Viswambhara Educational Society

VAAGDEVI PHARMACY COLLEGE

Approved by AICTE, PCI-New Delhi & Affiliated to JNTUH
P.O.BOLLIKUNTA, WARANGAL-506 005(Telangana State)

3.3.2.1 Publications for the Academic Year 2016-2017

S.No	Title of Paper	Name of the Author/s	Department of the Teacher	Year of Publication	Name of journal	ISBN/ISSN Number
1	Synthesis, Charecterization and Antimicrobial Activity of 5-Methyl - 2, 4- Dihydro-3h-Pyrazol-3-One-4-(4-Subtituted) Benzylpiperazine Derivatives	Chidara Mahesh and Satla Shobha Rani	Pharmaceutical Chemistry	2016	International Journal of Pharmaceutical Sciences and Research	ISSN (Online):: 0975-8232; ISSN(Print): 2320-5148
2	Formulation Development and Characterization of Cefixime Hard Candy Lozenges and Troches	D. Radhika, G. Mahesh	Pharmaceutics	2017	Asian Journal of Medical and Pharmaceutical Sciences	ISSN: 2348-0165
3	Optimization of Encapsulation Efficiency of Piperine in SoyaLecithin Multilamellar Vesicles	Jithan V. Aukunuru, Chandrasekhar R. Bonepally3	Pharmaceutics	2017	International Journal of Chem.Tech Research	ISSN(Online): 2455-9555 ISSN(Print): 0974-4290,
4	Synthesis, Characterization and Antimicrobial Activity of 4-Substituted-Benzylpiperazinyl Methanone Derivatives	Mahesh Chidara Satla Shobha Rani	Pharmaceutical Chemistry	2017	International Journal of Pharmaceutical Sciences and Nanotechnology	ISSN: 0974-3278
5	Design And Development Of Modified Release Solid Oral Dosage Form (Tolcapone)	Dr. Hareesh Dara ,D. Siva Dinesh, Thatipelli Ravichander	Pharmacy Practice	2017	International journal of chemistry and pharmaceutical sciences	ISSN: 2321-3132
6	Evaluation of Analgesic And Anti-Inflamatory Activity of Citrus Limon Peel In Albino Wistar Rats.	Dr. Hareesh Dara, D. Siva Dinesh, Dr. Ravi Chander Thatipelli	Pharmacy Practice	2017	International Journal of Medicine and Pharmaceutical Sciences	ISSN: 2321-3132

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal - 506 005

E-ISSN: 0975-8232; P-ISSN: 2320-5148

IJPSR (2016), Vol. 7, Issue 12

(Research Article)

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 23 June, 2016; received in revised form, 29 July, 2016; accepted, 07 October, 2016; published 01 December, 2016

SYNTHESIS, CHARECTERIZATION AND ANTIMICROBIAL ACTIVITY OF 5-METHYL -2, 4-DIHYDRO-3H-PYRAZOL-3-ONE-4-(4-SUBTITUTED) BENZYLPIPERAZINE DERIVATIVES

Chidara Mahesh *[1] and Satla Shobha Rani [2]

Department of Pharmaceutical Chemistry [1], Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India.

Department of Pharmaceutical Chemistry [2], Center for Pharmaceutical Sciences, IST, JNTUH, Hyderabad, Andhra Pradesh, India.

Keywords:

Benzylpiperazine, Antimicrobial Activity, Anti Bacterial, Anti Fungal

Correspondence to Author:
Chidara Mahesh

Assistant Professor
Dept. of Pharmaceutical Chemistry
Vaagdevi Pharmacy College,
Bollikunta, Warangal, Telangana, India.

E mail: maheshchidara@gmail.com

ABSTRACT: Synthesis of 6-Methyl-2, 4-dihydro-3H-pyrazol-3-one- 4-(4-substituted) Benzylpiperazine derivatives IVP a-e was carried out by bromination of Ethyl aceto acetate (I) with KBr. The reaction was carried out in the presence of Hydrochloric acid and tolune to produce Bromo-ethyl aceto acetate (II), it is further condensed with substituted Benzylpiperazines in presence of ethanol to obtain condensed compound (III). This upon cyclization with excess of hydrazine hydrate will produce title compounds. All the title compounds IVP a-e were screened for possible antibacterial activity against *P. Vulgaris, S. Aureas, E. Coli, B. Subtillus* and antifungal activity against *Altenaria, Culvalaria, C. Albicans and A. Niger*. Among the compounds synthesized IVPb and IVPe demonstrated good antibacterial activity, IVb, IVc, and IVe showed good antifungal activity. The activities of the synthesized compounds are compared with the standard and other test compounds. The structures of synthesized compounds were established by elemental analysis, IR, H NMR and Mass spectral data.

INTRODUCTION: Benzylpiperazines and its derivatives are versatile type of ligands have attracted considerable pharmaceutical interest due to their antibacterial [1, 2, 3] antifungal [4, 5, 6] antitumor and anthelmintic [7] activities. Benzylpiperazines have drawn great interests for their high potential biological activity especially for their antitumor activity when linked with thiosemicarbazides increases their antimicrobial and antitumor activity [9].

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.7(12).5077-81

Article can be accessed online on: www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.7(12).5077-81

MATERIALS AND METHODS:

Chemistry: Melting points were determined using Thermonik Melting Point Apparatus (Campbell electronics, India) by capillary method and are uncorrected. Infrared (IR) spectra were taken on a Fourier Transform Infrared Spectrophotometer IR-Prestige 21 (Shimatzu Corporation, Japan) from 4000 to 400 cm-1 using KBr disks. 1 H-NMR spectra were recorded at 400 MHz in DMSO-d6 using a Bruker Avance 400 instrument (Bruker Instruments Inc., USA).

Chemical shifts were measured at d units (ppm) relative to Tetra-methylsilane (TMS). Fast-atom bombardment (FAB) mass spectra were recorded on a Jeol SX 102/DA-6000 mass spectrometer (Jeol Ltd. Akishima, Tokyo, Japan) using argon/xenon (6 kV, 10 mA) as FAB gas, m-nitrobenzyl alcohol as

www.sphinxsai.com

ChemTech

International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.10 No.3, pp 723-729, 2017

Optimization of Encapsulation Efficiency of Piperine in Soya-Lecithin Multilamellar Vesicles

Jithan V. Aukunuru[1,2,*], Chandrasekhar R. Bonepally[3]

[1]Mankind Research Center, Manesar, Haryana, India, 122050
[2] Technology Consultants, Hyderabad, India, 500098
[3]Vaagdevi College of Pharmacy, Ramnagar, India, 506001

Abstract : The objective of the study was to predict, optimize and generate surface contours for encapsulation efficiency of piperine in soya lecithin multilamellar vesicles (MLVs) using artificial neural network (ANN) and factorial design – multiple regression analysis (FD-MRA). Statistica Neural Network was used for ANN while the FD-MRA was performed using the computer program SAS. Nine model formulations were prepared. The formulation variables, the drug and the volume of hydration were taken as independent variables, and the percentage drug entrapment (PDE) was taken as a dependent variable. Experimental data was generated. ANN generated predicted values for the experimental data after several iterations. The best performed network was considered in the predictions. In case of FD-MRA, the prediction numbers were determined using the programming language SAS. ANN showed more error compared with FD-MRA.

Keywords : Optimization, response, surface, piperine, liposomes, error, neural, ANN, MLV and PBS.

*****

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal - 506 005

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal-506005

International Journal of Pharmacy and Biological Sciences
ISSN: 2321-3272 (Print), ISSN: 2230-7605 (Online)
IJPBS | Volume 6 | Issue 2 | APR-JUN | 2016 | 108-112
Original Research Article – Pharmaceutical Sciences

SYNTHESIS, CHARECTERISATION AND ANTI CANCER AND ANTIHELMINTHETIC ACTIVITY OF 5-METHYL -2, 4-DIHYDRO-3H-PYRAZOL-3-ONE-4-(4-SUBTITUTED) BENZYLPIPERAZINE DERIVATIVES

Chidara Mahesh[1]* & Satla Shobha Rani[2]
[1]Department of Pharmaceutical Chemistry, Vaagdevi Pharmacy College, Bollikunta, Warangal.
[2]Department of Pharmaceutical Chemistry, Center for Pharmaceutical Sciences, IST, JNTUH, Hyderabad

*Corresponding Author Email: maheshchidara@gmail.com

ABSTRACT

Synthesis of 6-Methyl-2, 4-dihydro-3H-pyrazol-3-one- 4- (4-substituted) Benzylpiperazine derivatives IVP a-e was carried out by bromination of Ethyl aceto acetate (I) with KBr. The reaction was carried out in the presence of Hydrochloric acid and tolune to produce Bromo-ethyl aceto acetate (II), it is further condensed with substituted Benzylpiperazines in presence of ethanol to obtain condensed compound (III). This upon cyclization with excess of hydrazine hydrate will produce title compounds. All the title compounds IV a-j were screened for possible antihelminthic activity against and anti cancer activity against. Among the compounds synthesized IVa and IVh demonstrated good antihelminthic activity and IVa, IVd, and IVh showed good anticancer activity. The activities of the synthesized compounds are compared with the standard and other test compounds. The structures of synthesized compounds were established by elemental analysis, IR, H NMR and Mass spectral data.

KEY WORDS

Benzylpiperazine, antihelminthic activity, anticancer activity.

INTRODUCTION

Benzylpiperazines and its derivatives are versatile type of ligands have attracted considerable pharmaceutical interest due to their antibacterial[1,2,3] antifungal [4,5,6] antitumor and anthelmintic[7] activities . Benzylpiperazines have drawn great interests for their high potential biological activity especially for their antitumor activity when linked with thiosemicarbazides increases their antimicrobial and antitumor activity[8].

MATERIALS AND METHODS

Chemistry: Melting points were determined using Thermonik Melting Point Apparatus (Campbell electronics, India) by capillary method and are uncorrected. Infrared (IR) spectra were taken on a Fourier Transform Infrared Spectrophotometer IR-Prestige 21 (Shimatzu Corporation, Japan) from 4000 to 400 cm-1 using KBr disks. 1 H-NMR spectra were recorded at 400 MHz in DMSO-d6 using a Bruker Avance 400 instrument (Bruker Instruments Inc., USA). Chemical shifts were measured at d units (ppm) relative to Tetra-methylsilane (TMS). Fast-atom bombardment (FAB) mass spectra were recorded on a Jeol SX 102/DA-6000 mass spectrometer (Jeol Ltd. Akishima, Tokyo, Japan) using argon/xenon (6 kV, 10 mA) as FAB gas, m-nitrobenzyl alcohol as matrix, and 10 kV as accelerating voltage at room temperature. Elemental analysis was performed on a Vario EL III Elemental Analyser (Elementar, Germany) using sulfanilamide as standard. All chemicals were purchased from Merck, Spectrochem, or CDH, India. Solvents were of reagent grade and were purified and dried by standard procedure. Reactions were monitored by thin-layer chromatography on silica gel plates in either iodine or UV chambers. Intermediates were characterized by IR spectroscopic analysis and Elemental Analysis for CHNS. In the elemental analysis, the observed values were within ±0.4 % of

Asian Journal of Medical and Pharmaceutical Sciences

Journal Home Page: www.pharmaresearchlibrary.com/ajmps

Research Article Open Access

Formulation Development and Characterization of Cefixime Hard Candy Lozenges and Troches

D. Radhika[1], G. Mahesh*[2]

[1]Department of Pharmaceutics, Vagdevi Pharmacy College, Warangal, Telangana, India
[2]Department of Pharmaceutical Chemistry, Avanthi Institute of Pharmaceutical Sciences, Hyderabad, Telangana, India

ABSTRACT

The present investigation aims to design, prepare and evaluate the lozenges and troches of Cefixime using various polymers like HPMC E50, HPMC 15cps, guargum and PVP K30 in different concentrations. The lozenges were prepared by heating and congealing method and the troches were prepared by direct compression method. All the prepared formulations were subjected to various evaluation parameters like hardness, content uniformity, friability, weight variation &*in-vitro* dissolution. The prepared formulations have a hardness of 8 to 12kg/cm^2 (Lozenges), 3 to 5kg/cm^2 (Troches), free from gritty particles. The optimized formulations of lozenges using each polymer mentioned above showed *in-vitro* drug release of 96.6% to 97.75%. The optimized formulations of troches using each polymer mentioned above showed *in-vitro* release of 97.8% to 98.4%. The lozenges and troches can provide an attractive and alternative formulations in the treatment of bacterial infections for paediatric, geriatric and dysphagic patients.

Keywords: Cefixime, Lozenges, Troches, HPMC E50, HPMC 15cps, PVP K30 and guargum.

ARTICLE INFO

CONTENTS

1. Introduction 86
2. Experimental 87
3. Results and discussion 87
4. Conclusion 89
5. References 92

Article History: Received 1 October 2017, Accepted 11 November 2017, Available Online 19 December 2017

*Corresponding Author
G. Mahesh
Department of Pharmaceutical Chemistry,
Avanthi Institute of Pharmaceutical
Sciences, Hyderabad, Telangana, India
Manuscript ID: AJMPS3483

PAPER-QR CODE

Citation: G. Mahesh. Analytical Method Development and Validation for Sacubitril and Valsartan in Combine Pharmaceutical Dosage Forms by RP-HPLC. *A. J. Med. Pharm, Sci.*, 2017, 5(2). 86-92.

1. Introduction

The word "Lozenge" is derived from French word "Losenge" which means adiamond shaped geometry having four equal sides. Lozenges are solid unit dosage preparations that are intended to dissolve in mouth

CODEN (USA): IJCPNH | ISSN: 2321-3132

International Journal of Chemistry and Pharmaceutical Sciences

Journal Home Page: www.pharmaresearchlibrary.com/ijcps

Research Article Open Access

Design and Development of Modified Release Solid Oral Dosage Form (Tolcapone)

Dr. Hareesh Dara*[1], D. Siva Dinesh, Thatipelli Ravichander

St John College of Pharmcy, Hasamparthy, Hanamkonda, Telangana, India

ABSTRACT

The present research work focuses on design and development of modified Release solid oral dosage form. Tolcapone: based on the assessment of various parameters, in vitro drug dissolution profile and drug kineties, hf16 was found to be optimized formulation. The drug release from hf16 was found to fit zero order and best fitted to higuchi's model confirming to be the diffusion assisted mechanism. FT-IR & DSC studies revealed that there was no interaction between the drug and polymers used in the formulations. *In vivo* bioavailability studies were conducted for optimized tolcapone trilayer tablets and marketed product, *in vivo* studies indicating that the optimized tolcapone formulation was shown sustained release patterns where marketed product was shown immediate release. So the optimized formulation was shown significant plasma concentrations with sustained release and maintained for 24 h. Based on the mucoadhesive study, the optimized dosage form adhesive to gastro intestinal tract more than 12 hours.

Keywords: Tolcapone, FT-IR, DSC, mucoadhesive study

ARTICLE INFO

CONTENTS

1. Introduction 115
2. Materials and Method 116
3. Results and Discussion 117
4. Conclusion 120
5. References 120

Article History: Received 11 February 2017, **Accepted** 28 March 2017, **Available Online** 27 May 2017

***Corresponding Author**
Dr. Hareesh Dara
St John College of Pharmcy,
Hanamkonda, Telangana, India
Manuscript ID: IJCPS3310

PAPER-QR CODE

Citation: Harresh Dara, *et al.* Design and Development of Modified Release Solid Oral Dosage Form (Tolcapone). *Int. J. Chem, Pharm, Sci.*, 2017, 5(5): 115-120.

1. Introduction

Requirement for the study: The need for the present investigation is to develop an Entacapone tablets and Tolcapone tablets controlled release formulation that releases the API release independent of its concentration. Entacapone marketed tablets found the release of drug in a controlled manner but the drug release is concentration dependent. Hence, the study was attempted with a plan to design Entacapone tri-layered matrix tablets and Tolcapone tri-layered matrix tablets by using Geo

VAAGDEVI PHARMACY COLLEGE

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal-506005

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal - 506 005

International Journal of Chemistry and Pharmaceutical Sciences

Journal Home Page: www.pharmaresearchlibrary.com/ijcps

Research Article Open Access

Evaluation of Analgesic and Anti-Inflammatory Activity of *Citrus Limon* Peel in Albino Wistar Rats

Dr. Hareesh Dara*, D Siva Dinesh, Dr. Thatipelli Ravichander

St John College of Pharmcy, Hasanparthy, Hanamkonda, Telangana, India

ABSTRACT

The lemon [*Citrus limon* (L.) Rutaceae] exhibits many important natural chemical components, including citric acid, ascorbic acid, minerals and phenolic compounds, such flavonoids. Although their biological properties have always been associated with their content of vitamin C, it has recently been shown that flavonoids and other nutrients and non-nutrients (vitamins, minerals, dietary fiber, essential oils and carotenoids). Therefore, their health-promoting effects, such as obesity, diabetes, blood lipid lowering, cardiovascular diseases, brain disorders and certain types of cancer, have been associated with their contents, especially vitamin C and flavonoids, due to their natural antioxidant characteristics. Therefore, this work was designed based on phytochemical constitution such as flavonoids in *Citrus limon* peel extracts because flavonoids are rich in the treatment for evaluation of analgesic and anti-inflammatory activity in rats. Fresh and crushed peel of *Citrus limon* were collected and then extracted with different solvents such as water, alcohol and methanol at the doses of 100 mg/kg, 200 mg/kg body weight in experimental animal models. Analgesic activity was evaluated by Hot-plate and tail –flick method in albino wistar rats; acute and chronic anti-inflammatory activity was evaluated by carrageenan-induced paw oedema and formalin-induced paw edema in Wistar albino rats. Diclofenac sodium and indomethacin were employed as reference drugs for analgesic and anti-inflammatory studies, respectively. In the present study, the aqueous, alcoholic and methanolic extracts of *Citrus limon* demonstrated significant analgesic and anti-inflammatory activities in the tested models.

