MALLIGE COLLEGE OF PHARMACY

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Number of research papers published per teacher in the Journals no5fied on UGC website during the last five years

Academic Year	No. of Research Papers
2022	17
2021	10
2020	15
2019	04
2018	04
2017	01

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Bangalore-560 090

3.3.1 Number of research papers published per teacher in the Journals notified on UGC website during the last five years

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier		
						Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
UPLC-QTOF MS Method development and vaidation for simultaneous analysis of dipyridamole and related impurities	Menaka.T,Ramya kuber	Pharmaceutical chemisrty	Journal of applied pharmaceutical sciences	2022	2231-3354	https://japsonline.com/	https://japsonline.com/admin/php/uploads/3691_pdf.pdf	(scopus indexed)
Prescribing Patterns of Antihypertensive Drugs in Tertiary Care Hospital	Sagar Das, Dr. Shailesh Yadav	pharmacy practice	IOSR Journal Of Pharmacy And Biological Sciences (IOSR-JPBS)	2022	2278-3008	https://www.iosrjournals.org/iosr-jpbs.html	https://iosrjournals.org/iosr-jpbs/papers/Vol17-issue2/Ser-1/E1702013038.pdf	google scholar, research gate, semantic schlar scilit, indian citation index, science gate, 'cross ref
A Study on Prescribing Pattern of the Drugs in Chronic Kidney Disease; a Tertiary Care Hospital	Abiah Merin Andrews ,Sarath Babu, Jeethu Elsa Varghese, Muhammed Adnan, Dr. Shailesh Yadav5	pharmacy practice	International Journal of Pharmaceutical Research and Applications	2022	2456-4494	www.ijprajournal.com	https://www.ijprajournal.com/current-issue.php?issueid=40&title=A%20Study%20on%20Prescribing%20Pattern%20of%20the%20Drugs%20in%20Chronic%20Kidney%20Disease%20,%20a%20Tertiary%20Care%20Hospital	google scholar, electronic journal library
FORMULATION AND EVALUATION OF HERBAL SHAMPOO	MAMATHA MK, GAYANA PM, BHOOMIKA NJOSHI, KAVANA, LAKSHMI, ANUSHA	Pharmacognosy	INTERNATIONAL JOURNAL OF PHARMACEUTICAL RESEARCH AND APPLICATIONS	2022	2231-3354	https://japsonline.com/	https://ijprajournal.com/issue_dcp/Formulation%20and%20Evaluation%20of%20Herbal%20Shampoo.pdf	Scopus [Q2], Chemical Abstracts, CAB abstracts, Hinari, Global Health, EBSCO Publishing's Electronic Databases, Summon by serial solutions, Abstracts on Hygiene and Communicable Diseases, Proquest, Tropical Diseases Bulletin, Open j-Gate, Google Scholar, Science Central, Ulrich's Periodicals Directory, Scimago Journal Ranking, AYUSH Research Portal, Geneva Foundation for Medical Education and Research, ABC Chemistry, Biblioteca, Necker, Academic Journals Database, Index Copernicus, InfoTrac Custom & Academic OneFile (Gale), Index Medicus for South-East Asia Region (IMSEAR), CNKI scholar, Scilit.
AN OVERVIEW ON ANTIACNE ACTIVITY OF MEDICINAL PLANTS	Mamatha MK, Lakshmi G, Hitesh Aradhya, Suma US, Sharanya MG.	Pharmacognosy	World Journal of Pharmaceutical and Life Sciences	2022	2454-2229	www.wjpls.org	file:///C:/Users/LENOVO/Downloads/article_1669721171.pdf	Google Scholar, Index Copernicus, Indian Science Publications, SOCOLAR, China, Cosmos Impact Factor, Research Bible, Fuchu, Tokyo. JAPAN Scientific Indexing Services (SIS), Jour Informatics (Under Process), UDLedge Science Citation Index. Global Impact Factor (In Process), International Impact Factor Services, International Scientific Indexing, UAE, International Society for Research Activity (ISRA) Journal Impact Factor (JIF), Science Library Index, Dubai, United Arab Emirates, International Innovative Journal Impact Factor (IIJIF), Scientific Journal Impact Factor (SJIF), Eurasian Scientific Journal Index (ESJI), Indian citation Index (ICI), IFSIJ Measure of Journal Quality,
A study on prescribing patterns of the drug in cardiovascular disease attending a tertiary care hospital	S. Pramoth Kumar,NirajPandey, Vishal kumar ,Dr Shaileshyadav	Pharmacy pratice	International Journal of Pharmaceutical Research and Applications	2022	2456-4494	https://www.ijprajournal.com/	https://ijprajournal.com/issue_dcp/A%20study%20on%20prescribing%20patterns%20of%20the%20drug%20in%20cardiovascular%20disease%20attending%20a%20tertiary%20care%20hospital.pdf	google scholar, electronic journal library
Formulation and Evaluation of Fexofenadine Hydrochloride Fast Disintegrating Sublingual Tablets for Improving Bioavailability	Ajay Koushik MS, Sheeba F R, Karthik KH, Keerthy H.S	pharmaceutics	International Journal of Pharmaceutical Research and Applications	2022	2456-4494	https://www.ijprajournal.com/	https://ijprajournal.com/issue_dcp/Formulation%20and%20Evaluation%20of%20Fexofenadine%20Hydrochloride%20Fast%20Disintegrating%20Sublingual%20Tablets%20for%20Improving%20Bioavailability.pdf	google scholar, electronic journal library
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Formulation and Evaluation of Floating Beads of Nizatidine	Yeshavantha Kumar, F R Sheeba, Likitha B, Dr. Shivanand Mutta, H S Keerthy, Dr. Ashvini HM	PHARMACEUTICS	International Journal of Pharmaceutical Research and Applications	2022	2456-4494	https://www.ijprajournal.com/	https://ijprajournal.com/issue_dcp/Formulation%20and%20Evaluation%20of%20Floating%20Beads%20of%20Nizatidine.pdf	google scholar, electronic journal library

Formulation and Evaluation of Sustained Release Matrix Tablet of Nitrofurantoin	Mandev Mehta, Malay Paul, Keerthy H S, Shivanand K Mutta, Mukesh Sharma, Jafar Ikbal Abedin	PHARMACEUTICS	International Journal of Pharmaceutical Research and Applications	2022	2456-4494	https://ijprajournal.com/	https://ijprajournal.com/issue_dcp/Formulation%20and%20Evaluation%20of%20Sustainedrelease%20Matrix%20Tablet%20of%20Nitrofurantoin.pdf	google scholar, electronic journal library
Formulation And Evaluation Of Fast Dissolving Tablet Of Cyclodextrin Inclusion Complxed Water Insoluble Drug: Aceclofenac	A Bhargav, F.R Sheeba, B.V Vinutha, Dr. Shivanand K. Mutta, H.S. Keerthy	PHARMACEUTICS	European Journal Of Biomedical And Pharmaceutical Sciences	2022	2349-8870	https://www.ejbps.com/ejbps/index	https://www.ejbps.com/ejbps/abstract_id/9109	Google Scholar, Index Copernicus,Indian Science Publications, SOCOLAR, China, Urlich's Periodicals Directory, Proquest, UK (In Process), Research Bible, Fuchu, Tokyo. JAPAN, International Society for Research activity (ISRA),Scientific Indexing Services (SIS),UDLedge Science Citation Index
Formulation And In-Vitro Evaluation of Bilayer Tablet of Sumatriptan Succinate	Yadav Deepak Rajpati, Mukesh Sharma,Keerthy H.S, Dr. Shivanand Mutta, F R Sheeba, Malay Paul	PHARMACEUTICS	International Journal of Pharmaceutical Research and Applications	2022	2456-4494	https://ijprajournal.com/	https://ijprajournal.com/issue_dcp/Formulation%20and%20In%20Vitro%20Evaluation%20of%20Bilayer%20Tablet%20of%20Sumatriptan%20Succinate.pdf	google scholar, electronic journal library
Formulation and Evaluation of Ciprofloxacin Microspheres for Targeted Drug Delivery"	Apoorva M.P, Dr. Shivanand K Mutta, Dr. Ashvini H M, Prof. Keerthy H.S, Sheeba F.R	PHARMACEUTICS	International Journal of Pharmaceutical Research and Applications	2022	2456-4494	www.ijprajournal.com I	https://ijprajournal.com/issue_dcp/Formulation%20and%20Evaluation%20of%20Ciprofloxacin%20Microspheres%20for%20Targeted%20Drug%20Delivery.pdf	google scholar, electronic journal library
Formulation and Evaluation of Ibuprofen Microsponges for Topical Drug Delivery	Prasanna N*, Dr. Shivanand K Mutta, Dr. Ashvini H M, H S Keerthy, F R Sheeba	PHARMACEUTICS	International Journal of Pharmaceutical Research and Applications	2022	2456-4494	www.ijprajournal.com I	https://ijprajournal.com/issue_dcp/Formulation%20and%20Evaluation%20of%20Ibuprofen%20Microsponges%20for%20Topical%20Drug%20Delivery.pdf	google scholar, electronic journal library
A Study on Prescribing Patterns of Antihypertensive Drugs in a Tertiary Care Hospital	SarathPNamboodry,ThamburuS,FarhanK,Sharath K N,Dr.Manikanta B D	PHARMACEUTICS	International Journal of Pharmaceutical Research and Applications	2022	2456 - 4494	www.ijprajournal.com	https://ijprajournal.com/issue_dcp/A%20Study%20on%20Prescribing%20Patterns%20of%20Antihypertensive%20Drugs%20in%20a%20Tertiary%20Care%20Hospital.pdf	google scholar, electronic journal library
Use Of Rp-Hplc For The Analytical Method Development Of Anti-Tubercular Drug-Bedaquiline	Sayani Bhattacharyya , Arti Mohan , Rajendra Sandur V	PHARMACEUTICS	Journal of Pharmaceutical Negative Results	2022		https://www.pnrjournal.com/index.php/home/about	https://www.pnrjournal.com/index.php/home/article/view/1934	Emerging Sources Citation Index, Index Copernicus, Scimago Journal Ranking, SCOPUS, Web of Science, SCOPUS,Scimago Journal Ranking,Index Copernicus,Emerging Sources Citation Index, Index Copernicus,
Formulation and evaluation of Sustained release tablet of Dicyclomine hydrochloride	Mukesh Sharma*, Keerthy H.S, Dr. Shivanand K Mutta, F R Sheeba, Dr. Ashvini Herimatha, Pradeep Kumar Patel	PHARMACEUTICS	International Journal of Advance Research and Innovative Ideas in Education	2022	2395-4396	http://ijariie.com/	http://ijariie.com/FormDetails.aspx?MenuScriptId=21703 2	Google scholar, aceademia.com. iseek study mode, scientific indexing service, journal index.net, prism share

