depression and anxiety were common in people who do not have kids. Maybe kids not having itself is a factor for depression or anxiety but having kids also give a sense of social support to the patient and unmarried are with high anxiety levels.

KEYWORDS: Psychological distress, emotional responses, depression, anxiety.

INTRODUCTION

Cancer is the second most common cause of death worldwide.[1] An increase in life expectancy, changes in age structure coupled with lifestyle factors in recent years increased its life expectancy.[2] Psychological distress most of the time have not received proper attention in the cancer patients and is underdiagnosed.[3]

This may influence their quality of life and survival time. In a report Improving palliative care in cancer patients, by National Cancer Policy Board, U.S, it was emphasized that palliative care for these cancer patients should begin at the time of diagnosis with equal importance to psychological, physical, social and spiritual care.[4]

Quality of life (QOL) including emotional and spiritual well-being, social relationships and functional ability are negatively influenced because of uncontrolled symptoms. A critical component in improving QOL is aggressive management of physical symptoms.[5]

Epidemiology

The incidence of cancer is increasing rapidly. In 2012, an estimated 14.1 million new cases of cancer occurred worldwide and there was a 2-3 fold increase in countries with a low and medium level of Human Development Index. The occurrence of cancer varies according to gender. World literature reports of 205 new cancer cases for every 1,00,000 men and 165 for every 1,00,000 females whereas a report from India mentions 5,89,800 and 6,03,500 new cancer cases among males and females respectively.

The incidence of cancer cases in India is expected to increase from 0.589-0.934 million among males and 0.603-0.935 million among females by the year 2026. Nearly 40%-80% of females are prone to infertility as a result of their cancer treatment in the form of chemotherapy, radiation, and surgery. Infertility rates are as high as 90% among men and men with cancer during their reproductive years.[6]

METHODOLOGY

In study 1 - group pre-test-post test-pre experimental design was employed. It was approved by the Institutional Ethics Committee. Thirty cancer patients (19 men, 11 women) under 3 cancer types- head and neck, breast and lung cancers (10 in each type) were selected through purposive sampling from different cancer hospitals. Stress in Cancer Patients- Revised Version (QSC-R23) was used to measure stress and European Organisation for the Cancer QOL Questionnaire, Version 30 was used to measure health-

Santhi Krupa D et al /J. Pharm. Sci. & Res. Vol. 12(7), 2020, 914-919

ISSN:0975-1459
Journal of Pharmaceutical Sciences and Research
www.jpsr.pharmainfo.in

Antialzheimer's Potential of *Abrus pectoris* hydro alcoholic root extract

Santhi Krupa D, Ch Lochana, K. Padmalatha

Vijaya Institute of Pharmaceutical Sciences For Women, Enikepadu, Vijayawada.

Abstract

Aim-The present study aims at the extraction of the flavonoid content from the dried root of *Abrus pectoris* using hydroalcoholic mixture and determining the anti-alzheimer's activity and antioxidant potential of the *Abrus pectoris* root extract (APRE).

Methods-Evaluation of anti-alzheimer activity of *Abrus precatorius root* extract using *D-Galactose* model.

Determination of Behavioural pattern of experimental animals during the study period.

Estimation of Acetyl cholinesterase (AChE) levels and Acetylcholine (Ach) levels.

Estimation of antioxidant parameters like Lipid peroxidation, Superoxide Dismutase, Catalase, and Glutathione reductase.

Results-Simultaneous treatment of D-Galactose and *APRE*, in the protective groups III & IV had shown a significant increase in total body weight. Decreased transfer latency in the elevated plus maze, morris water maze by the APRE treatment groups may be because of memory enhancement. A significant increase in ACh levels, decrease in the AchE level was observed in protective groups III & IV. After APRE supplementation for 90 days a significant decrease ($0.46 \pm 0.018^{***}$) in LPO level as well as a significant increase in SOD, CAT and GSH levels has been observed which indicate the antioxidant status of APRE. So, based on the above results, APRE can be used in the treatment of alzheimer's disease.

Key words: treatment, transfer latency, memory, antioxidant, alzheimer's

1. Introduction

Alzheimer disease (AD) is characterized by a progressive decline in cognitive function. AD shows more impact on the people aged 65 years or more, with a progressive decline in memory, thinking, language and learning capacity.