Keywords: citrus limon, hot-plate, tail-flick.

ARTICLE INFO

CONTENTS

1. Introduction.....166
2. Materials and Method.....166
3. Results and Discussion.....167
4. Conclusion.....168
5. References.....168

Article History: Received 21 March 2016, Accepted 25 May 2016, Available Online 27 June 2017

***Corresponding Author**
Dr. Hareesh Dara
St John College of Pharmcy,
Hasanparthy, Hanamkonda, Telangana.
Manuscript ID: IJCPS3307

PAPER-QR CODE

Citation: Hareesh Dara, *et al.* Evaluation of Analgesic and Anti-Inflammatory Activity of *Citrus Limon* Peel in Albino Wistar Rats. *Int. J. Chem, Pharm, Sci.*, 2017, 5(6): 165-169.

Viswambhara Educational Society

VAAGDEVI PHARMACY COLLEGE

Approved by AICTE, PCI-New Delhi & Affiliated to JNTUH
P.O.BOLLIKUNTA, WARANGAL-506 005(Telangana State)

3.3.2.1 Publications for the Academic Year 2017-2018

S.No	Title of Paper	Name of the Author/s	Department of the Teacher	Year of Publication	Name of the journal	ISBN/ISSN Number
1	Evaluating the Anti-inflammatory Potential of Isolated Constituents from Seeds of Caesalpinia Crista	M. Swapna Reddy, B. RamyaKuber	Pharmacognosy	2017	Journal of Pharma Research	ISSN: 2319-5622
2	Evaluation Of Antihyperglycemic And Hypolipidemic Action Of Euphorbia Caducifolia Latex Powder On Alloxan- Induced Diabetic Rats	Farmiza Begum , V. Usha, Dr. T. Ravi Chander , Rajesh Dasi	Pharmacy Practice	2018	International Research Journal of Pharmacy and Medical Sciences	ISSN : 2581-3277
3	Rosuvastatin Calcium Loaded Novel Nano Delivery Systems for Enhanced Oral Bioavailability	Phanindra A , Nagaraju A , Achyuth K , Kumara Swamy	Pharmaceutics	2018	Scholars Bulletin	ISSN(Online): 2412-897X ISSN(Print): 2412-9771
4	Role of Solid Lipid Nanoparticles in Oral Bioavailability Enhancement of Antihypertensive Drugs	Kumara Swamy S , Sravanthi S	Pharmaceutics	2018	Saudi Journal of Medical and Pharmaceutical Sciences	ISSN(Print): 2413-4929 ISSN(Online): 2413-4910
5	Neuroprotective Effect Of Cucumis Sativus On Cerebral Ischemia Induced Cognitive Impairment	Mary Tryphena Gottemukkala , Farmiza Begum , Sandeep Vangala , T. Ravi Chander	Pharmacy Practice	2018	World Inventia Publishers Journal of Pharmacology	ISSN(Online): 22023192

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal - 506 005

World Inventia Publishers

Journal of PharmaResearch
http://www.jprinfo.com/

Vol. 6, Suppl 2, 2017 ISSN: 2319-5622 USA CODEN: JPROK3

Research Article Full Proceeding Paper

EVALUATING THE ANTIINFLAMMATORY POTENTIAL OF ISOLATED CONSTITUENTS FROM SEEDS OF *CAESALPINIA CRISTA*

M. Swapna Reddy[1,2]*, B. RamyaKuber[1]

*[1] *Sri PadmavathiMahilaVisvavidyalayam, Tirupathi, Andhra Pradesh, INDIA.*
[2]Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, INDIA.

Received on: 05-10-2017; Revised and Accepted on: 08-11-2017

ABSTRACT

Three constituents - steroid, saponin and terpenoid were isolated from seeds of Caesalpinia crista belonging to family Caesalpiniaceae by using chromatographic techniques. Their structures were characterized on the basis of NMR, MS and IR spectroscopic data. All the isolates were evaluated for anti-inflammatory effect against carrageenan induced rat paw oedema method. The constituents exhibited potent anti-inflammatory activity.

KEYWORDS: *Anti inflammatory activity, carrageenan induced rat paw oedema, Caesalpinia crista.*

INTRODUCTION

Caesalpinia crista belonging to family *Caesalpiniaceae/Fabaceae* is a prickly shrub widely distributed all over the world as shown in figure 1.The bitter principles Bonducin and Natin are the primary constituent of *Caesalpinia crista* apart from linoleic acid, fatty acid, beta sitosterol and different diterpenes which mainly believed to be responsible for its wide therapeutic action. The plant has been recommended for the treatment of various diseases and disorders such as Antispasmodic, Malarial fever, leucorrhoea, abdominal pain, rheumatoid, arthritis, diabetes, cystic fibrosis, amenorrhoea[1-4].

Fig. 1:*Caesalpinia crista*

Objective: The aim of present investigation is to isolate constituents from seeds of *Caesalpinia crista* and to evaluate the anti-inflammatory potential of isolated constituents.

***Corresponding author:**
M. Swapna Reddy
Sri PadmavathiMahilaVisvavidyalayam,
Tirupathi, Andhra Pradesh, INDIA.
** E-Mail: swapnareddy81mpharm@gmail.com*

METHODOLOGY[5-7]

Preparation of extract:

In this study three compounds steroid, saponin and terpenoid were isolated from the seeds of *Caesalpinia crista*. Dried seeds (1.2 kg) were cut and defatted using n-hexane (3 × 2 L), then extracted with ethyl acetate (4 × 2 L). The ethylacetate extract was evaporated and concentrated under reduced pressure to afford a dark brown residue (14.1 g)

Phytochemical screening of extract:

Freshly prepared extract was subjected to standard phytochemical screening to ensure the presence of the following phytoconstituents: terpenoids, diterpenes, sesquiterpenes, steriods, saponins, fixed oils, fats, and carbohydrates.

Isolation of active constituents: Column chromatographic separations were performed on silica gel 60 (0.04–0.063 mm, Merck). TLC was performed on precoated TLC plates with silica gel 60 (layer thickness 0.2 mm, Merck). TLC spots were visualized by exposure to iodine vapours and UV radiation.

Characterization: The column was eluted with mixture of chloroform n Hexane. Various fractions were collected separately and matched by TLC to check homogeneity. Similar fractions having the same R_f values were combined and crystallized. The Greenish yellow compounds were eluted by column chromatography in the fractions of ethylacetate extract (Chloroform: n hexane) (30:70), (60:40), (80:30). The structures of isolated compounds were elucidated on the basis of its IR, 1D, 2D, NMR and MASS spectral data. The FTIR data is shown in table 1.

Anti-Inflammatory Activity of *Caesalpinia Crista*:[8,9]

In vivo anti-inflammatory activity:

Paw oedema was induced on each rat by injecting 0.1 ml of carrageenan on physiological saline to the left hind paw. The isolates at different concentrations were administered orally 30 minutes prior to carrageenan administration. Paw volumes were measured at 60, 120, 180 and 240 minutes by mercury displacement method using plethysmograph. The percentage inhibition of paw volume in isolated treated groups was compared with control. Diclofenac sodium (5 mg/kg) was used as the standard

International Research Journal of Pharmacy and Medical Sciences
ISSN (Online): 2581-3277

Evaluation of Antihyperglycemic and Hypolipidemic Action of *Euphorbia Caducifolia Latex* Powder on Alloxan- Induced Diabetic Rats

Farmiza Begum[1]*, V. Usha[2], Dr. T. Ravi Chander[1], Rajesh Dasi[3]
[1]Department of Pharmacology, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India-506005
[2]Department of Pharmacognosy, Vaagdevi College of Pharmacy, Ramnagar, Hanamkonda, Warangal-506001
[3]Vaagdevi Pharmacy College, Bollikunta, Warangal

Abstract—
Background: *The study of Plants having antihyperglycaemic and hypolipidaemic activities may give new approach in the treatment of diabetes with lesser side effects.*
Objective: *The study was intended to evaluate the antihyperglycemic and hypolipidemic action of Euphorbia caducifolia latex powder in alloxan-induced Diabetic Rats.*
Materials and Methods: *Diabetes was induced in albino rats by using alloxan monohydrate (150 mg/kg). Rats were divided into five groups of six animals each. First group served as non-diabetic control, second group as diabetic control, third group as standard and was treated with Nopal. Group 4 and 5 received 100 and 200 mg/kg body weight of ECLP. Blood samples were analyzed for blood glucose on day 1, 7, 14 and lipid profile on day 21.*
Results: *The ECLP showed significant reduction ($P<0.01$) in blood glucose level and serum lipid profile levels with 200 mg/kg body weight in alloxan-induced diabetic rats as compared with the control.*
Conclusion: *It is concluded that ECLP is effective in controlling blood glucose levels and in improving lipid profile in diabetic rats.*

Keywords— *Alloxan, Antihyperglycemic, Diabetes Mellitus, Hypolipidemic.*

I. Introduction

Diabetes Mellitus is a heterogeneous metabolic disorder characterized by altered carbohydrate, lipid, and protein metabolism which causes hyperglycemia resulting from insufficient insulin secretion, insulin action or both. The increasing incidence of the disease worldwide may be due to sedentary life style, unhealthy diet, obesity and other predisposing risk factors.[1,2] It is projected to become of the world's main disablers and killers, as the number of people with diabetes multiplies worldwide. It is one of the refractory diseases identified by Indian Council of Medical Research for which an alternative medicine is a need for the treatment. Diabetes has become a growing problem in the contemporary world.

Due to the etiopathogenesis of diabetes mellitus, harmful side effects with synthetic drugs, the inability of existing modern therapies to control all the pathological aspects of the diabetic disorder, enormous cost of modern drugs as well as the poor availability of the advanced therapies for many rural populations in developing countries.[2] Alternative strategies to current pharmacotherapy of diabetes mellitus are urgently needed. The use of medicinal plants is, therefore, going to be stepped up as primary health care in diabetic mellitus to make a breakthrough of diabetic treatment. Recent experiences are proving the natural drugs as relatively non-toxic, safe and even free from serious side effects.[3,4]

The main objective of the study was to assess the antihyperglycemic action and hypolipidemic action of *Euphorbia caducifolia* Latex powder belonging to the family Euphorbiaceae. It is known as Thor, Danda-thor in Hindi and Kattejemudu in Telugu. *Euphorbia caducifolia* is a major species in rocky desert areas of western and central India and Pakistan. *Euphorbia caducifolia* grows in stony ground on barren coastal plains and in the hilly tracts of the Indian desert on well-drained limestone soils as well on sandy soil, and therefore the substrate varies from slightly alkaline to slightly acidic. *Euphorbia caducifolia* (a.k.a. Leafless Milk Hedge) is a great looking, sparsely spiny columnar, many-stemmed, cactus-like, shrub forming dense. Leaves are having leaf blades, oval, fleshy, variable size, 2.5-8 cm long and 2-5 cm broad. Flowers are yellowish rarely reddish about 5mm in diameter with oblong and joined nectar glands.

Many herbaceous Euphorbia species have traditionally been used as a purgative or laxative. The roots of the plant are used as antidote and germicidal. The latex of this plant is used as Anti-gout, Anti-asthmatic, Anti-rheumatic, Counter-Irritant, Emetic, Expectorant, Rubefacient, Wound healing. Although many compounds have been reported from the genus, Euphorbia, Previous phytochemical investigations revealed the occurrences of euphol, tirucallol, cycloartenol, methyl octadecenoate, and 3,7,11,15-tetramethyl-2-hexadecene-1-ol (GCMS Analysis).[5,6,7]

In the current literature, there is not much data concerning the effect of *Euphorbia caducifolia* on the blood glucose level and parameters used in lipid profile. Therefore, the present study has been planned to investigate the antihyperglycemic action and hypolipidemic action of latex powder in alloxan induced diabetic rats.

Farmiza Begum, V. Usha, Dr. T. Ravi Chander, and Rajesh Dasi, "Evaluation of Antihyperglycemic and Hypolipidemic Action of Euphorbia Caducifolia Latex Powder on Alloxan- Induced Diabetic Rats," International Research Journal of Pharmacy and Medical Sciences (IRJPMS), Volume 1, Issue 5, pp. 26-31, 2018.

Scholars Bulletin
An Official Publication of "Scholars Middle East Publishers"
Dubai, United Arab Emirates
Website: http://scholarsbulletin.com/

(Pharmaceutics)
ISSN 2412-9771 (Print)
ISSN 2412-897X (Online)

Rosuvastatin Calcium Loaded Novel Nano Delivery Systems for Enhanced Oral Bioavailability

Phanindra A[1], Nagaraju A[1], Achyuth K[2], Kumara Swamy S[1*]
[1]Department of Pharmaceutics, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India
[2]Department of Technology, Srinidhi College of Engineering, Hyderabad, Telangana, India

***Corresponding author**
Kumara Swamy S
Email: kumar4katy@gmail.com

Article History
Received: 13.05.2018
Accepted: 24.05.2018
Published: 30.05.2018

DOI:
10.21276/sb.2018.4.5.13

Abstract: Rosuvastatin calcium is hypolipidemic drug and has low oral bioavailability of about 20% due to poor aqueous solubility and hepatic first-pass metabolism. These are major boundaries inefficient delivery of RC by oral route. Several delivery approaches are known to moderate the difficulties of solubility and increase the oral bioavailability of RC. Among numerous approaches, nanotechnology-based delivery of RC has prospective to overcome the challenges associated with the oral administration. This review focuses on various nano-based delivery systems such as nanoparticles, lipid nanoparticles, SEDDS and SNEDDS and tried for improving the aqueous solubility, dissolution and subsequently bioavailability of RC upon oral administration. Of all, solid lipid nanoparticles appear to be promising delivery system, based on current reported results, for delivery of RC, as this system improved the oral bioavailability and possessed prolonged pharmacodynamic effect.

Keywords: Rosuvastatin calcium, oral bioavailability, nano carrier systems, pharmacokinetic, pharmacodynamics.

INTRODUCTION

Rosuvastatin calcium (RC) is a competitive inhibitor of HMG-CoA reductase [1]. HMG-CoA reductase catalyzes the conversion of HMG-CoA to mevalonate, an early rate-limiting step in cholesterol biosynthesis [2].

Chemical RC is bis-[(E)-7-[4-(4-fluorophenyl)-6-isopropyl-2-[methyl (methyl sulfonyl) amino] pyrimidin-5-yl] (3R,5S)-3,5-dihydroxyhept-6-enoic acid] calcium salt. The Log P (partition coefficient) of RC was 2.6 with melting range of 122-131°C.

RC acts primarily in the liver. Decreased hepatic cholesterol concentrations stimulate the up regulation of hepatic low density lipoprotein (LDL) receptors which increases hepatic uptake of LDL. Rosuvastatin also inhibits hepatic synthesis of very low density lipoprotein (VLDL). The overall effect is a decrease in plasma LDL and VLDL. The BA of RC is approximately 20% as it is metabolized by the liver via CYP 450 isoenzyme. Absolute bioavailability is approximately 20%. Peak plasma concentrations attained within 3-5 h after administration. Mean volume of distribution at steady-state of rosuvastatin is approximately 134 liters and is 88% bound to plasma proteins, mostly albumin. This binding is reversible and independent of plasma concentrations. RC is not extensively metabolized. Only ~10% is excreted as metabolite. CYP450 is primarily responsible for the formation of rosuvastatin's major metabolite, N-desmethyl rosuvastatin. N-desmethyl rosuvastatin has approximately 50% of the pharmacological activity of its parent compound in vitro [3].

RC is approved for the treatment of high LDL cholesterol (dyslipidemia), total cholesterol (hypercholesterolemia), and/or triglycerides (hypertriglyceridemia) [4]. In February 2010, rosuvastatin was approved by the FDA for the primary prevention of cardiovascular events (Astra Zeneca).