Journal of Applied Pharmaceutical Science Vol. 13(01), pp 201-211, January, 2023
Available online at http://www.japsonline.com
DOI: 10.7324/JAPS.2023.130120
ISSN 2231-3354

UPLC-Q-TOF-MS method development and validation for simultaneous analysis of dipyridamole and its related impurities

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ARTICLE INFO

Received on: 08/08/2022
Accepted on: 10/11/2022
Available Online: 04/01/2023

Key words:
UPLC-Q-TOF, dipyridamole, impurities, validation resolution, USFDA.

ABSTRACT

A sensitive, specific, precise, and cost-effective ultra-performance liquid chromatography to quadrupole time-of-flight mass spectrometry technique for analyzing dipyridamole and its associated impurities was developed and validated. A high-strength silica T3 column (100 × 3 mm, 3.5 µ) was used as a stationary phase for chromatographic separation, and a mobile phase of 1% acetic acid in water (A) and acetonitrile (B) was delivered in gradient with a flow rate of 0.6 ml/minute for sample injected at 5 µl volume with diode array detection at 200–400 nm. Analytes were ionized for mass spectrometric detection, utilizing a positive-polarity ESCi source with a Q-TOF-MS analytical range of 50–1,500 m/z. The developed method was validated in accordance with the United States Food and Drug Administration (USFDA's) analytical method validation requirements and was proven to be successful in resolving dipyridamole.

INTRODUCTION

Dipyridamole is an accessory to oral anticoagulation for thromboembolism prophylaxis associated with prosthetic heart valves. It was intended to treat blood clot formation by reducing platelets and endothelial adenosine uptake, which reduces the stimulation of both platelet activating and collagen factors by promoting cyclic adenosine monophosphate (cAMP) accretion (Bult et al., 1991). It is chemically named as 2-[2-[bis(2-hydroxy-ethyl)amino]-4,8-di(piperidin-1yl)pyrimido[5,4-d]pyrimidin-6yl]-(2-hydroxy-ethyl) amino ethanol and the chemical structure of dipyridamole (Yogesh et al., 2012) is shown in Figure 1. The analytical methods reported include high-performance liquid chromatography (HPLC) analysis of dipyridamole (Bridle et al.,1993; Fontani et al., 1983; Hassan et al., 2008; Rao et al., 2016); reverse-phase high-performance liquid chromatography (RP-HPLC) stability, indicating the method for dipyridamole and its impurities (Acharya et al., 2015; Vaghela et sal., 2012); method development and validation for dipyridamole and aspirin by HPLC (Zhang et al., 1997); HPLC methods to identify dipyridamole in human plasma (Barberi et al., 2006); and stability-indicating RP-UPLC in combined capsule formulation (Rajput et al., 2011), revealing the simultaneous determination of dipyridamole and aspirin. Only HPLC methods were reported to determine dipyridamole and there is no UPLC-Q-TOF-MS (ultra-performance liquid chromatography to quadrupole time-of-flight mass spectrometry) analytical approach for the identification of impurities in dipyridamole literature sources. Advanced techniques are needed to recognize and interpret these impurities, when the impurities standards are not available. Therefore, attempts have been made to determine the trace level of Genotoxic impurities (GTIs) accurately; as a result, UPLC-Q-TOF-MS methodology has been developed as a useful approach. The related substance UPLC-MS method has been developed by using volatile MS compatible buffer media which separates and determines the listed impurities (Fig. 1) with 30 minutes runtime. The elution time and resolution were achieved by using the C18 stationary phase column 100 × 3 mm, 3.1 µ, and 1.8 µm. The high-strength silica (HSS) particle is the first and only 100% silica particle designed, tested,

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IOSR Journal Of Pharmacy And Biological Sciences (IOSR-JPBS)
e-ISSN:2278-3008, p-ISSN:2319-7676. Volume 17, Issue 2 Ser. I (Mar. –Apr. 2022), PP 30-38
www.Iosrjournals.Org

Prescribing Patterns of Antihypertensive Drugs in Tertiary Care Hospital

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Abstract :

Background: *Hypertension is globally considered to be the greatest mortality risk factor for both men and women and is regarded as a modifiable risk factor of the non-communicable diseases (NCDs) of lifestyle. The goal of the present study was to describe the antihypertensive medication prescribing patterns for inpatients with hypertension at a University teaching hospital in order to better understand the patterns of care for inpatients and*

Objectives: *Primary objective: To evaluate the Prescribing Pattern in Hypertension. potential opportunities for improvement in hypertension management. Secondary objective: To find the Association of Hypertension with Type 2 DM. To Associate the Age with Hypertension.*

Methodology: *This study was conducted at Mallige hospital. Mallige hospital is a multispecialty tertiary care hospital with over 126 beds conveniently located in the Bengaluru, Karnataka state of India. Mallige hospital consist of inpatient department with consist of General ward, Male ward , Female ward , Intensive care unit , Surgical ward, etc. The study involves both Prospective and Retrospective Observational Study. Study was conducted for 6 months in which data collection period for 3 months. Inclusion criteria: Patient having the age of 18 years and above. Patient known to be on antihypertensive medication one or more. Exclusion criteria: Patient not willing to sign the consent form. Patient data not available completely. Pregnant and lactating women. The study was conducted by randomly collecting the prescriptions containing antihypertensive drugs of patients who are visiting the department. Prescriptions containing antihypertensive drugs were evaluated for the category of antihypertensive prescribed and indication for use.*