Alzheimer's disease, a progressive neurodegenerative disorder majorly characterised by memory impairment, cognitive dysfunction, behavior disturbances and deficits in activities of daily living. As stated by the Alzheimer's Association, in India, the prevalence of Alzheimer's disease is about 4 millions, and all over the world it is 44 millions. Generally, the drugs used in the Alzheimer's like donepazil will alter the hemoprofile, and also affects the rhythm of the heart. Usually, the elder persons will have decreased age based functioning of the heart. So, the prolonged use of this antialzheimer medications in turn increases the cardiovascular complications which in turn may worse the cardiovascular functions in the body[1,2]. To prevent the unwanted effects of the antialzheimer's drugs, as the medicinal plants have been traditionally used in the treatment of several human disease, plants with the antioxidants can be a great source to treat various degenerative diseases apart from the plant cholines also favour the synthsesis of Ach in brain thereby improves the cognitive and memory functions of the brain[4,5].

Abrus Precatorius commonly known as Rosary Pea, Gunja and Jequirity peas,consists of choline and other biological constituents having therapeutic potential. Various parts of *A. precatorius* are having different pharmacological activities like anti-diabetic, neuroprotective, anti-viral, neuromuscular, and anti-convulsant activities etc[6,7].

In view of that, from the *Abrus precatorius* plant having many pharmacological actions, the root part was selected, planned and aimed to evaluate the anti-alzheimer activity, using the *in-vivo* experimental methods.

2. Materials And Methods:

2.1 Extraction methodology

The dried root powder of *Abrus Pectoris* was collected from government Ayurveda college, Vijayawada. *Abrus precatorius* root powder was extracted with hydroalcohol (30:70) at a temperature not exceeding 60° C. The obtained *Abrus precatorius* root extract (APRE) was concentrated with the help of an evaporator to yield a crude semi-solid mass. The resultant semi-solid extract was dried, weighed, labelled and stored in a dessicator.

2.2 Phytochemical analysis

2.2.1 Qualitative phytochemical analysis

Qualitative chemical tests were carried out for hydroalcoholic extract of *abrus pectoris* root (APRE), to identify different phyto-constituents. Tests for alkaloids, flavonoids, saponins, steroids, tannins and triterpenes are performed.

2.3 Evaluation of antialzheimer's activity

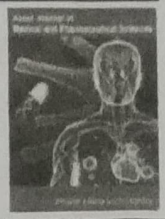
2.3.1 Drugs and chemicals

Drugs and Chemicals used in this study were of analytical grade and of highest purity. It include D-Galactose, Acetylcholine iodide, Di Thiobismitrobezoic Acid (DTNB), hydroxylamine hydrochloride, Ferric chloride, EDTA

2.3.2 Animals

Healthy adult albino wistar rats weighing 200-250grams of either sex were selected for the study. Animals were housed in individual cages under standard laboratory conditions and fed with standard pellet diet and water ad libitum. They were fasted overnight before the day of experiment. Animals were housed within the departmental animal house and the room temperature was maintained at 27°C.

Asian Journal of Medical and Pharmaceutical Sciences
ISSN: 2348-0165
Journal Home Page: www.pharmaresearchlibrary.com/ajmps



A Review on MUSA

Atluri Bhavana*, U. Mounika Sarojini, S. Joshnavi, I. Pavani, K. Mrudula, G. Loka Swarna Deepika, Y. Krishna Sukanya, K. Padmalatha

Department of Pharmacology, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada-521108, India.

ABSTRACT

Banana is commonly a fruit but technically, a berry. The genus Musa of herbaceous plants produces this universally consumed fruit. It is suitable for consumption by people of any age group and so, is one of the world's most important food producers. Banana offer great medical benefits. This is partly because bananas aid in the body's retention of calcium, nitrogen and phosphorus, all of which work to build healthy and regenerated tissues. It has a rare combination of energy value, tissue-building elements, protein, vitamins and minerals. It is a good source of calories since it is rich in solids and low in water content as compared to any other fresh fruit. Banana is one of the most important gigantic and oldest cultivated fruit crops grown almost everywhere in India. Presently, the banana pseudostem is hazardous waste in India while it has been used in several countries to develop important bio-products such as fibre to make yarn, fabric, apparel as well as fertilizer, fish feed, bio-chemicals, paper, handicrafts, pickles, candy, etc. Looking at this perspective, entrepreneurs of India should take this golden opportunity and do the needful for such kind of business. The land of our country is suitable for banana production. Its fruit is a healthy diet and demandable in local markets as well as the free waste could be utilized to produce such bio-products which will contribute directly in our national economy. Thus, farmers or entrepreneurs should cultivate more banana trees in unproductive lands of coastal and hilly areas for extra income from the useless wastes and ensure eco-friendly environment. Women can also be employed in production of different bio-products from banana wastes and thus, they can contribute to their livelihood improvement. In conclusion, this review on Musa possess various phytochemicals and it is having important pharmacological activity which can help in improving various health problems and waste utilization will be of help to the farmers, entrepreneurs, planners, scientists as well.