RC has very low aqueous solubility and first-pass metabolism and were considered as major shortcoming in the therapeutic application and efficacy of RC as conventional oral dosage form. It has reported log P of 2.6. Low solubility of RC across the physiological pH range is reported to result in incomplete absorption from the GIT. Based on its solubility in physiologically relevant pH conditions and absorption characteristics, it was classified in the biopharmaceutics Classification System (BCS) as a class II drug. To overcome poor aqueous solubility, hepatic first-pass metabolism and to enhance oral bioavailability, nanocarriers are gaining tremendous interest and have shown remarkable advantages over

Saudi Journal of Medical and Pharmaceutical Sciences
Scholars Middle East Publishers
Dubai, United Arab Emirates
Website: http://scholarsmepub.com/

ISSN 2413-4929 (Print)
ISSN 2413-4910 (Online)

Role of Solid Lipid Nanoparticles in Oral Bioavailability Enhancement of Antihypertensive Drugs

Kumara Swamy S*, Sravanthi S
[1]Assistant Professor, Department of Pharmaceutics, Vaadgevi Pharmacy College, Warangal – 506005, Telangana, India
[2]Department of Pharmaceutics, Vaadgevi Pharmacy College, Warangal – 506005, Telangana, India

Review Article

***Corresponding author**
Kumara Swamy S

Article History
Received: 01.06.2018
Accepted: 05.06.2018
Published: 30.06.2018

DOI:
10.21276/sjmps.2018.4.6.7

Abstract: Solid lipid nanoparticles (SLNs) are at the rapidly developed field of nanotechnology with a few potential applications in drug delivery, clinical medication and research, and additionally in other distorted sciences. Because of their small size-subordinate properties, lipid nanoparticles offer the likelihood to grow new therapeutics. The capacity to loaded drugs into nanocarriers offers another model in drug delivery that could be utilized for optional and tertiary levels of drug targeting on. Consequently, SLNs hold extraordinary advantage for achieving the objective of controlled and site specific drug delivery and henceforth have pulled in wide consideration of analysts. The current review describes the role of solid lipid nanoparticles on the pharmacokinetics of poorly soluble antihypertensive drugs. In the event that suitably examined, solid lipid nanoparticles may open new areas in treatment of hypertension with improved oral delivery.

Keywords: Solid lipid nanoparticles, antihypertensive, drug delivery, pharmacokinetics, poor soluble, oral bioavailability.

INTRODUCTION

Hypertension is a cardiovascular disorder, resulting in the elevated blood pressure. As per WHO, Geneva, in 2008, hypertension caused about 45% death due to ischemic coronary illness and 51% death as a result of stroke. In 1980, 600 million individuals were experiencing hypertension while in 2008 this figure was raised to 1 billion raising a major worry for its management [1]. Several studies over the past have shown an increasing prevalence of hypertension in India [2-4]. Kearney *et al.*, [5] in their paper predicted that the burden of hypertension in India is expected to double from 118 million in 2000 to 213.5 million by 2025.

For an adult of 45 years old without hypertension, the 40-year chance for creating hypertension is 93% for African Americans, 92% for Hispanics, 86% for whites, and 84% for Chinese grown-ups. In 2010, hypertension was the main source of death and incapacity balanced life-years around the world, and a more prominent supporter of occasions in ladies and African Americans contrasted and whites. Frequently ignored, the hazard for CVD increments in a log-direct form; from SBP levels <115 mm Hg to >180 mm Hg, and from DBP levels <75 mm Hg to >105 mm Hg. A 20 mm Hg higher SBP and 10 mm Hg higher DBP are each related with a multiplying in the danger of death from stroke, coronary illness, or other vascular malady. In people ≥30 years old, higher SBP and DBP are related with expanded hazard for CVD, angina, myocardial dead tissue (MI), heart disappointment (HF), stroke, fringe blood vessel malady, and stomach aortic aneurysm. SBP has reliably been related with expanded CVD [6].

Though there are plethora of conventional antihypertensive dosage forms, majority of them fail to treat hypertension due to their poor aqueous solubility thereby resulting in poor bioavailability (BA) [7]. Some of the drugs used to treat hypertension are the substrate of P-gp and exhibit significant first-pass metabolism leading to reduced bioavailability. The other challenges associated with antihypertensive therapy are their short half-life and high dosing frequency. One way to overcome those challenges associated to dosing frequency is to design an extended release formulation. On this regard, nanomedicine or nano-therapeutics provide a new avenue in delivering therapeutics to pathological sites and residing on it for increased period of time. Furthermore, nanomedicine also bypasses the hepatic first-pass metabolism, P-gp mediated efflux and target specificity allowing therapeutics to have extended circulation. In the early 2000s, various types of novel drug delivery systems such as buccal [8-10], gastro retentive [11-14], osmotic controlled [15, 16], solid dispersion [17] and liquisolid compacts [18].

RATIONALE FOR USING NANOCARRIERS

Oral route is the most favored route for the organization of the therapeutics. Be that as it may,

World Inventia Publishers

Journal of Pharmacology

http://www.worldinventiapublishers.com/JP/

Vol. 3, Issue 3, 2018

Research Article

NEUROPROTECTIVE EFFECT OF *CUCUMIS SATIVUS* ON CEREBRAL ISCHEMIA INDUCED COGNITIVE IMPAIRMENT

Mary Tryphena Gottemukkala [1]*, Farmiza Begum [2]*, Sandeep Vangala [1], T. Ravi Chander [2]

[1] *Department of Pharmacology, Vaagdevi College of Pharmacy, Ramnagar, Hanamkonda, Warangal - 506001 Telangana, INDIA.*

[2] *Department of Pharmacology, Vaagdevi Pharmacy College, Bollikunta, Warangal-506001, Telangana, INDIA.*

Received on: 02-07-2018; Revised and Accepted on: 21-07-2018

ABSTRACT

Cognitive impairment might be due to degeneration of neurons caused by cerebral ischemia. In this present study, we have used Cucumis sativus peel extract to study its neuroprotective effect on cerebral ischemia induced cognitive impairment in male wistar rats. Toxicity tests were done on the drug according to OECD guidelines 423. The animals were pretreated with three different doses (100mg/kg, 200mg/kg, and 400mg/kg of body weight) of drug extract for a period of 18 days. Cerebral ischemia was induced by bilateral common carotid artery occlusion for 30min followed by reperfusion. Cognitive functions of animals were evaluated by rectangular maze test, morris water maze test and locomotor activity test. Biochemical tests were also conducted such as catalase activity test and DPPH activity test to know its antioxidant activity. The protective treatment with C. sativus was associated with control of the free radicals induced by reperfusion. This study demonstrates that C.sativus had potential therapeutic effects on improving the cognitive function in rats. The effect of the drug was found to be increasing as the doses were increasing. The results of the drug were compared with the disease control and found to be significant ($p<0.001$).

KEYWORDS: *Cucumis sativus, Neuroprotection, Cerebral ischemia, Antioxidant activity.*

INTRODUCTION

Ischemic stroke begins with severe focal hypoperfusion, but cerebral injury continues over hours or even days [1]. Stroke is the third leading cause of death in industrialized countries [2] and the most frequent cause of permanent disability in adults worldwide [3]. The most common cause of stroke is the sudden occlusion of a blood vessel by a thrombus or embolism, resulting in an almost immediate loss of oxygen and glucose to the cerebral tissue [4]. Focal hypoperfusion restricts the delivery of essential substrates and causes the brain cells' normal process for adenosine triphosphate (ATP) production for energy to fail which leads to activation of Ca^{+} channel thereby causing excitotoxicity, oxidative stress and the reactive oxygen species produced by oxidative stress such as superoxide, hydroxyl radical, hydrogen peroxide and peroxinitrite radical play an important role in neuronal loss by triggering apoptosis [5].

Medicinal plants are widely and successfully used on every continent. In Asia, the practice of herbal medicine is extremely well established and documented Plants, plant parts and plant products served as the materials for the preparation of medicine and these medicinal plants and plant parts constitute an important natural wealth of a country. They play a significant role in primary health care service to rural people [6].

***Corresponding author:**
Mary Tryphena Gottemukkala
Department of Pharmacology,
Vaagdevi College of Pharmacy,
Ramnagar, Hanamkonda, Warangal - 506001,
Telangana, INDIA
* E-Mail: gtryphena@gmail.com, farmiza.begum@gmail.com

DOI: https://doi.org/10.5281/zenodo.1318533

Cucumbers (*Cucumis sativus*) are botanically categorized as berries. Cucumbers are scientifically known as *Cucumis sativus* and belong to the same botanical family as melons (including watermelon and cantaloupe) and squashes (including summer squash, winter squash, zucchini and pumpkin). *Cucumis sativus*, which belong to the Cucurbitaceae, is now widely planted in the temperate and tropical zones [7]. It is one of the most important vegetable and their peels have been used traditionally in India for making pickles. The consumption of vegetables has been found to be associated with lowering of the diseases as they contain a large amount of phenolic compounds, antioxidants and flavonoids [8].

In Ayurvedic systems of medicine, *Cucumis sativus* has been attributed to several medicinal properties. Plant is also used for jaundice, bleeding disorders and anuria. Seeds are highly nourishing [9]. Till date present study on plant represents variety of pharmacological activities like anticancer [10], anthelmintic [11], antimicrobial [12-14], hypolipidemic [15], antiulcer [16-17], analgesic and antioxidant [18].

The main purpose of this study is to investigate the neuroprotective effect of Cucumis sativus peel extract and its antioxidant activity in cerebral ischemia induced cognitive impairment.

MATERIALS AND METHODS

Animals:

Male Wister albino rats weighing 200-250 g were used in the present study. They had free access to food and water and were maintained under standard laboratory conditions with alternating light and dark cycles of 12 h each. They were acclimatized to laboratory conditions for 2 days before behavioural studies. All the readings were taken during the same time of the day, that is, between 10 am and 2 pm [19]. The experiments were planned after the approval of Institution Animal Ethical Committee (IAEC), Vaagdevi College of

Viswambhara Educational Society

VAAGDEVI PHARMACY COLLEGE

Approved by AICTE, PCI-New Delhi & Affiliated to JNTUH
P.O.BOLLIKUNTA, WARANGAL-506 005(Telangana State)

S.No	Title of Paper	Name of the Author/s	Department of the Teacher	Year of the Publication	Name of the Journal	ISBN/ISSN Number
1	Antiplasmodial Activity of Caesalpinia Crista Seed Extracts	M. Swapna Reddy, B. Ramyakuber	Pharmacognosy	2018	Journal of Drug Delivery and Therapeutics	ISSN : 2250-1177
2	Anti-Inflammatory Activity Of Ethanolic Extract Of Leaves Of Aganosma Cymosa On Formalin Induced Paw Edema In Wistar Rats	Farmiza Begum, T. Ravi Chander , P. Anitha , B. Keerthi	Pharmacy Practice	2018	World Journal of Pharmacy and Pharmaceutical Sciences	ISSN : 2278 – 4357
3	Recurrent Attack of Metformin Induced Bullous Pemphigoid	Pravalika Lashkar, Pavani Thota, Ravi Chander Thatipelli and Shalini Reddy Polepalli	Pharmacy Practice	2019	Skin Diseases and Care	
4	An Approach to Patient with Chorea: A Case Report	sadi Shiva Prasad, Thatipelli Ravi Chander, Farmiza Begum, Sandela Anjith Kumar, Nagabelli Nithesh	Pharmacy Practice	2019	Indian Journal of Pharmacy Practice	ISSN : 2278 – 4357
5	Guillain Barre Syndrome and its Variants: A Case Report on Acute Motor - Sensory Neuropathy	Pavani T, Ravi Chander T, Shalini Reddy P and Bhaskar D	Pharmacy Practice	2019	Journal of Neurological Disorders	ISSN: 2329-6895

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal - 506 005

Viswambhara Educational Society
VAAGDEVI PHARMACY COLLEGE
Approved by AICTE, PCI-New Delhi & Affiliated to JNTUH
P.O.BOLLIKUNTA, WARANGAL-506 005(Telangana State)

S.No	Title of Paper	Name of the Author/s	Department of the Teacher	Year of the Publication	Name of the Journal	ISBN/ISSN Number
6	Evaluation Of Wound Healing and Antiinflammatory Activities of Leaves of Ziziphus oenoplia	Anitha Potaraju, Kumara Swamy Samanthula and Kamal Yadav Gadda	Pharmaceutics	2019	International Journal of Chemical Sciences	ISSN: 0972-768X
7	Parenteral Administered Sustained Release Piperine Microparticles Intended For Treatment of Liver Fibrosis	B. Chandra Shekhar Reddy , Krishnaveni Bommineni and Jithan Aukunur	Pharmaceutics	2019	International Journal of Pharmaceutical Sciences and Research	ISSN(Online): 0975-8232 ISSN(Print): 2320-5148
8	Evaluation of Anxiolytic Activity of Pitavastatin in Male Albino Mice	Premkumar Chiluveru, G. Thirupathi, T. Ravi Chander	Pharmacy Practice	2019	Journal of Drug Delivery & Therapeutics	ISSN: 2250-1177
9	Development, In-Vitro and Ex-Vivo Evaluation of Muco-adhesive Buccal patches of Candesartan cilexetil	Kumara Swamy Samanthula , Shobha Rani Satla , Agaiah Goud Bairi	Pharmaceutics	2019	Research Journal of Pharmacy and Technology	ISSN(Online): 0974-360X ISSN(Print): 0974-3618

Principal
Vaagdevi Pharmacy Colle
Bollikunta, Warangal - 506 005

Available online on 15.09.2018 at http://jddtonline.info

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

Open Access

Research Article

ANTIPLASMODIAL ACTIVITY OF *CAESALPINIA CRISTA* SEED EXTRACTS

M. Swapna Reddy [a,b], B. Ramya Kuber [a]*

[a] Sri Padmavathi Mahila Visvavidyalayam, Tirupathi-517502, A.P, India

[b] Vaagdevi Pharmacy College, Bollikunta, Warangal, India

ABSTRACT

Objective: To evaluate antiplasmodial activity of *Caesalpinia crista* seed extracts

Methods: Antiplasmodial activity of the seed extracts of *Caesalpinia crista* against rodent malaria infections in chloroquine sensitive *Plasmodium falciparum* strain was investigated, and oral acute toxicity of seed extracts of *Caesalpinia crista* was also evaluated.

Results: The findings of this study revealed significant ($P < 0.05$) and dose dependent decrease in parasitaemia in the parasitized groups treated with varying doses of the extract (50-200 mg/kg p.o.) in both suppressive and curative tests. There was also significant decrease in parasitaemia density in the chloroquine treated group. The alcoholic extract was found no toxicity in wistar rats and the oral LD50 was determined to be greater than 5000 mg/kg.

Conclusion: Seed extracts of *Caesalpinia crista* extract possesses potent antiplasmodial activity and may therefore, serve as potential sources of new antimalarial agents.

Keywords: Plasmodium falciparum, Caesalpinia *crista*, Plant extracts, Phytochemicals, Toxicity tests, malaria.

Article Info: Received 26 July, 2018; Review Completed 22 Aug 2018; Accepted 25 Aug 2018; Available online 15 Sep 2018

Cite this article as:

Swapna Reddy M, Ramya Kuber B. Antiplasmodial activity of *Caesalpinia crista* seed extracts, Journal of Drug Delivery and Therapeutics. 2018; 8(5):354-357 DOI: http://dx.doi.org/10.22270/jddt.v8i5.1880

***Address for Correspondence:**

Dr. B. Ramya Kuber, M.Pharm., Ph.D, Associate Professor, Institute of Pharmaceutical Technology, Sri Padmavati Mahila Visva Vidyalayam (Women's University), Tirupati-517502, A.P, India.

INTRODUCTION [1, 2, 4, 5]

Malaria still remains one of the killer diseases plaguing Africa and other developing countries. The development and spread of drug resistant strains of the causative agent *Plasmodium falciparum* has limited the effectiveness of the currently used malarial drugs. This creates the need for new antimalarial drugs. Plants have over the years proved to be a good source of chemotherapeutic agents.

Caesalpinia crista (Caesalpiniaceae) is a large scandant prickly shrub found throughout the interior parts of India, Sri Lanka and West Indies. It is common in southern parts of India and is often grown as a hedge plant. *Caesalpinia* is a pantropical genus with 120-130 species, but has a complex taxonomic history. This plant has profound medicinal use and is proved to have adaptogenic activity, anthelmintic activity, anti-inflammatory activity, antipyretic activity, analgesic activity, anti-amyloidogenic activity, antibacterial activity, antidiabetic activity, antifilarial activity, antioxidant activity, nootropic activity, immunomodulatory activity, hypoglycemic activity and hepatoprotective activity. The macro and microscopical features of the seed, leaf and flowers have been studied.