Results: *A total number of 110 patients were enrolled in the study of which 68 (61.81%) were male patients and 42 (38.18%) were female patients. The incidence of hypertension was more common in male compared to female. The maximum percentage of male and females with hypertension was found at the age group of 61-80 years (51.81%). This result showed most of the patients were diagnosed with pre-hypertension 58 (52.72%), stage 1 hypertension 24 (21.81%) and stage 2 hypertension 18 (16.36%). Various co-morbid conditions like diabetes mellitus, cardiovascular disease, Arthritis, dyslipidemia was seen among patients and many of these were found to be risk factors of Hypertension. Diabetes mellitus (34.54%) and cardiovascular disease (17.27%) were the two most common co-morbid conditions found in most of the patients which increase the risk of Hypertension. The family history of the patients revealed that majority of the patients (74.54%) does have family history of hypertension, followed by (25.45%) in whom there was no family history of Hypertension. In the study of 110 hypertension patients I observed that Amlodipine utilization was high as monotherapy (25.5%). Telmisartan + Hydrochlorothiazide was used most widely (19.46%) as a combination therapy. Total number of drugs prescribed were 512. Average number of drugs per prescription were 4.65. Number of appropriate prescriptions were 102 (92.72%) and Number of inappropriate prescriptions were 8 (7.27%).*

Conclusion: *The present study represents the current prescribing trend for antihypertensive agents. It implies that in hypertensive patients using the monotherapy is more common than combination therapy. Each of the antihypertensive therapy classes is roughly equally effective in lowering the blood pressure, producing a good antihypertensive response in 30 to 50 percent of patients. There is, however, wide interpatient variability as many patients will respond well to one drug but not to another. In developing countries like India, more systematic studies are required on the evaluation of prescribing patterns and guideline based antihypertensive medications' use, which can be tailored to suit the patients' requirements.*

Keywords: *hypertensive, anti-hypertensive, HTN, Monotherapy; Prescribing Pattern.*

Date of Submission: 02-03-2022 Date of Acceptance: 12-03-2022

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 5 Sep-Oct 2022, pp: 278-285 www.ijprajournal.com ISSN: 2456-4494

A Study on Prescribing Pattern of the Drugs in Chronic Kidney Disease; a Tertiary Care Hospital

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Submitted: 07-09-2022 Accepted: 17-09-2022

ABSTRACT

Chronic kidney disease (CKD), characterized by progressive decline in glomerular filtration rate (GFR), is a major public health issue worldwide and is associated with high morbidity and mortality. India, with its huge diabetic and hypertensive population, is becoming a major reservoir of CKD. The therapy of CKD andendstagerenal disease(ESRD) is very expensive and out of reach of more than 90% of patients in India. Appropriate drug selection for patients with CKD is important to avoid unwanted drug effects and to ensure optimal patient outcomes.

KEYWORDS: Chronic kidney disease; creatinine; comorbidities; medication; prescribing patterns.

I. INTRODUCTION

[1]Kidney is the major organ for maintaining homeostasis of fluid and electrolytes and in particular, plays an important role in the disposition of many drugs. Chronickidney disease affects renal drug elimination and other pharmacokinetic processes involved in drug disposition (e.g., absorption, drug distribution, non-renal clearance [metabolism]). About half of all drugs or their metabolites are excreted by the kidneys, and 30% of all adverse effects of medication have a renal cause or a renaleffect.

KDIGO guidelinesfocus on topicsrelatedto the preventionor management of individuals with kidney diseases. Criteriaused by KDIGO for topic prioritization include the burden of illness based on prevalence and scope of the condition or clinical problem; amenability of a particular condition to prevention or treatment and expected impact; existence of a body of evidence of sufficient breadth and depth to enable the development of evidence-based guidelines; potential of guidelines to reduce variationsin practices, improve health outcomes, or lower treatmentcosts.

The Kidney Disease: Improving Global Outcomes (KDIGO) 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease (CKD) serves to update the 2002 KDOQI Clinical Practice Guidelines for Chronic Kidney Disease: Evaluation, Classification, and Stratification following a decade of focused research and clinical practice in CKD. The document aims to provide state-of-the-art guidance on the evaluation, managementandtreatmentforallpatientswithCKD.Specifically,theguideline retainsthedefinitionofCKDbutpresentsanenhancedclassificationframework for CKD; elaborates on the identification and prognosis of CKD; discusses the management of progression and complications of CKD; and expands on the continuum of CKD care: timing of specialist referral, ongoing management of peoplewithprogressive CKD,timing of the initiation of dialysis,and finally the implementation of a treatment program which includes comprehensive conservative management. The development of the guideline followed an explicit process of evidence review and appraisal.

According to kidney disease improving global outcomes guidelines (KDIGO), chronickidneydiseaseisdefinedasabnormalitiesofkidneystructureorfunction, present for greater than 3 months with implications for health. CKD is classified based on cause, GFR category (G1-G5), albuminuria category (A1-A3) abbreviated asCGA.

Based on GFR, the KDIGO classifies chronic kidney disease as G1 (normal or high >90 ml/min/1.73 m^2), G2 (mildly decreased 60-89 ml/min/1.73 m^2), G3a (mildly to moderately decreased 45-59 ml/min/1.73 m^2), G3b (moderately to severely decreased 30-44 ml/min/1.73 m^2), G4 (severely decreased 15-29 ml/min/1.73 m^2), G5 (kidney failure < 15 ml/min/1.73 m^2).Based on albuminuria, KDIGO classifies chronic kidney

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 5 Sep-Oct 2022, pp: 477-485 www.ijprajournal.com ISSN: 2456-4494

Formulation and Evaluation of Herbal Shampoo

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Submitted: 16-09-2022 Accepted: 26-09-2022

ABSTRACT: The current Study aimed to formulate a pure herbal shampoo and to evaluate and compare its physicochemical properties with already marketed shampoos.The herbal shampoo was formulated by adding different plant extracts in different proportion to a 10%aqueous gelatin solution.Small amount of methyl paraben was added as preservative and pH was adjusted using citric acid.Several tests like visual inspection,pH, wetting time,%solid content,foam volume,surface tension,detergency, dirt dispersion were performed to determine the physicochemical properties.The formulated herbal shampoo was brownish green liquid, surface tension score was 37.2N/m, wetting time was 3mins and solid content was 1.1g.The results indicated the formulated herbal shampoo ishaving excellent detergency.However, further research and development is required to improve its quality and safety.

Key words: Herbal shampoo, Hibiscus, Neem, Spinach, Bilva, Reetha.

I. INTRODUCTION

HERBALSHAMPOO

Shampoo is a liquid or semi liquid preparation which is used for cleaning hair and scalp.

Herbal shampoos are the cosmetic preparations that consists of traditional and ayurvedic herbs which are meant for cleansing the hair and scalp just like the regular shampoos.

They are used for the purpose:

1. Removal of dirt
2. Removal of dandruff aremeant for cleansing the hair and scalp just like the regular shampoos.
3. Removal of oil.

The primary action is cleansing the hair of accumulated sebum scalp debris and residue of hair grooming preparation.The herbal shampoos are better in performance and safer than the synthetic ones.[1]

Ideal Properties Of Herbal Shampoo

1. Ease of application
2. Removal of debris.
3. Wet combing will be easy.
4. Good fragrance.
5. Irritation level is low.
6. Well preserved.
7. Good stability.[2]

Advantagesof Herbal Shampoo Over Synthetic Shampoos

- Pure and organic ingredients are used.
- These shampoos are free from side effects.
- No synthetic additives such as sodium lauryl sulphate.
- No animal testing.
- Skin friendly.
- These shampoos help in the strengthening the root which in turn helps in increasing the growth of hair.
- Herbal shampoos also help in increasing the shine of hair therefore for one who suffers from dry and dull hair these herbal shampoos are beneficial.
- It enhances the roots and helps in the formation of new root which are soft then before.
- Herbal shampoos help in reducing the dandruff production in the scalp.
- They may be beneficial in reduction of hair fall.

DISADVANTAGES

- Some herbs are sensitive to scalp. Example: Menthol.
- Natural products affect product uniformity and quality control.
- Sessional variation of plant constituents occurs.
- Less stable so, preservative should be added.
- Varying in consistency from batch to batch.
- Dry shampoo doesn't clean hair.
- Skin allergies may be occurred.[3]

wjpls, 2022, Vol. 8, Issue 12, 19-32 Review Article ISSN 2454-2229

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

AN OVERVIEW ON ANTIACNE ACTIVITY OF MEDICINAL PLANTS

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Article Received on 05/10/2022 **Article Revised on 26/10/2022** **Article Accepted on 16/11/2022**

ABSTRACT
Acne vulgaris is the skin condition that affects people the most often in a generation. Acne vulgaris is a common chronic skin condition that affects the hair follicles and sebaceous gland that they are attached to. Teenagers and young adults are the age groups when acne most frequently occurs and manifests as red, painful bumps with pus-filled pimples. Some medicinal plants are readily available and safer than others, making them suitable anti-acne treatments. Herbs with varied antibacterial, anti-inflammatory, antifungal, and antioxidant properties have been used to treat acne. Overall, compared to modern pharmaceuticals, herbal therapy is still far more affordable and safe. Therefore, in the current environment, there will be a greater need for herbal therapeutic products than for synthetic ones.