Keywords: Musa, Phytochemical, Uses, Pseudostem, bio-products, employment, eco-friendly, health care

ARTICLE INFO

ARTICLE HISTORY: Received 19 Oct 2019, **Accepted** 29 Nov 2019, **Available Online** 19 June 2020

Citation: Atluri Bhavana, *et al.* A Review on MUSA. *A. J. Med. Pharm, Sci.*, 8(1), 2020: 43-47.

CONTENTS:

**Corresponding author*
Atluri Bhavana
Department of Pharmacology,
Vijaya Institute of Pharmaceutical Sciences for Women,
Enikepadu, Vijayawada-521108, India.

ejpmr, 2020, 7(4), 267-270

SJIF Impact Factor 6.222

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Review Article

ISSN 2394-3211

EJPMR

PREVELENCE OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND ITS COMORBIDITIES – A REVIEW

Sivakshari Makkapati*, Akhila Yerubandi, Sreenu Thalla and Padmalatha Kantamneni

Department of Pharmacy Practice, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, Andhra Pradesh, India, 521108.

***Corresponding Author: Sivakshari Makkapati**
Department of Pharmacy Practice, Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, Andhra Pradesh, India, 521108.

Article Received on 23/01/2020 **Article Revised on 13/02/2020** **Article Accepted on 04/03/2020**

ABSTRACT

Chronic obstructive pulmonary disease [COPD] is a common, complex, heterogeneous condition in which it is responsible for growing morbidity and mortality. The study describes about the prevalence of COPD and its comorbidities in two different studies. Study 1, the prevalence of different comorbidities in COPD patients by gender and GOLD stage. This study was a non-interventional, cross-sectional investigation. Study 2, Prevalence of chronic obstructive pulmonary disease and pattern of comorbidities in a general population. This is an epidemiological cross-sectional study. The total number of patients involved in study 1 was 1,216. Males were 880 members and females were 336 members. The comorbidities mentioned were Cardiovascular, respiratory, Metabolic, Oncologic, Neuropsychiatric, Gastroenterology, Osteo – Articular and other diseases. The overall percentage of comorbidities found was 3,198 and the male percentage was 2,182 and the female percentage was 1,016. In study 2, the total population examined in this study was 7,731,628 who are NHS users. Out of which the 3,535,371 were about 45 years old and above. In that 462,894 were using respiratory agents. The number of male patients was 1,603,364 and the percentage is about 45% of ≥45 years of age and the number of patients exposed to ≥ 1 respiratory drug was 205,711 and the percentage was about 44%. The number of female patients was 1,932,007 and the percentage is about 55% of ≥45 years of age and the number of patients exposed to ≥1 respiratory drug was 257,183 and the percentage was about 56%.

KEYWORDS: COPD, patients, prevalence, comorbidities, percentage.

INTRODUCTION

Chronic obstructive pulmonary disease [COPD] is a common, complex, heterogeneous condition in which it is responsible for growing morbidity and mortality.[1] Global obstructive pulmonary disease [GOLD] therapeutic strategies in early versions can be used to assess the disease severity and to follow therapeutic decisions as a function of the degree in airflow limitation. The terms such as "precision", "personalized" and "individualized" are mostly used by the clinicians and investigators. Precision medicine is widely used for assessing genetic, biomarker, phenotypic, psychosocial characters to identify differences between the patients with similar diagnosis by this information it will help the providers to anticipate the disease course and patient response to estimate the efficacy inpatient therapy and finding errors ineffective therapy.[2] In previous years, the GOLD therapy strategy limited the use of spirometry alone to evaluate the severity of the disease and to follow therapy. COPD can significantly affect the other organ's functions such as heart, liver, kidney, vasculature, brain, etc. The limitation of the airflow that indicates COPD is due to the combination of diseases in small airways like obstructive bronchiolitis, parenchymal destruction like Emphysema. The risk of COPD patients having HIV has been increasing in contemporary.[1] The awareness of the use of antiretroviral drugs in combination helps to improve the condition. One of the primary risk factors of COPD is tobacco consumption. COPD can also cause disturbances in activities of daily living, social, psychological functioning and recreational activities. 7 – 42% of COPD patients with a comorbidity of depression have been found and were four-time more frequent when compared to non - COPD patients. According to the estimation of WHO this condition will be the third most major cause for death by 2020 the followed by coronary and cardiovascular diseases.[2]