MATERIALS AND METHODS

Plant collection and sample preparation

Collection of plant part: The seeds of *Caesalpinia crista* were procured from local areas of Warangal, Telangana in the month of January, 2017 Seeds were authenticated and voucher specimen was deposited in

Principal Vaagdevi Pharmacy College Bollikunta, Warangal-506005

VAAGDEVI PHARMACY COLLEGE

Principal Vaagdevi Pharmacy College Bollikunta, Warangal-506 005

Extended Abstract | Skin Diseases & Skin Care | 2019 | Vol.4 No.1

Recurrent Attack of Metformin Induced Bullous Pemphigoid

Pravalika Lashkar*, Pavani Thota, Ravi Chander Thatipelli and Shalini Reddy Polepalli
Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India
Email: niharika2lashkar@gmail.com

Bullous pemphigoid is an autoimmune, cutaneous sub-epidermal blistering disorder with antibodies against BP230 and BP180 antigens. The etiology for the precipitation of this disease is not clearly known. Bullous pemphigoid is induced by many drugs, one of them is Gliptin category of diabetic drugs, but Metformin is not included. Metformin is an antihyperglycemic agent of Biguanide class, which is an first drug of choice for type 2 diabetes and used for the managing of type-2 diabetes. Bullous pemphigoid effects primarily elderly individuals from the fifth to seventh decade of life, with average onset of 65 years The autoantibodies against the components of skin can induce the blistering type of autoimmune disease. Autoimmune blistering diseases are two types: Blister in the epidermis (Pemphigus) and subepidermal blistering (Pemphigoid). Pemphigus, autoantibodies target (Dsg1) and (Dsg3) desmogleins, which play an important role in cell-cell adhesion between desmosomes and keratinocytes, thus cause blister formation with acantholysis. Autoantibodies in Bullous pemphigoid target molecules which involves in connecting basal epithelial cells and basement membrane in hemidesmosomes, such as type XVII collagen (COL17, BP180), type VII collagen (COL7), dystonin-e (BP230), P200 and laminin 332. Furosemide, Nonsteroidal anti-inflammatory drugs (Ibuprofen), Captopril, Phenacetin, Penicillamine, Etarnacept and systemic antibiotics have been associated with Bullous pemphigoid . Topical Clobetasol Propionate 40 mg (0.05%) and Oral Prednisolone (0.5 mg/kg/day) is preferred for disease control of drugs induced Bullous Pemphigoid in patients . This treatment was in support with European Dermatology Forum in collaboration with the European Academy of Dermatology and Venereology. The wellestablished immunosuppressive medication is a purine analogue (Azathioprine), DNA-synthesis inhibitor (mycophenolatemofetil) and folate antagonist (methotrexate), Rituximab and Omalizumab, are advised as alternative treatment for Bullous Pemphigoid. But these drugs would have more adverse effects so patient must be monitored by physician

Bullous Pemphigoid is the large fluid filled blistering rare skin disease. This occurs when our immune system attacks the thin layer of inner tissue of outer layer of skin. Exact reason for the abnormal immune response is unknown, but this can be triggered by certain drugs like Phenacetin, Captopril, Ibuprofen, Penicillamine, etc. A 42 years old male patient of known diabetic mellitus joined in inpatient department of the hospital with chief complaints of itching, fluid filled blisters since 1 week over chest and lower limbs and scalp and gradually progressed to upper limb and face. On examination of past history, two months back he admitted in hospital with same complaints. He was treated with Corticosteroids, anti-histamine, vitamin supplement and antibiotics. Metformin is widely used as first line agent for treatment of type-2 diabetes mellitus. Drug induced Bullous Pemphigoid has been associated with many drugs, but Metformin is not one among them. Here we a report a case on Metformin induced recurrent attack of Bullous Pemphigoid.

Patient presented with a history of type II diabetes with uncontrolled glycemic status. His Fasting blood sugar level is 125 mg/dL, Post lunch blood sugar level is 190 mg/dL, with the medication of Metformin and Glimepiride since last 7 years. Previously, two months back patient admitted in hospital with similar complaints and treated with anti-histamines(Cetirizine 5 mg /OD) & Corticosteroid (Dexamethasone) 1 ml/OD.The etiology for the triggering of this disease was not examined and it was neglected during 1st time attack but after recurrent attack the examination for etiology of the disease was observed and determined.

This work is partly presented at 6th International Conference on Cosmetology, Trichology & Aesthetic Practices, April 13-14, 2017 Dubai, UAE

WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES

SJIF Impact Factor 7.421

Volume 7, Issue 11, 1423-1430 Research Article ISSN 2278 – 4357

ANTI-INFLAMMATORY ACTIVITY OF ETHANOLIC EXTRACT OF LEAVES OF *AGANOSMA CYMOSA* ON FORMALIN INDUCED PAW EDEMA IN WISTAR RATS

Farmiza Begum[1]*, T. Ravi Chander[1], P. Anitha[2], B. Keerthi[1]

[1]Department of Pharmacology, Vaagdevi Pharmacy College, Bollikunta, Warangal-506001, Telangana, India.

[2]Department of Pharmacognosy, Vaagdevi Pharmacy College, Bollikunta, Warangal-506001, Telangana, India.

Article Received on
11 Sept. 2018,
Revised on 02 Oct. 2018,
Accepted on 23 Oct. 2018
DOI: 10.20959/wjpps201811-12664

***Corresponding Author**
T. Ravi Chander
Department of Pharmacology, Vaagdevi Pharmacy College, Bollikunta, Warangal-506001, Telangana, India.

ABSTRACT

Inflammation is one of the most important processes involved in the defense of an organism against local injury and infections. However it often progress to painful or chronic harmful diseases requiring pharmacological treatment. Inflammatory response is a series of well coordinated dynamic mechanism consisting of specific vascular humoral and cellular events that is characterized by the movement of fluids plasma and inflammatory leukocytes to the site of inflammation. A variety of chemical mediators or signalling molecules such as histamine, serotonin, leukotrienes, prostaglandins and ROS are produced by inflammatory and Phagocytic cells predominantly in the sequences which participate in onset of inflammation. The Primary objective of this present study is to evaluate the anti-inflammatory activity of ethanol extract of leaves of *Aganosma cymosa* in male wistar rats. In this perspective Ethanolic extract of leaves of *Aganosma cymosa* was taken & Formalin induced paw edema model was selected for inducing inflammation & Diclofenac sodium is used as Standard. Statistical analysis was carried out by one-way analysis of variance followed by Dunnet's test. The anti inflammatory activity of ethanolic extract of *Aganosma cymosa* at the doses of 150 and 300 mg/kg p.o. was evaluated by Formalin induced paw edema model in Rats. The results showed that, the Ethanolic extract significantly decreased the paw edema in a dose dependant manner and exhibited more activity at the dose of 300 mg/kg. The Ethanolic extract exhibited anti inflammatory activity, which may be due to the presence of phytoconstituents present in the

An Approach to Patient with Chorea: A Case Report

Asadi Shiva Prasad*, Thatipelli Ravi Chander, Farmiza Begum, Sandela Anjith Kumar, Nagabelli Nithesh

Department of Pharm.D, Vaagdevi Pharmacy College, Government Hospital, Warangal, 506001, Telangana, INDIA.

ABSTRACT

Chorea is a movement disorder that causes involuntary, unpredictable body movements. It is one of a group of neurological disorders called dyskinesias which is abnormal, uncontrolled, involuntary movement. It can affect one body part, such as an arm, leg or the head, or it can spread over the entire body. Chorea is the rarest disorder and can also effect to one side of body such as chorea of one arm but not both and is referred as hemichorea. Pathophysiology of chorea is somewhat complex and results from dysfunction of network between motor nucleus of thalamus and subcortical nuclei including globus pallidus interna. It is caused genetically or may be acquired. Huntington's disease is most common genetic cause of chorea. Clinical manifestations of hungtintons disease are mainly neurological and psychiatric. Diagnosis of chorea is mainly clinical and family history is important in diagnosis of genetic causes of chorea. Neuroimaging may also help in the diagnosis. Metabolic disorders and some drugs are very important causes of Non-genetic chorea. There is no standard course of treatment for chorea. Treatment depends on the type of chorea and the associated disease. Although there are many drugs that can control it, no cure has yet been identified. Among which includes penicillin prophylaxis and drugs such as sodium valproate and carbamazepine. *Here we are reporting a case of 12-year-old female with chief complaints of involuntary movements of hands, feet, which was diagnosed as Chorea based on MRI Scan where it was observed that a ring was formed in the left cerebral hemisphere.*

Key words: Chorea, Dyskinesias, Involuntary movements, Neuroacanthocytosis, Wilsons disease, Hungtinton's disease like syndrome.

INTRODUCTION

Chorea is defined as abnormality of movements of limbs and it's a group of neurological disorder called dyskinesia. If only one arm of the body or one side of body is involved is termed as hemichorea. Chorea is presented by semi directed, irregular movements that are not repetitive or rhythmic and appears to follow from one muscle to next.[1] It can effect body parts such as arms, neck, face, tongue, upper and lower extremes or else it can spread to whole body.[2] If it is associated with ballismus it is called as choreoballistic movement.

Movement in chorea may be simple or complex and may be superimposed with voluntary actions leading to a bizarre character. Flowing nature of chorea is most characteristic when superimposed with voluntary action.[3] Hypotonia is a consistent feature and knee jerks may be pendular, motor impersistence is experienced by patients in chorea i.e., they cannot maintain a poster and they squeeze and release the object when ever attempts were made to hold them and poping in and out of tongue can be observed (Harlequin's tongue) and common attempts are made to mask the symptoms of chorea by voluntary augmenting with semi purposeful movements.[4] It may be genetical or acquired, genetically may be due to neurodegenerative disease classical Huntington disease or Phenocopy syndrome like Huntington disease like syndrome like type 1, 2, 3 etc., acquired may be due to cerebrovascular disease, streptococcal infections, metabolic disorders, systemic lupus erythromatosus, thyrotoxicosis, coeliac disease[5] and some drugs like levodopa, anti-convulsants, anti-psychotics. Chorea gravidarum refers to the choreic symptoms that occurs during pregnancy.[6]

DOI: 10.5530/ijopp.12.1.14

Address for correspondence:
T. Ravi Chander,
Associate Professor Head,
Department of Pharmacy Practice, Vaagdevi Pharmacy College, Bollikunta, Warangal, 506001, Telangana, INDIA.
Phone no: +91 8291565755
Email Id: trc2884@gmail.com

www.ijopp.org

Journal of Neurological Disorders

Pavani et al., J Neurol Disord 2019, 7:1
DOI: 10.4172/2329-6895.1000400

Case Report

Open Access

Guillain Barre Syndrome and its Variants: A Case Report on Acute Motor - Sensory Neuropathy

Pavani T, Ravi Chander T*, Shalini Reddy P and Bhaskar D

Department of Pharmacy, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India

Abstract

Guillain Barre Syndrome is an autoimmune disease and acute idiopathic polyneuritis condition. This is considered as Monophasic Immune Mediated Disorder (MIMD) and as acute inflammatory demyelinating poly-radiculoneuropathy in peripheral nervous system. Around 1-3 people affecting in 1,00,000 population. AMSAN and AMAN are rare subtypes of Guillain Barre Syndrome. The accurate cause of this disease is unknown. Around 2-12% people die due to GBS followed respiratory paralysis. Generally, Immunoglobulins (IgG) and plasma exchange given as effective treatment. Here we find a case of 18 years male patient presented with complaints of generalized weakness since 10 days and ascending paralysis followed by descending paralysis for one day. Based on family history and nerve conduction studies, it was concluded with AMSAN type of GBS. In order to treat the condition nutrition therapy, physiotherapy and steroids were given to the patient, though steroids are considered as ineffective treatment.

Keywords: Immunoglobulins; Monophasic immune mediated disorder; Plasma exchange

Abbreviations: Acute Motor Axonal Neuropathy (AMAN); Acute Motor and Sensory Axonal Neuropathy (AMSAN)

Introduction

Guillain Barre Syndrome, also known as Landry paralysis, it is the acute idiopathic polyneuritis; it is immunologically mediated disorder [1]. Guillain Barre Syndrome (GBS) is an acute onset and monophasic immune-mediated disorder (MIMD) in the peripheral nervous system. The term GBS is the synonymous of Acute Inflammatory Demyelinating Polyradiculoneuropathy (AIDP) [2]. It is a rare immune mediated polyradiculoneuropathy, which has an incidence of 1-3 per 1,00,000 population according to epidemiological studies in Europe, USA, Australia [3]. Females and Males are equally at risk [4-11]. Acute Motor Axonal Neuropathy (AMAN) and Acute Motor and Sensory Axonal Neuropathy (AMSAN) are subtypes of GBS mainly occur by acute inflammatory demyelinating nerves and Miller Fisher Syndrome (MFS) is also considered as an uncommon variant of Guillain-Barré syndrome (GBS). It is characterized by ataxia, areflexia and external ophthalmoplegia [12-15]. GBS remains as life threatening disease with mortality rate of 2-12% people [7] and 3-7% in USA and Europe. An American fatality study found that the most common complications that cause death in GBS were cardiovascular and respiratory paralysis [5]. The exact etiology and pathophysiology of GBS was not completely understood, but genetic and environmental factors that affect an individual's susceptibility to develop the disease [10]. The majority of GBS cases are affected by prior infection of Gastroenteritis and Respiratory tract infections and subsequence abnormal immune response towards the infectious agents, typically with the onset of symptoms 2-4 weeks after the primary infections [14]. It is thought to be an immune mediated process, results from the generation of auto-immune antibodies and inflammatory cells that cross- react with epitopes on roots of pheripheral nerves leading to axonal damage and demyelination or both [4]. The immune response towards many infections have been identified, including cytomegalovirus (CMV) *Campylobacter jejuni*, influenza virus, mycoplasma pneumonia, Epstein Barre virus, Japanese encephalitis virus (JEV) can trigger GBS [1,4,10]. Vaccines are other antigenic stimulus that potentially associates with GBS have been reported, they include formulations of simple rabies vaccine, tetanus toxoid vaccine and some formulation of influenza vaccine [4]. The AIDP, histological appearance resembles the experimental autoimmune neuritis that which commonly caused by T-cells directed P0,P2 and PMP22 [1,10]. In AIDP-the role of T-cell mediated immunity remains unclear and there is evidence that proves the involvement of antibodies and complement. Strong evidence that exist now are acute motor axonal neuropathy (AMAN) and acute motor and sensory neuropathy (AMSAN) are caused by antibodies towards gangliosides on the axolemma that target macrophages to invade the axon at Node of Ranvier [2]. In early detection and characterization of inflammatory demyelinating polyradiculopathies Electro diagnosis play an important role [11]. In order to treat GBS the Immunoglobulin therapy and plasma exchange are recommended as equally effective treatments [2], addition of nutrition therapy can show faster effect [3]. Hypokalaemia is a well-recognised common complication for therapeutic plasma exchange. There is a possibility of sudden death due to cardiac arrhythmias which is predisposing effect of hypokalaemia [6]. Here we report a case of AMSAN type of GBS. In this, the patient was treated with Corticosteroids and with additional nutritional therapy & physiotherapy as there is no availability of IgG and PE.

Case Report

An 18-year old male, 3rd child & 1st son to his parents presented with complaints of generalized muscle weakness since 10 days and ascending paralysis followed by descending paralysis since day 1. On examination, the patient was conscious and coherent. Pallor, cyanosis, jaundice, clubbing, edema and lymphadenopathies were absent. His blood pressure was found to be 125/80 mmHg with no orthostatic hypotension. His pulse was 86/minutes and regular. Respiratory

***Corresponding author:** Ravi Chander T, Head, Department of Pharmacy, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India, Tel: 9494233661; E-mail: pavani.laxmi07@gmail.com

Received January 03, 2019; **Accepted** February 04, 2019; **Published** February 08, 2019

Citation: Pavani T, Chander RT, Reddy SP, Bhaskar D (2019) Guillain Barre Syndrome and its Variants: A Case Report on Acute Motor - Sensory Neuropathy. J Neurol Disord 7: 400. doi:10.4172/2329-6895.1000400

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal-506005

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal - 506 005

International Journal of Pharmacy and Biological Sciences-IJPBS™ (2019) 9 (2): 1502-1512
Online ISSN: 2230-7605, Print ISSN: 2321-3272
Research Article | Pharmaceutical Sciences | Open Access | MCI Approved
UGC Approved Journal

Evaluation Of Wound Healing and Anti-inflammatory Activities of Leaves of *Ziziphus oenoplia*

Anitha Potaraju*, Kumara Swamy Samanthula and Kamal Yadav Gadda

Department of Pharmacognosy and Phytochemistry, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India, 506 005.

Received: 16 Jan 2019 / Accepted: 2 Mar 2019 / Published online: 1 Apr 2019
Corresponding Author Email: anithapotaraju@gmail.com

Abstract

The wound curing activity of aqueous and alcoholic extracts of *Ziziphus oenoplia* leaves was evaluated by excision and incision wound models on rats. The study was carried out by topical application of 5% w/w ointment of aqueous and alcoholic extracts was prepared with PEG 400 and PEG 4000 as an ointment base. The evaluated parameters were rate of wound contraction, epithelialization period, and tensile strength of tissue and compared results with Neosporin ointment as standard. The results revealed a significant decrease in epithelialization time, a significant increase in tensile strength in the animals treated with aqueous and alcoholic extracts of leaves of *Ziziphus oenoplia*. In addition, significant activity was found in alcoholic followed by aqueous extracts then compared to control. The study concluded that both the extracts were found to possess significant wound healing activity.

Keywords

Ziziphus oenoplia, Epithelialization, Neosporin, tensile strength, and PEG 400 and PEG 4000.

*****

INTRODUCTION:

India has a long history of plant-based expertise in the field of healthcare. In India, a wide variety of plants/plant extracts/decoctions/pastes are utilized for the treatment of cuts, wounds, and burns by tribes and folklore traditions in the same way as modern medicine [1].

There are a number of plants that were used traditionally and by the tribal people which have not been validated or not been evaluated, keeping the traditional claim in mind [2]. *Ziziphus oenoplia* is distributed in central and south India and almost all the three regions of Andhra Pradesh. It has a traditional claim for its wound healing activity [3].

Since there was no scientific data available and no documentation was carried out on this medicinally important plant. Pain and inflammation are interlinked with that of the wound healing activity and if the extract shows an anti-inflammatory property. So, it is worthwhile to carry out Wound healing and Anti-inflammatory activities of *Ziziphus oenoplia* leaf extracts. As a result, an effort is being made to conduct our research on the wound healing and anti-inflammatory properties of *Ziziphus oenoplia* in the current study [4].