INTRODUCTION

Herbal cosmetics

There will be desperate changes in the society are clearly seen in all parts of the world for enormous application of cosmetics for the most part in 21st century. The world cosmetics is derived from Greek word "KOSMETICOS" which define adorn and preparation.[1] Cosmetics are external preparation meant for to apply on external part of body that is nails, skin, hair for colouring, covering, softing, cleaning, nourishing, waving setting, mollification, preservation, removal and protection.[2] Cosmetics can be applied by rubbing, pouring, sprinkling or spraying on human body or any part for cleansing, beautifying, promoting attractiveness altering appearance.[3]

Cosmetics are the chemical compounds derived from either natural sources or synthetically created products. Cosmetics are those designed for personal care and skin care which is used to protect the body skin.[4] These are also designed to enhance the persons appearance and also used to conceal blemishes by enhancing the persons natural features such as eyebrows, eyelashes. Cosmetics are also mainly designed to enhance the fragrance of the body.[5]

Medicinal plants by virtue of their safe nature and easy availability may lend themselves as potential anti-acne therapy. The present review deals with the proven medicinal plants to treat acne.[6]

Acne

Acne is an inflammatory disorder of the pilo sebaceous unit, which runs a chronic course and it is self-limiting. In adolescence Acne vulgaris is triggered by Cutibacterium acne under the influence of normal circulating dehydroepiandrosterone (DHEA). It is a prevalent skin disorder which can exist with inflammatory and non-inflammatory contusion predominantly on the face but can also occur on the upper arms, trunk and back.[7]

Acne, also familiar as acne vulgaris, is a long-term skin condition that arises when dead skin cells and oil from the skin congest hair follicles. Acne is a habitual skin constrain where the pores of skin become impassable by hair, sebum bacteria and dead skin cells, those blockages give rise to blackheads, whiteheads; nodules and other types of papules.[8] Most teenagers will have papules at some point. Some only have a few small papules that disappear early. Others develop relentless and distinctly visible acne. This can be very traumatic, peculiarly in puberty.[9]

It is the most common skin disease worldwide, being specifically common in adolescents and young adults. However, it can also affect toddlers and adults at any age. This assess the pathophysiology, topical and oral treatments, therapeutic approaches and evolving therapeutics for acne. Acnevulgaris, a disease of pilosebaceous follicles is an extremely common clinical problem.[10] In societies, acne vulgaris is a nearly universal skin disease, affecting 79% to 95% of the

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 5 Sep-Oct 2022, pp: 839-869www.ijprajournal.com ISSN: 2456-4494

A study on prescribing patterns of the drug in cardiovascular disease attending a tertiary care hospital

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Submitted: 25-09-2022 Accepted: 06-10-2022

ABSTRACT

BACK GROUND:

Cardiovascular disease comprises the most severe and preventable disorders in both developed and developing countries. CVD is a high priority health issue in the society, with a large portion of those who die or use acute and other health care services actually suffer from various CVDs or comorbidities. Ultimately, lifestyle is also affected by it, resulting in disability and/or deterioration in quality of life. In this study mainly aims to analyze the prescribing pattern of the cardiovascular drugs and prevalence of the cardiovascular disease.

OBJECTIVES:

PRIMARY OBJECTIVE: To evaluate the prescribing pattern of the drug in cardiovascular diseases and prevalence in tertiary care hospital.

SECONDARY OBJECTIVE: To determine the prevalence of cardiovascular diseases. To study the demographic details of cardiac patient. To study category of drugs prescribed to cardiovascular diseases. To identify the most prescribed drugs for cardiovascular diseases. To determine type of therapy used for cardiovascular diseases. To assess the prescribing habits of cardiologists. To evaluate and describe risk factors that, impact the risk of cardiovascular diseases. To evaluate behaviors that impact cardiovascular health. To promote rational use of drugs.

METHODOLOGY: This study is going to be conducted at Mallige hospital. Mallige hospital is multispecialty tertiary care hospital with over 126 beds conveniently located in the heart of Bengaluru, the capital of Karnataka state of India. Mallige hospital consists of many departments like Nephrology, Cardiology, Radiology, General Medicine, Surgical, Pediatrics, Obstetrics & Gynecology, etc. The study involves retrospective observational study. Study is going to be conducted for 6 months in which data collection period for 3 months. **Inclusion criteria:** Patient having the age of 18 years and above. Patient prescribed one or more therapy for cardiovascular diseases. Any patient visited the cardiology department during the study period. Patient with other co-morbid conditions, Patient having at least anyone of symptoms: Tiredness/fatigue/Fever/chest pain/ dyspnea/Bell's palsy/confusion trouble speaking/ irregular heartbeat/Persistent cough or wheezing with white or pink blood-tinged phlegm/edema/nausea and vomiting.**Exclusioncriteria**: Incomplete information Patient in other departments of the hospital. Pregnant and lactating women, Patient below 18 years, Patient who are not willing to participate in the study, Post heart surgery less than one month, Surgery patient. Statistical analysis will be performed using MS-excel and the result will be statistically analyzed using appropriate statistical method.

RESULT: In this study a total of 150 patients were selected by criteria .Out of which 85 (57%) patients were male and remaining 65 (43%) patients were female. Out of which Majority of Patients 101(67.33%) belongs to age group of 59>years. Correlation between the age group and weight of the patients in the study is significant at the 0.05 level by 2 tailed. Correlation between the age group and Body Mass Index of the patients in the study is significant at the 0.01 level by 2 tailed, which mainly denotes the risk factor .In this study total number of patients visited during the study period is found to 536, and number of CVD prescriptions during the study period is 150 so, the prevalence of cardiovascular disease was found (22%). Physicians diagnosed observed different clinical condition that hypertension 137(36%),followed by ischemic heart disease 84(22%),heart failure 30(8%), stroke 21(6%),coronaryarterydisease 22(6%), rheumatic heart disease 19(5%),dyslipidemia20(5%),angina 20(5%), arrhythmia 10(3%),myocardial infarction 11(3%),aortic valves stenosis 5(1%). It was also diagnosed with other comorbidity conditions like

2022

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 4 July-Aug 2022, pp: 54-62 www.ijprajournal.com ISSN: 2456-4494

Formulation and Evaluation of Fexofenadine Hydrochloride Fast Disintegrating Sublingual Tablets for Improving Bioavailability

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Submitted: 01-07-2022 Accepted: 08-07-2022

ABSTRACT

Objectives:

To improve the dissolution and bioavailability of fexofenadine HCl, an attempt was made to prepare its sublingual tablets by using different super disintegrants.

Methods:

The tablet is prepared by direct compression method by using different super disintegrants such as cross povidone, sodium starch glycolate and extracted mucilage powder of Plantago ovata seeds for increase the rate of dissolution. Different characterization parameters viz. FTIR, hardness, weight variation, drug content, in- vitro dissolution, in- vivo plasma drug concentration and stability were evaluated.

Key findings:

The evaluated parameters were in compliance with the pharmacopoeia limits. The most successful formulation F2, shows within 60seconds of complete disintegration and drug release in specified time 60min. The In-vitro drug release of Fexofenadine sublingual tablet F2 formulation containing cross povidone was found to be 98.55±0.89% for 60min.The In-vivo study of Fexofenadine sublingual tablet was performed for the best formulation F2 using three healthy albino rabbits. The Cmax was found to be 0.079µg/ml from oral route and 0.101µg/ml from sublingual route. The stability studies for best formulations were carried out for 90 days at 40 ± 2 °C /75% ± 5% RH. There was no significant change in disintegration, drug content and drug release.

Conclusion:

The results indicated that the prepared fast disintegrating sublingual tablets of Fexofenadine hydrochloride could perform therapeutically better than conventional oral tablets with improved efficacy and better patient compliance. The In-vivo animal study showed the better bioavailability by sublingual route when compare to oral route.

Key Words: Fexofenadine hydrochloride, super disintegrants, sublingual tablet, taste masking, In-vivo drug concentration.