MATERIALS AND METHODS

In Study 1, the prevalence of different co-morbidities in COPD patients by gender and GOLD stage. This study was a non-interventional, cross-sectional investigation done on a centralized database of the lung unit and was done a period of about May 2012 – April 2015, the patients were automatically and anonymously selected. The data collected in the subject were as follows: age, gender, BMI (Body Mass Index), Charlson comorbidity Index (CCI), FEV_1 (Forced Expiratory Volume in one

EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 6
Issue: 7
259-262
Year: 2019

ANTI HYPERLIPIDEMIC ACTIVITY OF MACROTYLOMA UNIFLORUM LINN

Srinivas Vandavasi[1]* and Grandhi Surendra[2]

[1]Research scholar Acharya Nagarjuna University, Nagarjuna Nagar, Guntur, Andhra Pradesh, India.
[2]Department of Pharmaceutical chemistry, Vijaya Institute of pharmaceutical sciences, Vijayawada, Andhra Pradesh, India.

***Corresponding Author: Srinivas Vandavasi**
Research scholar Acharya Nagarjuna University, Nagarjuna Nagar, Guntur, Andhra Pradesh, India.

Article Received on 10/05/2019 **Article Revised on 01/06/2019** **Article Accepted on 21/06/2019**

ABSTRACT
Hyperlipidemic is the one of the risk factor responsible for atherosclerosis, and cardiovascular diseases.The aim of present work is to screen the antihyperlipidemic activity of Macrotyloma uniflorum Linn leaves extract in cholesterol diet induced hyperlipidemic rats. Wister albino rats were divided into 5 groups and were treated with (control) normal rats without cholesterol diet, (toxic control) cholesterol diet only, (standard)cholesterol diet + Atrovastatin (10mg/kg) b.w . (Test group-1) pet ether extract treated group+ cholesterol diet (Test group-2) chloroform extract +cholesterol diet, (Test group-3) ethanol extract + cholesterol diet . Respectively for 20 days. Data expressed as mean ± S.E.M and analyzed statistically using ANOVA followed by Dunnet's 'T' test and compare with respective control group. Chloroform extract treated group at a dose of 100mg/kg b.w has reduced significantly Total cholesterol, Triglycerides, Low density lipoprotein , Very low density lipoprotein and consecutively increased the level of High density lipoproteins . Ethanolic extract group has shown moderate significant action, whereas petroleum ether extract group has shown very low significant action. It can be conclude that the constituents like alkaloids, flavonoids which are present in chloroform extract of Macrotyloma uniflorum may be responsible for the activity.

KEYWORDS: High density cholesterol level, Low density cholesterol level, Very low density cholesterol level, Macrotyloma uniflorum Linn.

INTRODUCTION
For centuries, the plant kingdom has been one of the largest areas from which novel medicines are derived. The constituents of plants often have medicinal and research value, such as for treating diseases[1] and understanding basic natural science. Many recent studies have focused on plant extracts in order to find new chemicals that could be beneficial to mankind.[2] Macrotyloma uniflorum is popularly known as Horse gram belongs to the family Fabaceae, Traditionally, it has been widely used in the treatment of kidney stones, inflamed joints, fever, sinus wounds and localized abdominal tumors[3] Muthu et al., 2006]. Experimentally, the seeds are reported as hepatoprotective, diuretic and antioxidant. In spite of the reporting of these positive benefits of the plant, most of the *Macrotyloma uniflorum* research studies are of small scale in nature. So, more and better trial data are needed to define the clinical effectiveness of this popular herbal remedy more precisely.

Hyperlipidemia is well known disorder to play a major role in the development of atherosclerosis, and is widely recognized as a risk factor for cardiovascular diseases (CVD) and Myocardial infarction, which is a common cause of mortality and morbidity.[5] Chronic elevation of blood lipids may also lead to the development of fatty liver and renal damage[6], as indicated by the increased concentrations of liver and kidney enzymes. Accumulation of lipids impairs endothelial dysfunction, which can initiate vasoregulation, platelet and monocyte adhesion, vascular smooth muscle cell growth and oxidization of low-density lipoprotein (LDL)[7] Although several factors such as life style, a diet rich in cholesterol, age, and hypertension, have been reported to cause heart failure,[8] hypercholesterolemia due high levels of cholesterol, particularly LDL cholesterol (LDL-c) , very low density cholesterol (VLDL-c) and due to decrease in the level of High density lipoprotein (HDL-c),[9] is mainly responsible for CVD. Hence, decreasing the prevalence of hyperlipidemic conditions is considered to be an important therapeutic approach.[10] Accordingly, efforts have been made to identify the anticholesterol effects of various medicinal plants.[11] In the present study cholesterol diet which is a present in all common ingredients in our daily food. Cholesterol feeding has been often used to elevate serum or tissue cholesterol levels to assess the hypercholesterolemia-