Today, nearly 80% of the global population turns to plant-derived medicines as their first line of defense for maintaining health and combating diseases. Worldwide, one hundred nineteen secondary plant metabolites produced from plants are used as medicines. Chemical investigations have been conducted on 15 per cent of all angiosperms, with 74 per cent of the plant-derived components shown to be pharmacologically active. People in Asia

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal-506005

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal - 506 005

IJPSR (2019), Volume 10, Issue 4 (Research Article)

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 07 August 2018, received in revised form, 28 January 2019, accepted, 09 March 2019, published 01 April 2019

PARENTERAL ADMINISTERED SUSTAINED RELEASE PIPERINE MICROPARTICLES INTENDED FOR TREATMENT OF LIVER FIBROSIS

B. Chandra Shekhar Reddy *[1], Krishnaveni Bommineni [2] and Jithan Aukunuru [3]

Department of Pharmaceutics [1], Department of Pharmacognosy [2], Vaagdevi Pharmacy College, Warangal - 506005, Telangana, India.

Department of Pharmaceutics [3], Omega College of Pharmacy, Hyderabad - 501301, Telangana, India.

Keywords:

Piperine, Microparticles, Liver fibrosis, Pharmacokinetics, Hepatoprotective activity

Correspondence to Author:
Dr. B. Chandra Shekhar Reddy

Associate Professor, Department of Pharmaceutics, Vaagdevi Pharmacy College, Warangal - 506005, Telangana, India

E-mail: reachbcsr@gmail.com

ABSTRACT: The objective of this work was to formulate and characterize microparticles containing piperine, and evaluate their activity against carbon tetrachloride (CCl_4)-induced liver toxicity. Piperine microparticles were formulated by o/w emulsion solvent evaporation technique using poly-ε-caprolactone as a polymer. Four different microparticle formulations (PM1, PM2, PM3, and PM4) were prepared by varying the drug/polymer ratio. The particles were characterized for particle size, drug content, surface morphology, and *in-vitro* drug release. The pharmacokinetics and pharmacodynamics of the piperine formulations in male Wistar rats were evaluated following intraperitoneal administration, using piperine solution as reference. The hepatoprotective activity of the formulation was determined in a CCl_4-treated rat model and also compared with piperine solution. Piperine microparticles were successfully prepared using o/w emulsion solvent evaporation technique. The microparticles sustained the release of the drug both *in-vitro* and *in-vivo* for up to 10 days and offered better pharmacokinetic properties than the free drug itself. Microparticle formulation tested *in-vivo* demonstrated better pharmacokinetics and pharmacodynamics compared to the reference. Drug levels in the liver were significantly higher with the microparticular formulation. The piperine microparticles produced a significant decrease in both transaminase levels when challenged with CCl_4 intraperitoneally. Positive results of these studies gave an insight that microparticles are more effective and suitable for targeted and sustained drug delivery to the liver.

INTRODUCTION: Statistics indicate that liver fibrosis/cirrhosis is one of the leading causes of death in several parts of the world. For the past 20 years, liver cirrhosis has been extensively studied. In the initial stages, this disease is characterized by liver fibrosis.

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.10(4).1935-43

The article can be accessed online on www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.10(4).1935-43

Liver fibrosis is caused because of a variety of reasons. When fibrosis becomes cirrhosis, life-threatening complications occur which include variceal bleeding, ascites formation, and hepatorenal syndrome, among others.

These complications are an economic burden to the society, and epidemiological studies indicate that this burden would increase tremendously shortly [1]. There is no clinically useful drug to treat this disorder. Clinically trial and preclinical data showed that several hepatoprotective drugs could cure or reverse the progression of this disease. Clinical interventions to stop the progression of this

Available online on 15.05.2019 at http://jddtonline.info

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

Open Access Research Article

Evaluation of Anxiolytic Activity of Pitavastatin in Male Albino Mice

Premkumar Chiluveru*[1], G. Thirupathi[1], T. Ravi Chander[2]

1. Nottingham Trent University, Clifton campus, Nottingham, NG11 8NS
2. Vaagdevi Pharmacy College, Bollikunta, Warangal, India

ABSTRACT

To assess the anxiolytic activity of Pitavastatin in male albino mice. To compare the anxiolytic activity of Pitavastatin with standard drug as diazepam. Anxiety is an emotional state, unpleasant in nature, associated with uneasiness, discomfort and fear about something. This Anxiety higher in developed countries than developing countries, moreover womens are more prone to this. At present we find number of marketed drugs all that are producing somewhat tolerated compounds. As by with that condition we conducted this study comparison with pitavastatin with diazepam. Pitavastatin and Diazepam were dissolved in saline. Control group mice were injected with saline. All drugs and saline were injected intraperitoneally, placed all in plus maze method and collected the data. Elevated plus maze Pitavastatin at dose 30 mg/kg and 50mg/kg increased number of open arm and total arm entries, time spent in open arm and decreased time spent in closed arm. The results suggest that the significant dose-dependent antianxiety activity of Pitavastatin is similar to the behavioral effects of Diazepam.

Keywords: Anxiolytic activity, Pitavastatin, Diazepam.

Article Info: Received 25 March 2019; Review Completed 02 May 2019; Accepted 06 May 2019; Available online 15 May 2019

Cite this article as:

Chiluveru P, Thirupathi G, Ravi Chander T, Evaluation of Anxiolytic Activity of Pitavastatin in Male Albino Mice, Journal of Drug Delivery and Therapeutics. 2019; 9(3):269-271 http://dx.doi.org/10.22270/jddt.v9i3.2640

***Address for Correspondence:**

Prem Kumar Chiluveru, Nottingham Trent University, Clifton campus, Nottingham, NG11 8NS

INTRODUCTION

Anxiety is an emotional state, unpleasant in nature, associated with uneasiness, discomfort and fear about something.[1] Different types of Anxiety disorders includes panic disorder, generalized anxiety disorder, post-traumatic stress disorder, phobias, and separation anxiety disorder. Prevalence estimates of anxiety disorders are generally higher in developed countries than in developing countries.[2] Women are more prone for anxiety disorder than in men.[3] $42.3 billion was the annual cost of anxiety disorder in US in 1990s, and most of it was due to non-psychiatric medical treatment costs.[4] The primary treatments for anxiety-related disorders include the SSRIs, SNRIs, benzodiazepines, non-benzodiazepines and beta adrenergic antagonists. But side effects such as day time sedation and dependence are generally associated with the use of benzodiazepines.[5] There is a need of new anxiolytic drug with lesser side effects and immediate onset of action. Clinical studies shows direct effects of statins in improvement of endothelial dysfunction, reduction in atherogenesis, Alzheimer's disease, dementia, and anti-inflammatory effects which are unrelated to their cholesterol reducing effects.[6,7,8] The aim of this study is to assess the anxiolytic effects of rosuvastatin.

MATERIALS AND METHODS

This study was conducted at the Department of Pharmacology. Drugs: Pitavastatin and Diazepam were dissolved in saline. Control group mice were injected with saline intraperitoneally

Animals: Twenty four male Albino mice weighing 18- 25g (2 - 2.5months old) were used in this study. All animals were bred in standard laboratory conditions comprising 12-hour light/dark cycle and were allowed to access for food and water adlibitum. Select six mices in each were grouped into 4 groups as follows.

Group 1.(control group): Saline (i.p route)

Group 2.1 mg/kg Diazepam (i.p route)

Group 3.30 mg/kg Pitavastatin (i.p route)

Group 4.50 mg/kg Pitavastatin (i.p route)

Experimental procedure: Drugs and/or saline were injected i.p. route in to the Mice an hour before the experiment. The plus maze tests were used to assess the anxiolytic effects of Pitavastatin. It consists of two open arms and two closed arms connected with the central platform. The apparatus is elevated at a height of 25 cm above the ground level. The animals are placed at center of the maze facing towards open arm.

VAAGDEVI PHARMACY COLLEGE

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal 506 005

ISSN 0974-3618 (Print)
0974-360X (Online)

www.rjptonline.org

RJPT

RESEARCH ARTICLE

Development, *In-Vitro and Ex-Vivo* Evaluation of Muco-adhesive Buccal patches of Candesartan cilexetil

Kumara Swamy Samanthula[1], Shobha Rani Satla[2], Agaiah Goud Bairi[3]

[1]Vaagdevi Pharmacy College, Bollikunta, Warangal.

[2]Centre for Pharmaceutical Sciences, IST, JNTU, Kukatpally, Hyderabad

[3]SRR College of Pharmaceutical Sciences, Valbhapur, Warangal

*Corresponding Author E-mail: **kumar4koty@gmail.com**

ABSTRACT:

Candesartan cilexetil (CC), is an anti-hypertensive drug belongs to angiotensin-II receptor antagonist. CC possesses poor oral bioavailability due to first-pass metabolism and poor aqueous solubility. Various approaches are known to reduce the problems of first-pass metabolism. Hence, buccal drug delivery was an approach to improve bioavailability. The present study, buccal muco-adhesive patches were prepared by using hydroxyl propyl methyl cellulose (HPMC E15) and eudragit RLPO and evaluate for physicochemical properties, such as thickness, weight uniformity, folding endurance, drug content, surface pH, swelling index, moisture absorption and *ex vivo* permeation studies. Among all the formulations, F7 was selected as an optimized formulation and was found to be 100.55% of drug in 6 hrs, and exhibited controlled drug release, follows zero-order kinetics with diffusion as a release mechanism. The *ex-vivo* permeation studies revealed that 100% of drug permeated in 6 hrs. Therefore, the buccal patches of CC were successfully developed and enhancement in oral bioavailability is further confirmed by conducting *in-vivo* studies.

KEYWORDS: Candesartan cilexetil, first-pass metabolism, Buccal muco-adhesive patches, *In-vitro, ex-vivo*

INTRODUCTION:

The oral route is the most preferred and widely applicable route for the delivery of the majority of the drugs. But the problems such as poor aqueous solubility, less residence time, chemical instability in the gastrointestinal tract minimizes the bioavailability (BA) of orally administered drugs[1]. Further, metabolism through various barriers or enzymes also degrades the drug before reaching a site of action. Hence, various alternative drug delivery systems are developed to enhance the oral BA of these drugs. The delivery systems include; enhancement of solubility through solid dispersions[2], complexation with cyclodextrins[3], liquisolid compacts[4], increase the stability and prolonged residence time through floating systems[5,6], increase the mucoadhesive property[7], lipid-based delivery systems for bypassing metabolism with solid lipid nanoparticles[8], transfersomes[9], nanostructured lipid carriers[10] and micronization for reducing particle size using nanosuspensions[11].

Received on 19.02.2019 Modified on 16.03.2019
Accepted on 06.04.2019
Research J. Pharm. and Tech. 2019; 12(6): 3038-3044.
DOI: 10.5958/0974-360X.2019.00514.6

The oral cavity is easily accessible for self-medication and is well accepted by patients. The oral cavity is the most attractive route for drug delivery due to its ease of administration. Both locally acting and systemic acting drugs can be administered by this route. The site-specific release of drug at mucosa is achieved when used for local activity and systemic action requires drug absorption through the mucosal barrier to reach systemic circulation[12].

In the last three decades, there is a great interest in the research of buccal drug delivery system. Buccal delivery of drugs provides an attractive alternative to the oral route of drug administration, particularly in overcoming deficiencies associated with the oral route[13]. Drug delivery via the buccal route using bioadhesive dosage forms offers a novel route of drug administration.[14,15]

The main attractive route for drug delivery of new and existing drugs is transmucosal drug delivery and also the only choice of route for delivery of some drugs available today through parenteral route[16,17]. The buccal mucosa and sublingual area are the most suitable sites for local and systemic drug delivery than the various sites available for drug delivery[18,19].

Viswambhara Educational Society

VAAGDEVI PHARMACY COLLEGE

Approved by AICTE, PCI-New Delhi & Affiliated to JNTUH
P.O.BOLLIKUNTA, WARANGAL-506 005(Telangana State)

.2.1 Publications for the Academic Year 2019-2020

S.No	Title of Paper	Name of the Author/s	Department of the Teacher	Year of Publication	ISBN/ISSN Number
1	Evaluation of Medication Adherence in Cardiovascular Disease Patients in Tertiary Care Hospitals of Warangal: Development of New Medication Adherence Scale	Ravi Chander T , Snehaja K, Jyotsna S, Vivek Sagar P	Pharmacy Practice	2019	ISSN 2413-4929
2	Prednisolone with Artesunate Effect on Henoch Schonle in Purpura with Malaria Condition	Tejaswi Chittem, Pavani Thota , Ravi Chander Thatipelli , Sayed Fermiza Begum	Pharmacy Practice	2019	ISSN: 2582-4333
3	A Study on Quality and Quantity of Sleep Disturbances Associated with their Quality of Life in Psychiatric Patients Lashkar	Pravalika , Banoth Anilkumar, Ravi Chander Thatipelli	Pharmacy Practice	2019	ISSN: 2319-7064
4	Assessment Of Cognitive Impairment Hypertensive's Focusing To Lower The Risk Of Dementia	U. Sai Meghana , B. Ramya, Dr. T. Ravi Chander.	Pharmacy Practice	2019	ISSN: 2250-3153
5	Formulation and Evaluation of Dexamethasone Loaded Cubosomes	Thoutreddy Rajani, Gullapudi Mahesh , Bonepally Chandra Shekhar Reddy	Pharmaceutics	2020	ISSN(Online): 0974-360X ISSN(Print): 0974-3618
6	Recurrent Attack of Metformin Induced Bullous Pemphigoid	Pravalika Lashkar, Pavani Thota, Ravi Chander Thatipelli and Shalini Reddy Polepalli	Pharmacy Practice	2020	ISSN: 2684-4281
7	A Study on Formulation and Evaluation of Oral Dispersible Tablets - Propranolol HCL	D. Radhika International Journal of Science and Research	Pharmaceutics	2019	ISSN: 2319-7064

Principal
Vaagdevi Pharmacy Co

Saudi Journal of Medical and Pharmaceutical Sciences

Original Research Article

Evaluation of Medication Adherence in Cardiovascular Disease Patients in Tertiary Care Hospitals of Warangal: Development of New Medication Adherence Scale

Ravi Chander T*, Sushaja K, Jyotsna S, Vivek Sagar P

Department of Pharmacy Practice, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India

DOI: 10.21276/sjmps.2019.5.8.6 | Received: 26 07 2019 | Accepted: 01 08 2019 | Published: 30 08 2019

*Corresponding author: Dr. T. Ravi Chander

Abstract

Objective: To evaluate medication adherence and analyze the prescribing pattern of cardiovascular disease patients in tertiary care hospital using a newly developed medication adherence scale. ***Methods:*** It is a multi centered retrospective observational study, conducted for a period of 6 months involving around 500 cardiac patients. The level of adherence is measured using newly developed medication adherence scale and prescribing patterns in cardiovascular patients is assessed through case reports. Analysis of data was done. ***Results:*** Among 500 cardiovascular patients, 58% were male and 42% were female. Most commonly diagnosed diseases are NL segment elevated myocardial infarction (28.3%) and left ventricular dysfunction (14%). Drugs used for the treatments are aspirin (95%) and clopidogrel (85.6%). Major risk factor is alcohol (11.6%) consumption, Hypertension and Diabetes Mellitus (99.6%). Major indications of cardiac patients is chest pain (42%), nausea (41%). Dx diagnosis was performed using Echocardiogram (89%). 2D Echo (32%). The maximum adherence is seen in the age group of 31-40 female and male. Age group of 51-60 are more non adherent compared to other groups in males, whereas in females age group of 61-70 are more non adherent. Overall study show that Females (62%) are more non adherent compared to males (38.6%). The major reasons for addiction of medications adherence is long duration regimens, lack of clinical communication between patients and health care professionals, forgetfulness etc. ***Conclusion:*** According to the study there is a suboptimal adherence is seen in cardiac patients and requires clinical interventions, which include affordable medications, easy to use medication regimens with fewer daily doses, communication between patients and healthcare providers.

Keywords: Medication Adherence, Prescriptions, Cardiovascular diseases, Regimen, aspirin, Echocardiogram

INTRODUCTION

Cardiovascular diseases are a group of disorders of the heart and blood vessels which includes coronary artery diseases (CAD) such as angina pectoris and myocardial infarction (commonly known as a heart attack). Other Cardiovascular diseases include stroke, heart failure, hypertension, carditis, aortic aneurysms, arrhythmia, cardiomyopathy, atherosclerosis, congenital heart diseases, myocarditis, endocarditis, valvular heart disease, thromboembolic disease, venous thrombosis etc [1]. Cardiovascular diseases are the frontiers among the non communicable diseases across the globe responsible for increasing the burden of morbidity and mortality. Age, Sex, tobacco use, excessive alcohol consumption, obesity, diabetes, genetic predisposition are the major risk factors for heart diseases (Figure 1) [2]. According to World health organisation 2019 statistics cardiovascular diseases is number one cause of global death, it is estimated that 17.9 million people died due to cardiovascular disease in 2016, representing 31% of all global deaths, of this 85% are heart attacks and strokes. Over 3 quarter deaths takes place in middle and low income countries [3]. Thus, the prevention and management of cardiovascular illness has become a major focus of healthcare provider's worldwide [4].