I. INTRODUCTION:

The concept of sublingual drug administration emerged from the desire to provide patient with more conventional means of taking their medication. It is difficult for many patients to swallow tablets and hard gelatin capsules, especially patients like pediatrics and geriatrics, un cooperative patients, mentally retard and patients advised with less intake of water have more beneficial of the sublingual medication. In terms of permeability, the sublingual area of the oral cavity is more permeable than cheek and palatal areas of mouth. The drug absorbed via sublingual blood vessels bypasses the hepatic first-pass metabolic processes giving acceptable bioavailability with low doses and hence decreases the side effects. The main mechanism for the absorption of the drug into oral mucosa is via passive diffusion into the lipoidal membrane. The absorption of the drug through the sublingual route is 3 to 10 times greater than oral route. Introduction of Sublingual Drug Delivery The literal meaning of sublingual is 'under the tongue'. Sublingual mucosa is the membrane of the ventral surface of tongue and the floor of the mouth. Sublingual drug delivery refersto a mode of drug delivery by which the drug substances are placed under the tongue and are directly absorbed via the blood vessels under the tongue. Sublingual drug delivery offers various advantages such as avoidance of the gastrointestinal and hepatic pre systemic elimination and fast onset of drug action. In comparison to other non-invasive routes of delivery into the systemic circulation such as transdermal drug delivery, drug delivery via sublingual mucosa offers higher permeability to drug, easier access to the administration site, and cost effectiveness. Therefore, as a site of drug administration, sublingual region is an attractive

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Solubility Enhancement of Poorly Soluble Drug Carvedilol by Using Complexation and Solid Dispersion Techniques

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ABSTRACT:
Background and objective: The prime requirement of any drug therapy is Bioavailability. At present most of the new chemical entities have low aqueous solubility and high lipophilicity therefore enhancement of solubility has been major challenge in formulation development. Hence the work was carried out with the objective of formulating and evaluating the solid dispersion and inclusion complexes of Carvedilol with an aim to increase hydrophilicity and bioavailability of Carvedilol. Methods: Solid dispersions and inclusion complexes of Carvedilol were prepared using hydrophilic carriers PEG-6000, P188, β-CD and lactose in different ratio of 1:2, 1:4, 1:6 by fusion , solvent evaporation , kneading and co-precipitation methods. The formulations were evaluated for drug release, drug content and drug-polymer interactions by using various techniques like in-vitro dissolution, UV-Visible Spectroscopy and Fourier Transform Infrared (FTIR) Spectroscopy. Results: All the formulation showed marked increase in drug release. The solid dispersion prepared by solvent method showed better release compared to that of fusion method. The inclusion complexes prepared by kneading method showed better release than co-precipitation method. Solid dispersion of Carvedilol with P188 of ratio (1:6) showed higher drug release. The formulation which showed better release was again formulated using additional functional Excipients Lactose, which showed much better release than the before formulation. Inclusion complexes prepared by kneading method with ratio of (1:6) showed higher drug release. The formulation which showed high drug release was again formulated using functional Excipients lactose, this showed better release than the drug and hydrophilic polymer.

Key Words: Carvedilol, Solid dispersion, Inclusion complexes, PEG6000, P188, β-CD, lactose, Solvent Evaporation, Kneading method, Fusion method, Co-precipitation method.

INTRODUCTION

Therapeutic effectiveness of a drug depends upon the bioavailability and solubility of drugs molecules. The poor solubility and low dissolution rate of poorly water soluble drugs in aqueous gastrointestinal fluids often causes insufficient bioavailability. Therefore it is necessary to enhance the solubility and dissolution of these drugs to ensure maximum therapeutic efficacy. The most promising method for promoting solubility is the formation of solid dispersion and inclusion complexes by using hydrophilic carriers. The solid dispersion and inclusion complexes reduce the particle size and therefore increases solubility and absorption of drugs.The term solid dispersion refers to the dispersion of one or more active ingredients in an inert carrier in a solid state, frequently prepared by fusion and solvent evaporation method.[1]The term inclusions complexes refer to molecular compounds having the characteristic structure of adduct, in which one compound (host molecule) spatially encloses another within(guest molecule). Carriers commonly used in solid dispersions (SDs) are PEG600, P188, Lactose and carriers used in inclusion complexes are β-CD, Lactose.[2]

Carvedilol (CRV) is a beta-blocker used to treat high blood pressure and heart failure. CRV is partially insoluble in water. The solubility of CRV is limited because of its protonation, resulting in situ hydrochloride saltformation which exhibits less solubility in acidic medium.

Carvedilol, an anti-hypertensive drug. Carvedilol belongs to BCS Class II (low solubility and high permeability)which exhibit low and variable oral bioavailability due to its poor aqueous solubility. Because of poor aqueous solubility and dissolution rate it posses challenging problems in its formulation development. It needs enhancement in the dissolution rate in its formulation development to derive its maximum therapeutic efficacy. Among various techniques Cyclodextrin Complexation, Solid dispersions and Solvent deposition, use of surfactants and superdisintegrants are widely accepted in industry for enhancing the dissolution rate of poorly soluble drugs from the solid dosage forms. In solid dispersion and Complexation the poorly soluble drug is dispersed in an inert water-soluble carrier such as urea, polyethylene glycol, poly vinyl pyrrolidone and surfactants at solid state. [3,4] The aim of the present work was to enhance aqueous solubility of Carvedilol by solid dispersion techniques and inclusion complexes using carriers such as PEG 6000, Poloxamer 188, β-CD, Lactose.

Hence in the present study, an attempt has been made to develop solid dispersion and inclusion complexes Carvedilol by adding hydrophilic polymers in different ratios with functional excipients for increasing the solubility and to see an increase in bio-availability.

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 3 May-June 2022, pp: 449-457 www.ijprajournal.com ISSN: 2456-4494

Formulation and Evaluation of Floating Beads of Nizatidine

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Submitted: 10-05-2022 Accepted: 20-05-2022

ABSTRACT:
The main intention of the present study is to develop the ideal floating beads of nizatidine for prolongation of the gastric retention time in the stomach and enhance patient compliance in the treatment of peptic ulcers. Nizatidine is a histamine type-2 receptor antagonist (H2 blocker) and it is a selective H2 antagonist which inhibits gastric acid secretion to treat gastric ulcer and gastroesophageal reflux disease. The half-life of nizatidine is 1-2hrs.Nizatidine floating beads was prepared by using sodium alginate, HPMC (K4M, K15M, K100M) as a polymer and calcium carbonate used as gas forming agent. The ionotropic gelation method is carried out for preparation of floating beads. The compatibility of drug and polymers were study FTIR technique. The particle size and surface morphology are characterized by SEM analysis. The prepared beads were evaluated for physical characterization floating lag time, swelling index, entrapment efficiency, buoyancy studies, invitro drug release studies.
The formulation remains buoyant for more than 12hrs and all the nine formulation shows the mark increases in drug release. SEM analysis studies shows the particles are in spherical shape. Formulation F8 containing HPMC K100 M shown the better result. The percentage yield of F8 formulation found to be 96.6%, swelling index 92.3%, percentage entrapment efficiency 75.7%.
KEYWORDS: Nizatidine, peptic ulcer, ionotropic gelation, floating beads, Gastric residence time, Buoyancy.

I. INTRODUCTION

Peptic ulcer is chronic, frequently develop lesions that happen in any part of the gastrointestinal tract due to the more amount of secretion of acid peptic juices. Peptic ulcer develops in a number of parts of the gastrointestinal tract (GIT) which is exposed to gastric acid and pepsin, for example the stomach and duodenum. Peptic ulcers usually induced in rodents by physiological, pharmacological or other surgical medicines which have etiological significance for stimulation of peptic ulcers. A few models are referenced in following which utilized tentatively for testing or assessing against peptic ulcer action of medications.

There are atleast two main targets which could be used for anchoring of delivery system through mucoadhesive in the GIT, the mucosal tissue and mucosal gel layer. The mucos layer is the first surface encountered by particulate system and its complex structure offers many opportunities for the development of adhesive interaction with small polymeric particles either through non-specific or specific interaction between complimentary structures. Due to all above advantages Microsphere delivery is a better choice for drug delivery in colon.

Microballoons are low-density systems that have sufficient buoyancy to float over gastric fluid and remain in stomach for prolonged period of time. As the system floats over gastric fluid, the drug is released slowly at desired rate resulting in increased gastric retention with reduced fluctuations in plasma drug concentration. When microballoons come in contact with gastric fluid, the gel forms and polymers hydrate to form a colloidal gel barrier that controls the rate of fluid penetration into the device and consequent drug release. As the outer surface of the dosage form dissolves, the gel layer is maintained by the hydration of the adjacent hydrocolloid layer. The air trapped by the swollen polymer makes the density lower than the gastric fluid and confers buoyancy to the microspheres.