As per world health organisation, Medication adherence is "the degree to which the person's behaviour corresponds with the agreed recommendations from a health care provider [5]". Processes of Adherence are classified as three steps [6]

- Initiation,
- Implementation and
- Discontinuation of therapy.

Journal of Clinical and Medical Research
An Open Access Journal
ISSN: 2582-4333

Prednisolone with Artesunate Effect on Henoch Schonle in Purpura with Malaria Condition

Tejaswi Chittem, Pavani Thota*, Ravi Chander Thatipelli and Sayed Fermiza Begum

Department of Pharmacy Practice, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India

***Corresponding Author:** Pavani Thota, Department of Pharmacy Practice, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India, Tel: 9494233961

Received Date:10-10-2019, **Accepted Date:**10-14-2019; **Published Date:**10-21-2019

Abstract

Henoch Schonlein Purpura (HSP) is the common form of systemic vasculitis which is mostly seen in children and rarely in adults. It is clinically characterized by the symptoms of palpable purpura, joints pains, abdominal pain, nephritis, bowel perforation rarely CNS involved. HSP has incidence of 15 cases in 1,00,000 childrens per year. The etiology of the disease remains unclear but antigens such as infective agents, vaccination, drugs, insects and foods can trigger this autoimmune disease. The hormonal changes such as usage of oral contraceptives, during menstrual cycle, during pregnancy & hormones like dehydro-epiandrosterone, testosterone and estrogen alsotriggers autoimmune disease. Here we report a case of female patient affected with HSP which is triggered due to hormonal changes. A 12 years female patient admitted in hospital with complaints of restricting to walk, swelling of legs since 2 days, petechial rash, pain over arm and forearm, burning sensation in legs, rash started over ankle region which started spreading since 1 day. Then after admiting in hospital she was suffered with on and off fever and wasdiagnosed asmalaria. On examination of past history she had hypothyroidism 1 year back and under medication for 6 months. She attained puberty but with abnormal menstrual cycle for 3 months. Based on these conditions it was finally diagnosed as HSP with malaria. The condition was treated with corticosteroids and antimalarial drugs. During the treatment we observed adverse effects- swelling in scalp and peripheral neuropathy due to prednisolone and increase in rashes due to artesunate.

Keywords

Petechial rashs; Autoimmune Disease; Antimalarial drugs; Corticosteroids; Peripheral neuropathy; Scalp edema

Citation: Chittem T, Thota P, Thatipelli RC, Begum SF. Prednisolone with Artesunate Effect on Henochschonle in Purpura with Malaria Condition. J Clin Med Res. 2019;1(3):1-6.

DOI: https://doi.org/10.37191/Mapsci-2582-4333-1(3)-018

VAAGDEVI PHARMACY COLLEGE

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal - 506 005

International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Research Impact Factor (2018): 6.28 | SJIF (2018): 7.426

A Study on Quality and Quantity of Sleep Disturbances Associated with their Quality of Life in Psychiatric Patients

Lashkar Pravalika[1], Banoth Anilkumar[2], Ravi Chander Thatipelli[3]

Department of Pharmacy Practice, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India-506002

Abstract: *All India Institute of Medical Sciences (AIIMS) said sleep disturbances at present affects 5-10% of general population in India. 5% Indians aged 50 years and above suffering from sleep problems.Mostly sleep problems are insomnia. A prospective and observational study was conducted.in this study 100 psychiatry patients were examined freely for sleep disturbances and quality of life among them 60% are male and 40% are female cases. Patients divided into three categories based on adult age parameter 25-35years, 36-45years and 46-55years, patients and randomly collected psychiatry disorders cases with anhistory of 1-15 years duration.Mostly patients present with the symptoms of insomnia(36%), loss of appetite(9%), depression and hallucinations(15%).Sleep disturbances are seen in 25-35 years patients, who's scoring based on sleep revolution questionnaires score. Maximum sleep disturbances are seen in 25-35 age groups and majorly seen in males compared to females. Major reason for sleep disturbances and quality of life impairment is due to backward life and social, environment and occupational history. The current study highlights the importance of sleep in psychiatric disorder patients in adult age groups.Basedon our study insomnia should be addressed in psychiatry disorder patients, including its long term impact on health and quality of life.*

Keywords: Sleep quality and quantity, sleep revolution questionnaires scoring, quality of life

1. Introduction

Now a days one of the most prevalent sleep disorder occurring in general population was found to be an Insomnia. Over past decades it has been increasing dramatically and affecting all age groups and races.Sleep is a naturally recurring state of mind and body, characterized by altered consciousness, relatively inhibited sensory activity inhibition of nearly an voluntary muscle and reduces interaction with surrounding normalize brain function.[1]

Insomnia is an perception of inadequate or poor sleep leads to daytime sleepiness,lethargy and a general feeling of being unwell, both mentally and physically. It is not defined by number of hours of sleep a person gets, it is a measure of satisfaction with sleep[2]. Mood swings, irritability, social dysfunction and fatigue are common associated symptoms[3].

Types of insomnia:[4]

- **Acute Insomnia:** Last for less than three months and is often related in time to an identifiable causes.
- **Chronic Insomnia:** Which last for a months or longer, person has trouble in falling a sleepatleast three nights per week for three months or longer.
- **Comorbid Insomnia:** Results with psychiatric symptoms like anxiety, depression are know to be associated with changes in sleep.
- **Maintenance Insomnia:** Inability to stay asleep. People with maintenance insomnia wake up during the night and have difficulty returning to sleep.
- **Onset of Insomnia:** Difficult falling asleep at the beginning of night.

Relationship between Mental illness and Insomnia[5,6,7]

Insomnia is a cardinal symptom for many psychiatric disorders, especially depressive disorders because sleep and mental health are closely connected. Sleep deprivation mainly affects your psychological state and mental health. Mental health refers to cognitive, behavioral and emotional wellbeing. About 40% of patients who seek medical help for sleeping problems have a psychiatric condition. To an extent sleep quality can be a barometer of mental health. For that reason, psychiatric always enquire about sleep behavior when making a diagnosis. Sleep disorder often coexist with anxiety, panic disorders, depression, ADHD, schizophrenia, and bipolar disorder[5,6]. Many studies show that patients with mental health disorders experience changes in their sleep architecture ,often many individuals spend more time in lighter, less restorative stages of sleep, and less time in critically important deep and REM stages of sleep .Getting less sleep and spending insufficient time in deeper parts of sleep makes the patients so frustrating , anger and discomfort. To initiate sleep the brain will increase feelings of "sleepiness", thereby decreasing a person's ability to concentrate. Lack of good sleep contributes to reduced concentration, short-term memory, learning ability, and behavioral self control.[5,7]

Pathophysiology of Insomnia in Psychiatric:[8]

Hyperarousal

Insomnia is often considered as disorder of hyper arousal with an increased somatic, cognitive and cortical activation. Individuals with insomnia may experience physiological hyper arousal in both ventral and peripheral nervous system, also be refer to cognitive, emotional process suggesting that it may leads to both acute and chronic insomnia.

Molecular mechanism of sleep and insomnia

Numerous sleep regulatory substances are mostly linked to circadian rhythmic and sleep regulation.In that that endogenous molecule can be categorized as primarily wake-promoting /sleep suppressing substances (eatecholamine ,histamines)and sleep promoting /wake suppressing

Assessment Of Cognitive Impairment Hypertensive's Focusing To Lower The Risk Of Dementia

U. Sai Meghana*, B. Ramya*, Dr. T. Ravi Chander.

HOD, Department of Clinical Pharmacy, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India.

DOI: 10.29322/IJSRP.9.12.2019.p9699
http://dx.doi.org/10.29322/IJSRP.9.12.2019.p9699

Abstract- Background: The Study to assess the risk of cognitive impairment in hypertensive patients in different age groups in various territory hospitals.

Objective: This study is aimed to evaluate risk of cognitive impairment in hypertensive patients. To evaluate the association of characteristics of hypertension, including hypertension status, duration, blood pressure (BP), and pulse pressure (PP), with a cognitive function i.e, executive function, in people aged over 45 years, with a past history of hypertension on medication.

Materials and methods: In this retrospective study conducted at multicenters in Warangal, we randomly collected cases with hypertension with its past history since 5- 25years duration in people over aged 45years. The patient's cognitive function was analysed by using Mini- mental state examination and depression severity was examined by using patient health questionnaire.

Results: In this study, 300 patients were examined lively for cognitive function assessment. Overall hypertensive patients were divided into three age groups middle age(45-60yrs), elderly (61-75yrs) and old elderly (>75yrs) and also divided into 3 categories based on blood pressure (Controlled BP <140/<90, Treated but uncontrolled BP >140/>90 and Normotensive BP 120/80). These 3 categories were studied comparatively.

Cognitive performance based on mini mental state examination was found to be Severe in **111**patients (female- 84, Male – 27) in middle age group, **83** patients (female – 50, male – 33) in elderly and **20** patients (female-13, male- 7) in old elderly age group. Mild cognitive performance was seen in **32** patients (female – 20 and male – 12) in middle age group, **23** patients (female-5 and male – 18) in elderly age group. Nil cognitive score was seen in **17** patients of middle age and **13** patients of elderly age group. Depression severity based on patient health questionnaire was found to be mild in **12** patients, moderate in **101** patients, moderately severe in **153** patients and severe in **34** patients respectively.

Conclusion: According to our study, history of Hypertension in middle age may lead to cognitive impairment in late life. In the above analysis it was evident that 111 patients (37%) experienced severe cognitive impairment in the middle age i.e, (45-60yrs), 83 patients (27%) in elderly (61-75yrs) and 20 patients (6%) in old elderly age group. Depression status was moderately severe in over 50% of the patients.

I. Introduction

Hypertension has already been well recognized as a risk factor for cardiovascular and cerebrovascular diseases. Recently, there is an evidence showing that it may also play a role in cognitive dysfunction, increasing risks of related diseases such as Alzheimer's disease (AD) and vascular dementia (VaD). In adults, the hypertensive effects on the brain are thought to be due to systolic blood pressure exceeding the autoregulatory mechanisms of the brain . This results in damage to small cerebral vessels that can lead to impaired autoregulation, lacunar infarcts, amyloid angiopathy, and even cerebral atrophy . In adults, the amyloid angiopathy and cerebral atrophy can look similar to Alzheimer's disease . These changes make it difficult to differentiate HTN that is associated with Alzheimer's disease from vascular dementia secondary to HTN.

Hypertension exerts a more subtle impact on the brain that is revealed by diminished cognitive function. Thus, excluding age, hypertension is the most important risk factor for cerebrovascular pathology leading to stroke and dementia.

Hypertension is a modifiable condition, especially in the early stage, and therefore, it has been hypothesized that antihypertensive treatments might help to prevent early cognitive decline, thus reducing the risk of further neurodegenerative diseases. However, the results on the role that hypertension plays in cognitive decline have been quite inconsistent so far. Several clinical trials failed to draw a conclusion on the effects of controlling blood pressure (BP) on inhibiting cognitive decline due to short study period and low power to detect treatment effects. Numerous epidemiologic studies showed that hypertension in midlife increased the risk of cognitive damage that occurred 20-30 years later, but the outcomes in regards to late-life hypertension were inconsistent. As both AD and VaD have long preclinical phases which are present as mild cognitive decline, a better understanding of the effects of hypertension on cognition in different life stages, especially during and after middle age, is important for preventing both diseases.

The form of hypertension is distinct in middle-aged people (aged 45-59) as compared to in the elderly (aged ≥60). According to Smulyan et al, midlife hypertension is systolic/diastolic hypertension (elevation in both SBP and DBP caused by a raised total peripheral resistance), whereas most of the aged hypertensives present systolic hypertension only (a steady rise in SBP with normal or low DBP due to aortic stiffening). In addition, people over 75 years old tend to have a higher incidence of dementia.

ISSN 0974-3618 (Print)
0974-360X (Online)

www.rjptonline.org

RJPT

RESEARCH ARTICLE

Formulation and Evaluation of Dexamethasone Loaded Cubosomes

Thoutreddy Rajani[1,2]*, Gullapudi Mahesh[1], Bonepally Chandra Shekhar Reddy[1]

[1]Department of Pharmaceutics, Vaagdevi College of Pharmacy, Kakatiya University, Kishanpura, Hanamkonda-506001, Telangana, India.

[2]Research Scholar, Koneru Laxmaiah Education Foundation, Guntur, Andhra Pradesh, 522502

*Corresponding Author E-mail: rajanithoutreddy28@gmail.com

ABSTRACT:

Cubosomes are altered cubic phase systems, which are emerging as promising drug delivery system for the delivery of both hydrophilic and lipophilic drugs. Dexamethasone is a lipophilic steroidal drug with poor hydrophilicity. Lipophilic drugs like Dexamethasone can be successfully administered by use of novel transdermal systems like cubosomes, nanoparticles, liposomes, implants etc. Controlled drug delivery, increased time scale of action, preventing the necessity of frequent parenteral and ophthalmic admisitration is enhanced by loading Dexamethasone in the form of cubosomes. The main aim of present research was to encapsulate Dexamethasone in cubosomes for sustained drug release. Dexamethasone loaded cubosomes were prepared by top-down technique using Glyceryl Mono Oleate and Poloxamer 407 in different ratios. The prepared formulations were subjected to evaluation studies for excipient compatability, particle size, zeta potential, drug content, entrapment efficiency and *In vitro* drug release. The maximum entrapment efficiency was found as 96% with vesicle size as 119.4 nm, charge as -22.1±5.66 mV, Poly Dispersity Index as 0.153 and *In vitro* drug release as 92.12% by dialysis bag method over 24hrs. Stability studies were also conducted for the formulations as per protocol mentioned in ICH guidelines. These results suggest that the cubosomal formulation F6 is suitable for the delivery of Dexamethasone.

KEYWORDS: Dexamethasone, Cubosomes, Glyceryl Mono Oleate, Poloxamer 407, Top down approach, Sustained release.

1. INTRODUCTION:

Dexamethasone ($C_{22}H_{29}FO_5$) is a strong synthetic glucocorticoid steroidal drug used to treat various inflammatory and autoimmune conditions like Rheumatoid arthritis, edema, nasal and opthalmic allergies. It is poorly water soluble and is lipophilic in nature. Parenteral and Ophthalmic routes are commonly used to administer Dexamethasone. It has half-life of about 30-52 hours and 70% of protein binding[1].

Oral usage of glucocorticoids causes numerous adverse and toxic effects like stomach upset, disturbances in electrolytic balance, muscle atrophy, negative protein balance (catabolism), enhanced appetite causing significant weight gain etc[2]. Use of transdermal routes eliminates the above side effects, increases patient compliance and maintains the plasma drug level for a longer period of time[3].

Lipophilic drugs like Dexamethasone can be successfully administered by use of novel transdermal systems like cubosomes, gels, nanoparticles, liposomes, implants etc. Controlled drug delivery, increased time scale of action, preventing the necessity of frequent parenteral and ophthalmic admisitration is enhanced by loading Dexamethasone in the form of cubosomes[1].

Cubosomes are discrete, sub-micron, nanostructured particles of cubic liquid crystalline phase. These are microstructure particles containing surfactants with

Received on 10.07.2019 Modified on 07.08.2019
Accepted on 11.09.2019

Research J. Pharm. and Tech 2020; 13(2):709-714
DOI: 10.5958/0974-360X.2020.00135.3

Case Report
Volume 7:1 2020
DOI: 10.37421/JDD.2020.7.284

Journal of Dermatology and Dermatologic Diseases

ISSN: 2684-4281

Open Access

Recurrent Attack of Metformin Induced Bullous Pemphigoid

Pravallika Lashkar*, Pavani Thota, Ravi Chander Thatipelli and Shalini Reddy Polepalli

Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India

Abstract

Bullous Pemphigoid is the large fluid filled blistering rare skin disease. This occurs when our immune system attacks the thin layer of inner tissue of outer layer of skin. Exact reason for the abnormal immune response is unknown, but this can be triggered by certain drugs like Phenazotin, Captopril, Ibuprofen, Penicillamine, etc. A 42 years old male patient of known diabetic mellitus joined in inpatient department of the hospital with chief complaints of itching, fluid filled blisters since 1 week over chest and lower limbs and scalp and gradually progressed to upper limb and face. On examination of past history, two months back he admitted in hospital with same complaints. He was treated with Corticosteroids, anti-histamine, vitamin supplement and antibiotics. Metformin is widely used as first line agent for treatment of type-2 diabetes mellitus. Drug induced Bullous Pemphigoid has been associated with many drugs, but Metformin is not one among them. Here we a report a case on Metformin induced recurrent attack of Bullous Pemphigoid.

Keywords: Bullous pemphigoid • Metformin • Corticosteroids

Introduction

Bullous pemphigoid is an autoimmune, cutaneous sub-epidermal blistering disorder with antibodies against BP230 and BP180 antigens. The etiology for the precipitation of this disease is not clearly known [1]. Bullous pemphigoid is induced by many drugs, one of them is Gliptin category of diabetic drugs, but Metformin is not included [2]. Metformin is an anti-hyperglycemic agent of biguanide class, which is an first drug of choice for type 2 diabetes and used for the managing of type-2 diabetes [3,4]. Bullous pemphigoid effects primarily elderly individuals from the fifth to seventh decade of life, with average onset of 65 years [5].

The autoantibodies against the components of skin can induce the blistering type of autoimmune disease. Autoimmune blistering diseases are two types: Blister in the epidermis (Pemphigus) and subepidermal blistering (Pemphigoid). Pemphigus, autoantibodies target (Dsg1) and (Dsg3) desmoglens, which play an important role in cell-cell adhesion between desmosomes and keratinocytes, thus cause blister formation with acantholysis [6].

Autoantibodies in Bullous pemphigoid target molecules which involves in connecting basal epithelial cells and basement membrane in hemidesmosomes, such as type XVII collagen (COL17, BP180), type VII collagen (COL7), dystonine (BP230), P200 and laminin 332 [7,8]. Furosemide, Nonsteroidal anti-inflammatory drugs (Ibuprofen) Captopril, Phenacetin, Penicillamine, Etanercept and systemic antibiotics have been associated with Bullous pemphigoid [9,10]. Topical Clobetasol Propionate 40 mg (0.05%) and Oral Prednisolone (0.5 mg/kg/day) is preferred for disease control of drugs induced Bullous Pemphigoid in patients [11]. This treatment was in support with European Dermatology Forum in collaboration with the European Academy of Dermatology and Venereology [12,13]. The well-established immunosuppressive medication is a purine analogue (Azathioprine), DNA-synthesis inhibitor (mycophenolatemofetil) and folate antagonist (methotrexate). Rituximab and Omalizumab, are advised as alternative treatment for Bullous Pemphigoid [11]. But these drugs would have more adverse effects so patient must be monitored by physician [14,15].

Case Report

A 42-year-old male patient was admitted with chief complaints of itching, fluid filled blisters since 1 week over chest, lower limbs and scalp and gradually progressed to upper limb and face and he was admitted in local territory hospital of Warangal region.

Physical examination

On examination the patient was conscious coherent, afebrile with edema, fluid filled blisters over chest, upper limb, lower limb, on palms and face are found on body (Figures 1-2).

Figure 1. Formation of fluid filled blisters on hand.

*Address for Correspondence: Pravallika Lashkar, Student in Doctor of Pharmacy, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India, Tel: 0870 245 6111; E-mail: mhanikaPlashkar@gmail.com

Received: December 9, 2020; Accepted: March 3, 2020; Published: March 10, 2020

VAAGDEVI PHARMACY COLLEGE

Principal
Vaagdevi Pharmacy College
Warangal - 506 005

International Journal of Science and Research
ISSN: 2319-7064
ResearchGate Impact Factor (2018): 0.28 | SJIF (2018): 7.426

A Study on Formulation and Evaluation of Oral Dispersible Tablets - Propranolol HCL

D. Radhika

Assistant Professor, Department of Pharmaceutics, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India - 506002

Abstract: *The main objective of the present work is to develop oral disintegrating of tablets of Propranolol hydrochloride. This study was aimed, which can disintegrate or dissolve rapidly once placed in the oral cavity. Propranolol hydrochloride is a Antihypertensive drug, which undergoes extensive hepatic degradation (76%), which have poor oral bioavailability for overcoming this problem oral disintegrating of tablets of Propranolol hydrochloride can be formulated which avoids extensive first pass metabolism and improvement in dissolution efficacy, disintegration time which results in improvement in bioavailability. The ODTs are prepared by direct compression technique. All the prepared formulations were subjected to various evaluation parameters like hardness, thickness, friability, weight variation, wetting time, water absorption ratio, in-vitro dispersion time, in-vitro disintegration, and in-vitro dissolution. The optimized formulation of F5 oral disintegrating tablets containing crosspovidone showed hardness of 4.2kg/cm², thickness of 2.61mm, friability of 0.28%, wetting time 45sec, water absorption ratio of 69%, disintegration time of 22 sec, content uniformity of 10.28mg and in-vitro drug release of 97.4% better than other formulations containing sodium starch glycolate and cross carmellose sodium. The advantage of this formulation is such that in case of hypertension attack patient can take the drug without the usage of water.*

Keywords: Propranolol HCl, Super disintegrants, Oral disintegrating tablets, Disintegration time, Direct compression

1. Introduction: [3,4,5]

The performance of fast dissolving tablets depends on the technology used in their manufacture. The orally disintegrating property of the tablet is attributable to a quick ingress of water into the tablet matrix, which creates porous structure and results in rapid disintegration. Hence, the basic approaches to develop fast dissolving tablets include maximizing the porous structure of the tablet matrix, incorporating the appropriate disintegrating agent and using highly water-soluble excipients in the formulation. Following techniques have been used by various researchers to prepare fast dissolving tablets: • Freeze-Drying or Lyophilization • Tablet Molding • Spray Drying • Sublimation • Direct Compression • Cotton Candy Process • Mass-Extrusion

2. Need of Study

The oral route of administration is considered as the most widely accepted route. But the most evident drawback of the commonly used oral dosage forms like tablets and capsules is difficulty in swallowing, leading to patient's incompliance particularly in pediatric and geriatric patients. Oral dispersible tablets which gives advantages like absorption of drug directly into the systemic circulation; it is ideal dosage form for patients suffering from dysphagia, also useful in clinical conditions where water intake is limited and mainly useful for drugs undergoing high first pass metabolism. Oral dispersible tablet can disperse/disintegrate and dissolve rapidly in saliva without the need of drinking water. When such tablets are placed in oral cavity, saliva quickly penetrates into the pores to cause rapid tablet disintegration. Propranolol hydrochloride is a Antihypertensive drug, which undergoes extensive hepatic degradation (76%), which have poor bioavailability (24%) for overcoming this problem oral dispersible tablets of Propranolol hydrochloride can be formulated which avoids extensive first pass metabolism and improvement in dissolution efficacy, disintegration time which results in improvement in bioavailability. This formulation can be effectively used in case of hypertensive patients as it can be administered without the intake of water.

Therefore the main objective of the present work is to develop orodispersible tablets for Propranolol hydrochloride to improve bioavailability, disintegration time, dissolution efficacy and patient compliance.

3. Methods

3.1 Preformulation studies

It is one of the important prerequisites in development of any drug delivery system. Preformulation studies of the drug were performed, which included melting point determination, solubility and compatibility studies. The following preformulation studies were performed for Propranolol HCl.

3.1.1 Determination of melting point: Melting point of Propranolol hydrochloride was determined by capillary method. Fine powder of Propranolol hydrochloride was filled in glass capillary tube (previously sealed on one end). The capillary tube is tied to thermometer and placed in oil bath (light paraffin oil bath). The temperature at which it starts to melt was noted.

3.1.2 Solubility studies: [1,2]
The solubility studies conducted by shake flask method. Solubility studies in 6.8pH phosphate buffer: The 10ml of 6.8pH phosphate buffer taken in volumetric flask and add small amount of drug and shake the flask to dissolve the drug then add again small amount of drug and shake. These processes continued up to above saturation level of buffer and shake for 24hrs.After 24hrs the above solution was

Paper ID: ART20201373 10.21275/ART20201373

Viswambhara Educational Society

VAAGDEVI PHARMACY COLLEGE

Approved by AICTE, PCI-New Delhi & Affiliated to JNTUH
P.O.BOLLIKUNTA, WARANGAL-506 005(Telangana State)

3.3.2.1 Publications for the Academic Year 2020-2021

S.No	Title of Paper	Name of the Author/s	Department of the Teacher	Year of Publication	Name of the Journal	ISBN/ISSN Number
1	Development, In-Vitro and Ex-Vivo Evaluation of Muco-Adhesive Buccal Tablets of Hydralazine Hydrochloride	Kumara Swamy Samanthula , Radha Kishan Marupaka , Agaiah Goud Bairi , Shobha Rani Satla	Pharmaceutics	2020	Brazilian Journal of Pharmaceutical Sciences	ISSN: 2175-9790
2	Sudden onset of SJS in 14yr Olg Girl on Taking Antibiotic Drug – A Case Report	Lashkar Pravalika, Heena Fathima, Sirikonda Jyotsna and T Ravi Chander	Pharmacy Practice	2020	Journal of Dermatology Sciences Research Reviews & Reports	ISSN: 2754-494X
3	Green Synthesis of Polyherbal Silver Nanoparticles from Rosa Gallia of□icinalis, Citrus sinensis and Solanum tuberosum Extract for antioxidant Potency	Brito Raj S , Boukary Obedoulaye , Sucharitha P , Saritha M , Shaheedha S M , Srikanth P , Bhaskar Reddy K	Pharmaceutics	2020	International Journal of Research in Pharmaceutical Sciences	ISSN: 0975-7538
4	Preparation, Characterization and In Vivo Evaluation of Dexamethasone Nanoparticles for the treatment of Liver Fibrosis	Chandrasekhar R B, Krishnaveni B , Krishna Mohan G , Jithan AV	Pharmaceutics	2020	Research Journal of Pharmacy and Technology	ISSN(Print): 0974-3618 ISSN (Online): 0974-360X
5	Therapeutic goals of terminaton and their efficacy in patients	Manjula Pathri , Pasham Lasya Priya,*, Konatham Arundhathi , T Ravichander , Tejaswi	Pharmacy Practice	2020	Indian Journal of Obstetrics and Gynecology Research	ISSN: 2394-2746
6	Assessment of Different Treatment Patterns in Migraine with Co-Morbidities	B. Shravani, R. Rasmitha , E. Srinivas Rao , A. Gouthami	Pharmacy Practice	2020	International Journal of Medical Science and Diagnosis Research	ISSN(Online): 2581-3935 ISSN(Print): 2589-7837

Viswambhara Educational Society
VAAGDEVI PHARMACY COLLEGE
Approved by AICTE, PCI-New Delhi & Affiliated to JNTUH
P.O.BOLLIKUNTA, WARANGAL-506 005(Telangana State)

S.No	Title of Paper	Name of the Author/s	Department of the Teacher	Year of Publication	Name of the Journal	ISBN/ISSN Number
6	Bioadhesive polymers, permeation enhancers and types of dosage forms for buccal drug delivery	Kumara Swamy Samanthula, Shobha Rani Satla, Agaiah Goud Bairi	Pharmaceutics	2021	Journal of Drug Delivery and Therapeutics	ISSN: 2250-1177
7	Muco-adhesive buccal tablets of candesartan cilexetil for oral delivery: preparation, in-vitro and ex-vivo evaluation	Kumara Swamy Samanthula, Agaiah Goud Bairi and Mahendra Kumar CB	Pharmaceutics	2021	Journal of Drug Delivery and Therapeutics	ISSN: 2250-1177
8	Preparation, In Vitro characterization and stability studies of ropinirole lipid nanoparticles enriched hydrogel for treatment of neurodegeneration diseases	Kumara Swamy Samanthula, Ramesh Alli, Thirupathi Gorre	Pharmaceutics	2021	Journal of Drug Delivery and Therapeutics	ISSN: 2250-1177
9	Formulation and Evaluation of Fexofenadine Hydrochloride Lozenges	Shiva Kumar Ravula Gannu Praveen, Prof. Y. Madhusudan rao	Pharamaceutics	2021	High Technology Letters	ISSN : 1006-6748
10	Development, in-vitro and in-vivo Evaluation of Bio-Adhesive Buccal Patches of Hydralazine Hydrochloride for Improving the Oral Bioavailability	Kumara Swamy Samanthula, Agaiah Goud Bairi and Mahendra Kumar CB	Pharmaceutics	2021	International Journal of Pharmacy and Biological Sciences	ISSN(Online): 2230-7605 ISSN(Print): 2321-327
11	Cefotaxime Induced Staphylococcal Scalded Skin Syndrome: A Case Report	Shirisha Jakkula , Satish Chinnala ,Shravani Komuravelly , Venkateshwarlu Eggadi	Pharmacy Practice	2021	Indian Journal Of Pharmacy Practice	ISSN: 0974-8326

S.No	Title of Paper	Name of the Author/s	Department of the Teacher	Year of Publication	Name of the Journal	ISBN/ISSN Number
12	Preliminary Studies On Optimization Of Anti-Parkinson Drug Loaded Lipid Nanoparticles Enriched Hydrogel Formulations For Management Of Parkinson's Disease.	Kumara Swamy, Ramesh Alli and Thirupathi Gorre	Pharmaceutics	2021	Current Nanomedicine	ISSN(Online): 2468-1881 ISSN(Print): 2468-1873
13	Development In-Vitro And Ex-Vivo Characterization Of Bio-Adhesive Buccal Tablets Of Metoprolol Succinate For A Promising Choice In Hypertension Treatment	Kumara Swamy Samanthula, Agaiah Goud Bairi and Mahendra Kumar CB	Pharmaceutics	2021	Research Journal of Pharmaceutical, Biological and Chemical Sciences	ISSN: 2278-5191
14	Preparation, Characterization and Optimization of Irbesartan Loaded Solid Lipid Nanoparticles for Oral Delivery	Kumara Swamy S, Ramesh Alli	Pharmaceutics	2021	Asian Journal of Pharmacy and Technology	ISSN(Print): 2231–5705 ISSN(Online) : 2231–5713
15	Effect of various Polymers on Drug Release from Mucoadhesive Tablets of Cefixime Trihydrate	Kumara Swamy Samanthula , Agaiah Goud Bairi , Shobha Rani Satla , Mahendra Kumar CB	Pharmaceutics	2021	Research Journal of Pharmaceutical Dosage Forms and Technology	ISSN(Online): 0975-4377 ISSN(Print): 0975-234X
16	Health Issues of Smartphone Addiction in College Students	T. Ravi Chander, Nallateegala Anusha And Marri Alekhya	Pharmacy Practice	2021	International Journal of Biology, Pharmacy and Allied Sciences	Print ISSN: 2277-4998

Vaagdevi Pharmacy College

Viswambhara Educational Society
VAAGDEVI PHARMACY COLLEGE
Approved by AICTE, PCI-New Delhi & Affiliated to JNTUH
P.O.BOLLIKUNTA, WARANGAL-506 005(Telangana State)

S.No	Title of Paper	Name of the Author/s	Department of the Teacher	Year of Publication	Name of the Journal	ISBN/ISSN Number
17	Preliminary Studies On Optimization Of Anti-Parkinson Drug Loaded Lipid Nanoparticles Enriched Hydrogel Formulations For Management Of Parkinson's Disease.	Kumara Swamy, Ramesh Alli and Thirupathi Gorre	Pharmaceutics	2021	Current Nanomedicine	ISSN(Online): 2468-1881 ISSN(Print): 2468-1873

Principal
Vaagdevi Pharmacy College
Bollikunta
506 005

International Journal of Pharmacy and Biological Sciences-IJPBS™ (2021) 11 (2): 138-148
Online ISSN: 2230-7605, Print ISSN: 2321-3272
Research Article | Pharmaceutical Sciences | OA Journal | MCI Approved | Index Copernicus

Development, *in-vitro* and *in-vivo* Evaluation of Bio-Adhesive Buccal Patches of Hydralazine Hydrochloride for Improving the Oral Bioavailability

Kumara Swamy Samanthula[1]*, Agaiah Goud Bairi[2] and Mahendra Kumar CB[3]
[1]Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India.
[2]SRR College of Pharmaceutical Sciences, Valbhapur, Warangal, Telangana, India.
[3]St. Mary's College of Pharmacy, Secunderabad, Telangana, India.

Received: 10 Jan 2021 / Accepted: 8 March 2021 / Published online: 01 April 2021
*Corresponding Author Email: kumar4koty@gmail.com

Abstract

Background: Conventional routes of drug administration have several disadvantages. The rate and extent of absorption can vary greatly depending on the drug, its formulation, the presence of food, drug interactions, first-pass metabolism, and gastrointestinal pH. Better dosage forms or drug delivery mechanisms could minimize these problems. The pharmaceutical industry has recognized the need for and has developed many new, novel drug delivery systems. Transmucosal drug delivery can result in rapid drug absorption and systemic delivery. Several drugs and drug classes have been studied to determine the feasibility of using buccal dosage forms as a novel route of drug delivery. This study will focus on the systemic delivery of Hydralazine Hydrochloride (HHCl) via a buccal route. **Objective:** This work aims for the preparation of buccal patches of higher absorption and higher bioavailability for rapid control of blood pressure in hypertensive emergencies. The bioavailability of HHCl, when administered buccally, will be compared to the conventional oral route of administration. **Methods:** The present research aimed to develop and evaluate the mucoadhesive buccal patches of Hydralazine hydrochloride by solvent casting technique using HPMC E15 or Eudragit RL 100 and PVP K 30 polymers. **Results:** All the prepared buccal patches were subjected to various evaluation tests and the results of the tests were found to be within the pharmacopeial limits. The swelling study, bioadhesion time, in-vitro and ex-vivo drug permeation studies also appeared good results and the optimized formulation was subjected for bioavailability studies in healthy male rabbits. The pharmacokinetic profile of designed HHCl buccal patches was also showed a maximum plasma concentration (Cmax) and AUC $_{0-t}$ were found to be 1075.031±255.15 ng/ml and 42874.508±3903.14 ngh/ml. Whereas the administration of an oral solution of HHCl showed a maximum plasma concentration (Cmax) of 614.732±79.274 ng/ml and AUC$_{0-t}$ were found to be 19408.299±1802.48 ng h/ml. **Conclusion:** This research study demonstrated that developed buccal patches were efficacious could be delivered through the buccal route as it indicates a potential alternative drug delivery system for systemic delivery of HHCl. These results confirm the suitability of the prepared buccal patches to improve the bioavailability by avoiding the hepatic first-pass metabolism and thereby reducing metabolite-dependent adverse drug effects.