Nizatidine is a histamine type-2 receptor antagonist (H2 blocker) and it is a selective H2 antagonist which inhibits the gastric acid secretion to treat gastric ulcer and gastroesophageal reflux disease. The half-life of nizatidine is 1-2hrs. The aim of the research work is preparing nizatidine floating beads by using sodium alginate, HPMC (K4M, K15M, K100M) as a polymer and calcium

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 4 July-Aug 2022, pp: 691-703www.ijprajournal.com ISSN: 2456-4494

Formulation and Evaluation of Sustainedrelease Matrix Tablet of Nitrofurantoin

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Submitted: 10-07-2022 Accepted: 21-07-2022

ABSTRACT

The main objective of the present work was to develop sustained release matrix tablets of Nitrofurantoin. To reduce the frequency of administration and to improve the patient compliance, a twice daily sustained release formulation of Nitrofurantoin is desirable. So sustained release Matrix tablet of Nitrofurantoin was designed by using different polymers viz. Hydroxyl Propyl Methyl Cellulose (HPMC K4M, K100M), and natural polymer like xanthan gum at varying ratios of drug and polymer were selected for the study. The IR examine found out that there has been no chemical interplay among drug and excipients. The tablets were prepared by direct compression method. Pre-compressional parameters such as angle of repose, percent compressibility, and Hauser's ratios were studied. These results indicate that powder blend had good flow characteristics. After assessment of physical properties like Weight variation, Hardness, Thickness, Friability of tablet, the different formulations were checked for the percentage Drug content, which showed good uniformity. The in vitro release study was performed in 0.1N HCl for first 2 hrs and in phosphate buffer pH 6.8 up to 12 h. The effects of polymer concentration were studied. Dissolution records become analyzed via way of means of Percentage cumulative drug release Matrix capsules studied for the distinct polymer ratios and overall performance checked for different concentration ratios. The effects of drug dissolution research confirmed advanced drug release, retardation effects of the polymers and could achieve better performance. It was observed that matrix tablets contained mixture of natural and synthetic polymer successfully sustained the release of drug up to 12 hrs. Stability studies (40±2°C) for three months indicated that Nitrofurantoin become stable in the matrixtablets.

KEYWORDS: Nitrofurantoin, Hydroxyl Propyl Methyl Cellulose (HPMC K4M, HPMC K100M), Xanthan gum, Sustained release.

I. INTRODUCTION

[1]Diseases and problems are the principle elements for which pharmaceutical enterprise make the drug treatments and make certain that excellent of existence for the human beings is improved. Everyone is going through paintings pressure, they're going thru stress, abnormal weight-reduction plan habits, and negligence closer to exercising has made the human beings extra vulnerable to diseases. Once the people reach their 40s, they start acquiring one or more common diseases like high blood pressure, high cholesterol level, Diabetes etc. As they grow older, the list of medication increases and so do their frequency of medication. The market is changing and new technological improvements are taking place and drug delivery systems are changing rapidly. The market is now more focusing on modified release drug deliverysystems.Most conventional drug products, such as tablets and capsules, are formulated to release the active drug immediately after administration to obtain rapid and complete systemic drug absorption.The conventional dosage form gives prompt release of drugs showing fluctuations in drug concentration in the body and necessitates multiple dosing to maintain the therapeutic level. So, to achieve and maintain uniform concentration of drug in the therapeutic range the modified dosage formsare developed.

[2]Sustainedrelease drug delivery system.Any dosage form that maintains the therapeutic blood or tissue levels of drug by continuous release of medication for a prolonged period of time, after administration of a singledose. Sustained release tablet owing a twofold or greater reduction in frequency of administration of a drug in comparison with the frequency required by a conventional dosage form. It is designed to

ejbps, 2022, Volume 9, Issue 9, 196-203. Research Article SJIF Impact Factor 6.044

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

ISSN 2349-8870
Volume: 9
Issue: 9
196-203
Year: 2022

FORMULATION AND EVALUATION OF FAST DISSOLVING TABLET OF CYCLODEXTRIN INCLUSION COMPLXED WATER INSOLUBLE DRUG: ACECLOFENAC

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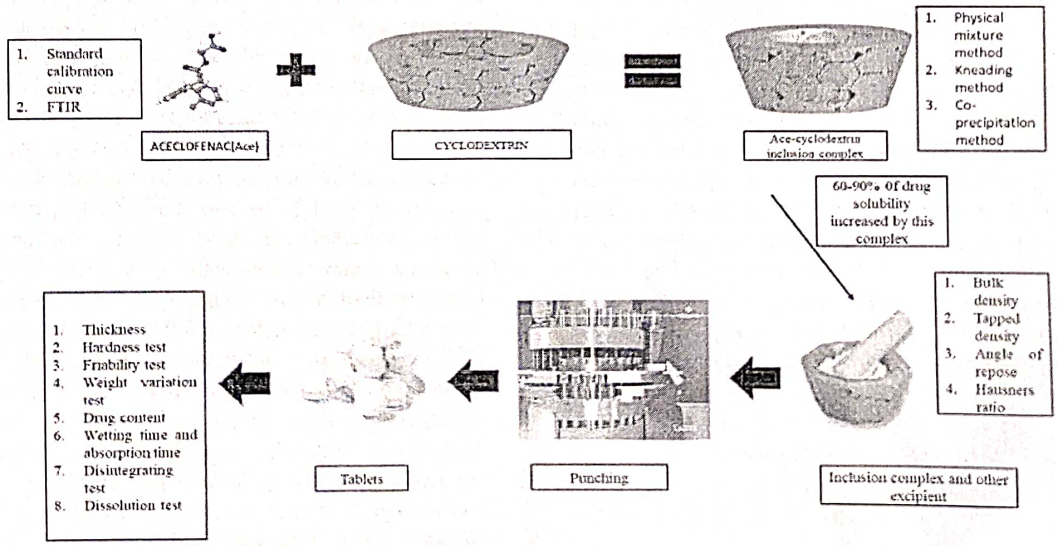
Article Received on 25/06/2022 **Article Revised on 15/07/2022** **Article Accepted on 05/08/2022**

ABSTRACT

The enhancement of solubility of poorly water-soluble drugs is one of the challenging aspects of drug development. Therefore, formulation approaches are being explored to enhance solubility of poorly water-soluble drugs. The aim of the present study was formulation and evaluation of a fast-dissolving tablet of cyclodextrin inclusion complex with water insoluble drug aceclofenac. Complexation is an extensively used technique in the pharmaceutical field to improve solubility of several pharmaceutical ingredients and poorly water-soluble drugs. The inclusion complex of aceclofenac with β-cyclodextrin was prepared in 1:0.5, 1:1, 1:1.5 and 1:2 ratios in various methods such as physical mixture method, kneading method, and co-precipitation method. Among all the inclusion complex formulations, the aceclofenac and β-cyclodextrin 1:2 ratio in the physical mixture method showed an increase in solubility than pure drug. The best inclusion complex was prepared as a mouth dissolving tablet by using various types of super disintegrants such as sodium croscarmellose, polyvinylpyrrolidone and starch maize. The granules were evaluated for angle of repose, bulk density, tapped density and Carr's index. Tablets are prepared by direct compression method and evaluated for weight variation, hardness, friability, wetting time, water absorption ratio, disintegration time and *in-vitro* drug release. The F3 formulation containing sodium croscarmellose was best among all the formulations. It disintegrates within 48sec, wetting time was 30 sec and 94% of drug release in 30 minutes.

KEYWORDS: Aceclofenac, cyclodextrin, inclusion complexes, solubility enhancement, fast dissolving tablets.

Graphical abstract



International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 4 July-Aug 2022, pp: 412-425 www.ijprajournal.com ISSN: 2456-4494

Formulation and In-Vitro Evaluation of Bilayer Tablet of Sumatriptan Succinate

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Submitted: 01-07-2022 Accepted: 14-07-2022

ABSTRACT:

The goal of the present study was to develop and evaluate bilayer tablet of sumatriptan succinate, an antimigraine drug. The Bilayer tablets (F1-F12) was prepared by direct compression method and formulated using different concentration of polymers. Combination of polymer, HPMCK4M, Xanthan gum, guar gum FT-IR spectroscopy was done to study the compatibility of the drug with various excipients used in formulation. Formulations were subjected for pre-compression and post compression evaluation. The granules of the blend showed excellent flow property & good compressibility index. The compressed tablets were evaluated for post compression parameters and showed compliance with pharmacopoeial limits. Bilayer tablet is one of the great advanced technologies which contain two different layered formulations with one layer of drug provide immediate release and the other as sustained. Sumatriptan succinate is a triptans class of drug used to treat migraine headaches, which acts selectively at 5-HT1B/1D receptors. The objective is to formulate and evaluate the bilayer tablets of sumatriptan succinate of dose 100 mg. In this case immediate release layer is formulated using crospovidone as a super-Disintegrants. Sustained release layer is formulated using hydroxypropyl methylcellulose K4M, xanthan gum and guar gum in various ratios to delay the drug release. FT-IR studies for excipients are tested for compatibility with the drug. Evaluations such as Hardness, Thickness, Friability, Weight variation, Disintegration time and Assay were determined for bilayer tablets. In vitro drug release was performed with USP dissolution apparatus type-II (paddle type) using 0.1 N Hydrochloric acid for two hours and later hours with 6.8 pH phosphate buffer by temperature maintaining at 37°C ± 0.5 °C. Based on results among all formulations F7 formulation containing drug and Guar gum in ratio of 1:1 showed maximum drug release of 91.54%. Thus, drug formulation of F7 has enhanced drug release profile.

KEYWORDS: Sumatriptan succinate, Bilayered tablets, Direct compression method, HPMCK4M, Xanthan gum, Guar gum.

I. INTRODUCTION

For many decades, treatment of acute disease or a chronic illness has been mostly accomplished by delivering drugs using various pharmaceuticals dosage forms, including tablet, capsules, pills, suppositories, creams, ointments, liquids, aerosols, and injectables as carriers. Among various route of drug delivering route is perhaps the most preferred to the patient and the clinician alike. However this route presents some problem for a few drugs. The enzymes in GI-fluids GIT-pH conditions and the enzymes bounds to the enzymes bound to GIT membranes are a few factors responsible for the bioavailability problems. The blood that drains the GIT carries the drug directly to the liver leading to first pass metabolism resulting in poor bioavailability. The inherent problem associated with the drug in some cases can be solved by modifying the formulations or by changing the route of administration parenteral, mucosal and transdermal route circumvent hepatic first-pass metabolism and offer alternative routes for the systemic delivery of drugs.[1]

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 6 Nov-Dec 2022, pp: 1089-1102 www.ijprajournal.com ISSN: 2456-4494

Formulation and Evaluation of Ciprofloxacin Microspheres for Targeted Drug Delivery"

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Submitted: 01-12-2022 Accepted: 10-12-2022

ABSTRACT:
Microspheres are drug delivery systems which are prepared to get extended or controlled drug delivery to strengthen bioavailability, stability and target the drug to particular site at a predetermined rate. Microparticles are generally have the particle size range from 1– 1000 µm size, serve as multiunit drug delivery systems with clear physiological and pharmacokinetic benefits in order to improve the effectiveness, tolerability, and patient compliance. It has been shown that it not only enhances the dissolution of poorly soluble drugs but also employ a remarkable effect on fat metabolism in the body. Microspheres can successfully increase the biological half-life and reduce the therapeutic dose of their drug, thereby reduce the adverse drug reaction. The present review provides detailed discussion of therapeutic feature of microsphere drug delivery including the advantages and disadvantages of microspheres, preparation of microspheres, carriers used, characterization, and applications of microspheres. Microspheres are one of the most promising targeted and effective drug deliveries. A microsphere has a drug located centrally within the particle, where it is closet within a single polymeric membrane. A Microspheres has its drug distribute throughout the particle i.e., the internal structure is a matrix of drug and polymeric excipients. It is the dependable 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 unpredictable effects.

KEYWORDS: ciprofloxacin, solvent evaporation method, Eudragit- s 100, chitosan, agarose, ethylcellulosfloatingmicrospheres.

I. INTRODUCTION

The term microspheres, which explains as a spherical particle with size varying from 1µm to (1000 µm) 1 mm, containing a core substance. Microspheres comprises of strict sense, spherical empty particles. However, the terms microcapsules and microspheres are often used synonymously.

The concept of targeted drug delivery is designed for attempting to concentrate the drug in the tissues of interest while reducing the relative concentration of the medication in the remaining tissues. As a result, drug is localized on the targeted site. Hence, surrounding tissues are not affected by the drug. So, carrier technology offers an intelligent approach for drug delivery by coupling the drug to a carrier particle such as microspheres, nanoparticles, liposomes, niosomes etc. which modulates the release and absorption characteristics of the drug. Microspheres are characteristically free flowing powders consisting of proteins or synthetic polymers which are biodegradable in nature and ideally having a particle size less than 200 µm. 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 tumour. 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[1,2]

II. MATERIALS

Ciprofloxacin drug got gift Sample from KAPL, Polymers Such as Ethyl cellulose and Eudragit S-100 were obtained from Yarrow chem products, Ethyl cellulose were obtained from Indian Fine Chemicals, Mumbai, Agarose were obtained from Yarrow Chem Products, Chitosan

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 6 Nov-Dec 2022, pp: 1052-1063 www.ijprajournal.com ISSN: 2456-4494

"Formulation and Evaluation of Ibuprofen Microsponges for Topical Drug Delivery"

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Submitted: 01-12-2022 Accepted: 08-12-2022

ABSTRACT

In this study ethyl cellulose facilitated microsponges were prepared by the double emulsification technique (Quasi emulsion technique) and subsequently dispersed in a carbopol gel base for controlled delivery of diclofenac sodium to the skin. The microsponges formulations were prepared by quasi emulsion solvent diffusion method employing ethyl cellulose as a polymer. The compatibility of the drug with formulation components was established by Fourier Transform Infra-Red (FTIR) spectroscopy and Differential scanning electroscopy (DSC). The surface morphology, particle size, production yield, and drug entrapment efficiency of microsponges were examined. Shape and surface morphology of the microsponges were examined using scanning electron microscopy. Particle size of prepared microsponges was observed in the range of 30.80 to102.30 µm. SEM photographs revealed the porous spherical nature of the microsponges in all variations; however, at higher ratios, drug crystals were observed on the microsponges surface. Increase in the drug/polymer ratio (1:0.5 to 1:4.5) increased their yield, the particle size also increased, The pH of the gel was determined having average pH of 7.3 ± 0.4, The viscosity of the formulation was analyzed by Brookfield viscometer with maximum reading of 2874 and minimum reading of 2858 cps, the drug content of different formulations was found in the range 89.9 to 96.05 %, the spreadability of gel containing microsponges revealed in the range of 20.5 to 22.8 gmcm/sec showing good characteristics of spreading, the cumulative release of the formulations are in the range of 76.86-90.06%.

KEYWORDS: Ethyl Cellulose, Microsponge Delivery System (MDS). Scanning Electron Microscopy (SEM), UV Spectroscopy.

I. INTRODUTION

The Skin is one of the areas which have high area for application and use of topical dosage forms. the type of drug and its characteristics are the factors that influence the formulation.

The topical administration is having many advantages, which include the avoid of first pass metabolism. Also, it has more patient compliance for its simple application on the skin without any help of others. The topical administration can be varied to get the type of release and have better advantage of the drug. It can be formulated according to the body conditions and the release can be modified as sustained, controlled release, also can be formulated and make them release to pH activity.

A topical delivery system defined as the substance that carries a specific drug into contact with and through the skin. The challenge to topical drug delivery is the transport across the skin barrier. Topical delivery includes two basic types of product: External topical that are spread, sprayed, or otherwise dispersed on to cutaneous tissues to cover the affected area. Internal topical that are applied to the mucous membrane orally, vaginally or on an rectal tissues for local activity. For the most part topical preparations are used for the localized effects at the site of their application by virtue of drug penetration into the underlying layers of skin or mucous membranes. Although some unintended drug absorption may occur, it is sub therapeutics quantities and generally of minor concern.

Microsponges are polymeric delivery system composed of porous microsponges. They are tiny sponge- like spherical particles with a large porous surface. Moreover, they may enchance stability, reduce side effects and modify drug release favorably. They are tiny sponge like spherical particles that consist of a myriad of interconnecting voids within a noncollapsible structure with a large porous surface through which active ingredient are released in a controlled manner. The size of the microsponge's ranges from 5-300 µm in diameter and a typical 25 µm sphere can have up to 250000 pores and an internal pore

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 5 Sep-Oct 2022, pp: 870-875www.ijprajournal.com ISSN: 2456-4494

A Study on Prescribing Patterns of Antihypertensive Drugs in a Tertiary Care Hospital

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- Submitted: 25-09-2022 Accepted: 06-10-2022

ABSTRACT

BACKGROUND:
This study assessed the prescription pattern of antihypertensive medications among hypertensive inpatients at Mallige Hospital, Bangalore, Karnataka in accordance with guidelines for pharmacotherapy of hypertension.

OBJECTIVES:
Primary objective: To evaluate the prescribing patterns of antihypertensive drugs in hypertension. Secondary objectives: Association of hypertension with age, Body mass index, Type 2 diabetes and gender.

METHODOLOGY:
This study was conducted at Mallige Hospital which is a multispeciality tertiary care Hospital with over 126 beds located in Bengaluru, the capital of Karnataka state of India. The study involved was Retrospective study and was conducted for 6 months. patients having the age 18 years and above, patient prescribed antihypertensive drugs and patient having known case of hypertension was taken for study. Statistical analysis was performed using Microsoft-excel.

RESULT:
More than 60% of the cases collected are having comorbidity diabetes mellitus and ischemic heart disease with hypertension. In antihypertensive therapy, 61% of drugs prescribed are diuretics and Calcium channel blocker. Average number of days of stay in Hospital was found to be 5 to 6 days and 50% of patients only stayed 1 to 5 days.CONCLUSION:
The prescribing pattern of antihypertensive drug moderately followed standard treatment guidelines for drugs prescribing for hypertension. In general monotherapy is the most frequently used followed by dual therapy and three drug combination. In monotherapy Calcium channel blocker is the most commonly prescribed drugs followed by diuretics and beta blockers. Angiotensin receptor blocker + DIURETICS and Cal calcium channel blocker + BETA BLOCKERS are most prescribed drugs for treatment of hypertension.

I. INTRODUCTION

Hypertension is a non-contagious epidemic that affects millions of people and is a common risk factor of death throughout the world. Normal blood pressure of the person is 120/80 mm of Hg and the person whose reading is above 140/90 mm of Hg is considered as hypertensive. Hypertension is defined as the persistent elevation in the arterial blood pressure or condition that arises when the BP is abnormally high. It occurs when the body's small vessels narrows which cause the blood to exert excess pressure against the vessel walls forcing heart to work harder to maintain BP. This can lead to loss of elasticity or wear and tear of blood vessels and heart (hypertrophy) which will eventually lead to failure. Complications can be injury to kidneys, brain and eyes.[1]

There are many risk factors for high blood pressure such as Overweight, Age, Family history, excess alcohol intake, unhealthy diet, less physical activity, stress and many more. There is consistent increase in use of antihypertensive drugs worldwide. Mild to moderate Hypertension may be controlled by a single-drug regimen, although more severe cases often require a combination of drugs. The Joint National Committee (JNC-8) is considered the "gold standard" consensus guidelines for the management of hypertension. European guidelines suggest that unless a special indication exists, any of the five anti hypertensive classes can be used as first line treatment. Various lifestyle modifications include losing weight, quitting smoking, eating a healthy diet, exercising regularly, and limiting alcohol consumption.

Original Article

Use Of Rp-Hplc For The Analytical Method Development Of Anti-Tubercular Drug- Bedaquiline

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Abstract

A rapid sensitive and accurate method for the quantitative and qualitative estimation of bedaquiline was developed using the reverse phase HPLC (RP HPLC) method using acetonitrile and 0.1% trifluoroacetic acid as mobile phase. The system's suitability was established. The method was validated as per ICH guidelines. The system suitability was established with a good resolution of peak and retention time of 2.27min. The linearity was established at 242nm in the range of 30-180µg/ml, with a correlation corrfiecint of 0.9999. The limit of detection and the limit of quantification was found to be 3µg/ml and 12µg/ml respectively. The accuracy and precision of the process were found to be within the limit of acceptance calculated through relative standard deviation(RSD). The robustness of the process was established with a deliberate change in the injection flow rate, the content of the organic phase and the wavelength. The chromatographic method was found to be specific for the determination of the analyte in a photodegradation study of the known concentration of the sample. Hence it can be concluded that the overall process is simple, rapid, accurate and robust enough for the routine analysis of Bedaquiline in pharmaceutical formulation.

Keywords: Bedaquiline, RP-HPLC, Analytical validation, Accuracy, Precision, Robustness.

INTRODUCTION

Bedaquiline fumarate is an USFDA-approved diarylquinoline drug for the treatment of multidrug-resistant tuberculosis. It is used in combination with the first-line treatment of tuberculosis(Sarathy et al 2019). The diarylquinoline drug acts by inhibiting the mycobacterial enzyme ATP synthase. The IUPAC name of Bedaquiline is 1(R,2S)-1-(6-bromo2methoxyquinolin-3-yl)-4-(dimethylamino)-2-naphthalene-1-yl-1-phenylbutan-2-ol. The drug is highly protein bound and has a very long half-life of 5.5 months. The long half-life indicates the slow release of the drug in the plasma(Nagabushan et al 2014). In presence of the enzyme CYP3A4, the drug metabolizes to N-monodesmethyl metabolite which is 4 to 6 times less potent than the parent molecule. The drug is classified in the category II of the biopharmaceutical classification system and shows poor oral bioavailability. Currently, the drug is marketed in the form of tablets at a strength of 20mg or 100mg. The drug is prescribed under strict supervision. The official dissolution media for the preparation of the stock solution of the drug is 0.1N hydrochloric acid and methanol(Pardhi et al 2020). The researchers are adopting various novel techniques to improve its solubility and bioavailability. Therefore, a quick quantitative and qualitative analysis of the drug is very much essential. The analytical method should be simple, accurate, and reliable enough to estimate the drug even in meagre quantity. The present study focuses on the development of a new reversed phased HPLC method without the use of alcohol and aims to get a short retention time.

MATERIALS AND METHODS

Bedaquiline was procured from Clearsynth labs, Mumbai, India, HPLC grade acetonitrile, Trifluoroacetic acid, and water were purchased from Himedia labs, Bangalore.

FORMULATION AND EVALUATION OF SUSTAINED RELEASE TABLET OF DICYCLOMINE HYDROCHLORIDE

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ABSTRACT

The goal of the present study was to Formulate and evaluate Sustained Release tablet of Dicyclomine Hydrochloride to reduce the dosing frequency to twice daily, thereby increasing patient's compliance and therapeutic efficacy. Sustained release system achieves slow release of drug over prolonged period of time. This system retards the release of therapeutic agent such that its appearance in the circulation is delayed or prolonged and its plasma profile is sustained in duration. Sustained release formulation maintains a uniform blood level of drug with better patient compliance as well as increased efficacy of drug. The Sustained Release Tablets (F1-F9) were prepared by direct compression method and formulated using different concentration of polymers. Combination of polymer, Guar Gum, Xanthan gum, Hydroxyl Propyl Methyl Cellulose (HPMC K15M). FT-IR spectroscopy was done to study the compatibility of the drug with various excipients used in formulation. Formulations were subjected for pre-compression and post compression evaluation. The IR study revealed that there was no chemical interaction between drug and excipients. The tablets were prepared by direct compression method. Pre-compressional parameters i.e. angle of repose, carr's index, bulk density, tapped density and Hauser's ratios were studied. These results indicate that powder mixture had good flow characteristics. After evaluation of physical properties like Weight variation, Hardness, Thickness, Friability of tablet, the different formulations were checked for the percentage Drug content, which showed good uniformity. The compressed tablets were evaluated for post compression parameters and showed compliance with pharmacopoeial limits. Dicyclomine HCl is an antispasmodic and anticholinergic which is used for relief colicky pain caused by intestinal muscle spasm in functional bowel /irritable bowel syndrome (IBS). The objective is to formulate and evaluate the Sustained Release tablets of Dicyclomine HCl containing 30 mg.

In- vitro drug release was performed with USP dissolution apparatus type-II (paddle type) using with 6.8 pH phosphate buffer by temperature maintaining at Room Temperature. Based on results among all formulations, F4 formulation containing drug and xanthan gum in ratio of 1:2 showed maximum drug release of 98.108 %. Thus, drug formulation of F4 has enhanced drug release profile.

Keywords: Sustained Release Tablet, Direct Compression Method, Guar gum, Xanthan gum, HPMC K15M, Dicyclomine Hydrochloride.