VAAGDEVI PHARMACY COLLEGE, Bollikunta, WARANGAL - 506 005

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal-506005

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal-506 005

Journal of Dermatology Sciences
Research Reviews & Reports

SCIENTIFIC Research and Community

Case Report Open Access

Sudden Onset of SJS in 14yr Olg Girl on Taking Antibiotic Drug – A Case Report

Lashkar Prevalika*, Heena Fathima, Sirikonda Jyotsna and T Ravi Chander

Department of Pharmacy Practice Vaagdevi Pharmacy College, Bollikunta Warangal, Telangana, India-506005

ABSTRACT

Each year many patients are hospitalized due to adverse drug reactions. Amoxicillin is a broad spectrum , bactericidal, beta lactam antibiotic, commonly used to combat various infections. Penicillin group of drugs are known to cause cutaneous drug eruptions especially in pediatric population. Paracetamol is used as antipyretic and analgesic Steven Johnson syndrome is an acute, self limited disease, presenting as severe mucosal erosions with wide spread erythematous cutaneous macules. Majority of cases are drug induced affecting oral and peri- oral region. Aim of the article is to present a case of steven Johnson syndrome primary to drug therapy amoxicillin and paracetamol. A 14 years female patient was admitted in hospital with a chief complaints of blisters over tongue, lips, difficult in swallowing, patient was dehydrated and fever since 5days. The reaction was evoked after consumption of tab amoxicillin, and paracetamol. She was treated with corticosteroids, local anesthetic, antiseptic, antifungal, iv fluids. Health care provider must be carefully regarding the adverse effect of drug especially Steven Johnson syndrome which is a potentially fatal condition. The case being reported to emphasize the need for pharmacovigillance in order to motivate adverse drug reaction reporting so as to gather more data regarding adverse drug reaction.

***Corresponding author**

Lashkar Prevalika, Department of Pharmacy Practice, Vaagdevi Pharmacy College Bollikunta, Warangal. Tel: 7680925989; E-mail: niharikallashkar@gmail.com

Received: September 22, 2020; **Accepted:** September 28, 2020; **Published:** October 16, 2020

Keywords: Adverse Drug Reaction, Amoxicillin, Paracetamol, Pharmacovigilance, Steven Johnson Syndrome.

Abbrevation

CADRS – Cutaneous Adverse Drug Reaction, SJS –Steven Johnson Syndrome TEN- Toxic Epidermal Necrolysis, RBS- Random Blood Sugar, SGPT- Serum Glutamate – Pyruvate Transaminase, SGOT- Serum Glutamic – Oxaloacetic Transaminase.

Introduction

Cutaneous eruption is one of common forms of adverse reaction manifestation. Adverse drug reactions (ADRs) hold special importance in healthcare as they account for 6% of total hospital admissions, increase in economic burden on healthcare system, withdrawal of drugs from market, and death [1]. SJS is one such manifestation. Stevens-Johnson syndrome (SJS) is a rare, serious disorder of the skin and mucous membranes. It's usually a reaction to medication that starts with flu-like symptoms, followed by a painful rash that spreads and blisters. Then the top layer of affected skin dies, sheds and begins to heal after several days [2]. Steven-Johnson syndrome (SJS) is an infrequent and a severe form of erythema multiforme (EM). It can occur due to an adverse hypersensitivity reaction to drugs which results in skin and mucosal eruptions that can be potentially fatal. It is considered to be a less severe form of toxic epidermal necrolysis (TEN) [3]. The basic difference between SJS and TEN is the percentage of body surface area (BSA) involved: <10% in SJS; >30% in TEN; 10 to 30% in SJS-TEN overlap [4] It is caused by a hypersensitivity reaction, usually to drugs (e.g. – salicylates, sulfonamides, penicillin, barbiturates, carbamazepine, phenytoin) but it is also seen with infection or cancer. There is ulceration of skin and mucosal surfaces. Typical target lesions develop, often on palms or soles with blistering in the centre [5].

SJS may present as a nonspecific febrile illness (malaise, fever, vomiting, headache, cough, rhinorrhea) with polymorphic lesion on skin and mucous membrane characterized by blisters and erosions [6]. Drugs are most commonly implicated for causing 77-95% of cases [7]. The incidence of SJS has been estimated to be around 1–6/1,000,000 persons per year with a mortality rate of 1–5% which rises up to 30% in TEN. Multiple drugs have been identified to cause SJS and TEN, antibiotics (sulfonamides) being the most common [8]. Diagnosis is based on the appearance of skin lesion and a history of risk factors or related disease [9]. The exact mechanism of SJS still remain unknown. It has been well established that the epidermal damage in these diseases is due to keratinocyte apoptosis. Although drug-specific T cells are implicated in this process, our understanding of the immunopathology is far from complete [10]. SJS/TEN reactions are believed to follow type IV hypersensitivity reaction in which a drug or metabolite stimulates cytotoxic T cell (i.e.CD8+ T cells) and T helper cells (i.e. CD4+ T cells) to initiate auto immune reaction that attack self tissues [11].

Case Report

History

A 14 years old female patient living in hostel presented with history of fever and sore throat to a local doctor for which she was prescribed with capsule amoxicillin 250 mg *bid*× 5 days and tablet paracetamol 500mg *tid*×5 days, tablet ranitidine ×*od* 5 days.

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF RESEARCH IN PHARMACEUTICAL SCIENCES

Published by JK Welfare & Pharmascope Foundation Journal Home Page: www.pharmascope.org/ijrps

Green Synthesis of Polyherbal Silver Nanoparticles from *Rosa Gallia officinalis, Citrus sinensis* and *Solanum tuberosum* Extract for antioxidant Potency

Brito Raj S[1], Boukary Obedoulaye[1], Sucharitha P[2], Saritha M[3], Shaheedha S M[4], Srikanth P[5], Bhaskar Reddy K*[1]

[1]Department of Pharmaceutics, Centre for Pharmaceutical Nanotechnology, Sri Venkateswara College of Pharmacy, RVS Nagar, Chittoor - 517127, Andhra Pradesh, India
[2]Department of Pharmaceutics, Seven Hills College of Pharmacy, Tirupati – 517561, Andhra Pradesh, India
[3]Department of Pharmaceutics, Vignan Institute of Pharmaceutical Technology, Kapujaggraju Peta Duvvada,Visakhaptnam -530049, Andhra Pradesh, India
[4]Department of Pharmacognosy, Crescent School of Pharmacy, B.S.Abdur Rahman Crescent Institute of Science and Technology, Vandalur, Chennai - 600048, Tamil Nadu, India
[5]Department of Pharmaceutics, Vaagdevi Pharmacy College, Warangal - 506005, Telangana, India

Article History:

Received on: 02 Jul 2020
Revised on: 02 Aug 2020
Accepted on: 03 Aug 2020

Keywords:

Polyherbal,
Silver Nanoparticles,
DPPH Scavenging,
Total Phenolic Content,
Antioxidant Activity

ABSTRACT

Skin ageing is due to the combination of natural, largely genetically programmed and environmentally modulated changes which occur in the body system due to free radical damage. Silver Nanoparticle (AgNPs), were prepared by chemical reduction using green synthesis and they were evaluated for particle size in nanometer, zeta potential in millivolt, surface morphology by scanning electron microscopy (SEM) and percent entrapment efficiency. The polyphenols were quantified by chromatographic techniques and the antioxidant activity measured spectrophotometrically by DPPH (2,2 Diphenyl 1 picrylhydrazyl) assay. According to this study AgNPs showed a least particle size of 145.4±2.4nm, maximum zeta potential of -39.1±2.4 mV with desired polydispersity index of 0.358±0.02, the amount of polyphenols loaded in AgNPs was found to be 87.23±2.54%. Maximum phenolic content was found in F1 as 65.21 ± 3.721 mg equivalent GAE/g of extract. On comparing the IC_{50} values, F1 and F5 exhibited the lowest and highest values respectively. Therefore, F1 possesses higher DPPH radical scavenging potential.

*Corresponding Author

Name: Bhaskar Reddy K
Phone: +91 9176688999
Email: bhaskurra@gmail.com

ISSN: 0975-7538

DOI: https://doi.org/10.26452/ijrps.v11i4.3800

Production and Hosted by

Pharmascope.org

INTRODUCTION

Skin ageing process can be prematurely caused by various factors which include free radicals damaging the cells, exposure to the sun (photo-ageing) and pollution, environmental factors (smoking and drinking), diet and stress, and loss of subcutaneous support (Zhang and Duan, 2018; Tobin, 2017). It can be the result of a combination of natural, largely genetically programmed and environmentally modulated changes which occur in the body. Skin ageing is a predominantly natural change that cannot be completely reversed; however, it is possible to reduce the wrinkles and brown spots (Bau-

VAAGDEVI PHARMACY COLLEGE WARANGAL

Vaagdevi Pharmacy College
Bollikunta, Warangal-506005

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal

ISSN 0974-3618 (Print)
0974-360X (Online)

www.rjptonline.org

RJPT

RESEARCH ARTICLE

Preparation, Characterization and *In Vivo* Evaluation of Dexamethasone Nanoparticles for the treatment of Liver Fibrosis

Chandrasekhar R B[1*], Krishnaveni B[2], Krishna Mohan G[3], Jithan AV[4]
[1]Department of Pharmaceutics, Vaagdevi Pharmacy College, Warangal, Telangana, India.
[2]Department of Pharmacognosy, Vaagdevi College of Pharmacy, Warangal, Telangana, India.
[3]Department of Pharmaceutical Sciences, JNTU, Hyderabad, Telangana, India.
[4]Department of Pharmaceutics, Omega College of Pharmacy, Hyderabad, Telangana, India.
*Corresponding Author E-mail: csreddybonepally@gmail.com

ABSTRACT:

Background: The purpose of this study was to formulate nanoparticles containing Dexamethasone and to investigate their potential in the prevention of carbon tetrachloride induced liver toxicity. Methods: Dexamethasone nanoparticles were formulated using o/w emulsion solvent evaporation technique using poly-ε-caprolactone as polymer. Four different nanoparticle formulations (DXMNP1, DXMNP2, DXMNP3 and DXMNP4) were prepared by taking different drug to polymer ratios. The prepared particles were characterized for particle size, drug content, PDI, surface charge potential and in-vitro drug release. The pharmacokinetics and pharmacodynamics of the Dexamethasone formulations were evaluated in male Wistar rats following *iv* administration, using Dexamethasone solution as reference. The pharmacokinetic parameters in rats were calculated and compared by statistical analysis. Serum glutamic pyruvic transaminase (SGPT) and Serum glutamic oxaloacetic transaminase (SGOT) were elevated. Results: The DXM nanoparticles were successfully prepared using double emulsion solvent evaporation technique. The nanoparticle formulations effectively sustained the release of the drug for more than 10 days both in vitro and in vivo. They also offered better pharmacokinetic properties to the drug than that afforded by the free drug itself. Intravenous nanoparticular administration reversed serum liver enzyme levels by 92%, compared to 60% for repeated *iv* administration of the solution form. Conclusion: DXM Nanoparticles showed better pharmacokinetic properties and had better prevention of liver toxicity when compared with solution.

KEYWORDS: Dexamethasone, Nanoparticles, Pharmacokinetics, Pharmacodynamics, Hepatoprotection.

INTRODUCTION:

The liver, which is the major organ responsible for the metabolism of drugs, toxic chemicals and byproducts endogenous to the body, is also the primary target organ for detoxication of many endogenous and exogenous toxic chemicals[1,2]. The proportion of major liver diseases, such as non-alcoholic and alcoholic fatty liver, chronic hepatitis, fibrosis, cirrhosis or hepatic carcinoma leads to a severe death causing diseases in both human beings and animals[3]. Hepatic fibrosis is the accumulation of extracellular matrix, or scar, in response to acute or chronic liver injury. Fibrogenesis represents a wound healing response to injury, and ultimately leads to cirrhosis. Cirrhosis, the end state of the fibrotic process, is characterized by dramatic accumulation of ECM in the liver resulting in nodule formation[4]. There is no standard treatment for liver fibrosis[5]. Thus there is a need to find effective treatment for fibrosis. The ideal antifibrotic

Received on 28.02.2020 Modified on 18.04.2020
Accepted on 21.05.2020
Research J. Pharm. and Tech. 2020; 13(12):6098-6104.
DOI: 10.5958/0974-360X.2020.01063.X

|| Print ISSN: 2589-7837 || Online ISSN: 2581-3935 ||
International Journal of Medical Science and Diagnosis Research (IJMSDR)
Available Online at www.ijmsdr.com
NLM (National Library of Medicine ID: 101738824)
Original Research Article
Volume 4, Issue 9; September: 2020; Page No. 21-25

ASSESSMENT OF DIFFERENT TREATMENT PATTERNS IN MIGRAINE WITH CO-MORBIDITIES

B. Shravani[1*], R. Rasmitha[1], E. Srinivas Rao[2], A. Gouthami[3]
[1*] Pharm D Intern, Department of pharmacy practice, Vaagdevi Pharmacy College
[1] Pharm D Intern, Department of pharmacy practice, Vaagdevi Pharmacy College
[2] MS, MCH, Neurology, Srinivasa Pinnacle, Hanamkonda
[3] Pharm D, Assistant Professor, Vaagdevi Pharmacy College

Conflicts of Interest: Nil

Corresponding Author: B. Shravani

DOI: https://doi.org/10.32553/ijmsdr.v4i9.673

Abstract:

Objective: To provide effective treatment pattern based on individual patient response, pharmacological and non-pharmacological treatment strategies, effective patient counseling for obtaining adherence to medication.

Methodology: A prospective observational study was conducted in outpatient department of neuro care center for a period of six months.

Results: Out of 1000 patients, Female ratio (86.9%) was high in age group 31-50 years (47%). Non-compliance to medication (21.1%) was seen which may be the cause for recurrent migraine and response to migraine treatment. We have taken 2 types of treatment patterns which include FPANR and DPANR. In which, FPANR were 85.1% and DPANR were 14.9%. Statistical analysis was also done based on chi-square test, odd's ratio, standard deviation. Using chi-square & odd's ratio statistical analytical methods the values for migraine types were found to be 0.2735 & 0.8849 respectively with 95% confidence interval of value 0.559-1.4. Using chi-square & odd's ratio statistical analytical methods the values for treatment pattern were found to be 0.1853 & 0.8954 respectively with 95% confidence interval of value 0.54-1.4.

Conclusion: Female ratio was high compared to male and was significantly high in 31-50 years of age which might be due to skipped breakfasts, fasting, hormonal imbalances, stress. Medication adherence was found to be very low which might be one of the major factors for recurrent episodes of migraine & response to migraine treatment. Clinical pharmacist plays an important role in treatment and management of headache disorders. They can also provide insight and patient counselling to help prevent or reduce the risk of medication overuse and educating them on medication adherence, triggering factors, and acute treatment.

Introduction:

Migraine is a benign episodic syndrome of headache associated with other neurological symptoms. Secondary to tension type it is the most common cause of headache affecting approximately ~15% of women and 6% of men annually. Classic triad includes

(1) Pre-monitory visual, sensory and motor symptoms
(2) Unilateral throbbing headache
(3) Nausea and Vomiting.

Most of the patients do not have visual aura or other premonitory symptoms, photo and phonophobia are in common. Attacks may be triggered by glare, bright lights, sounds, hunger, stress, physical exertion, hormonal fluctuations, lack of sleep, alcohol, or other chemical stimulation.

Simplified diagnostic criteria for migraine:

At least two of the following features	Plus at least one of the following features
Unilateral pain	Nausea or vomiting
Throbbing pain	Photophobia or phonophobia
Aggravated by movement	
Moderate or severe intensity	

Treatment pattern: There are 3 approaches to migraine treatment

- Non-Pharmacological (avoidance of patient-specific triggers).
- Pharmacological -Drug treatment of acute attacks (Analgesics, NSAIDS, Triptans)
- Prophylaxis (Beta Blockers, Anti-Depressants, Anti-Convulsants)(1)

Establish realistic expectations: When patients are introduced to migraine prophylaxis, they may expect that attacks will cease soon after Starting treatment but most established therapies have treatment latencies. The patient should be involved in the process to help establish individual treatment expectations. Thus, it is crucial that patients understand that any of the following can define success in migraine prevention.

- 50% reduction in the frequency of days with headache or migraine
- Significant decrease in attack duration as defined by patient
- Significant decrease in attack severity as defined by patient

Content available at: https://www.ipinnovative.com/open-access-journals

Indian Journal of Obstetrics and Gynecology Research

Journal homepage: www.ijogr.org

Original Research Article

Therapeutic goals of terminaton and their efficacy in patients

Manjula Pathri[1], Pasham Lasya Priya[2,*], Konatham Arundhathi[2], T Ravichander[2], Tejaswi[3]

[1]*Dept. of Obstetrics and Gynaecology, Government Maternity Hospital, Warangal, Telangana, India*
[2]*Dept. of Clinical Pharmacy, Vaagdevi Pharmacy College, Warangal, Telangana, India*
[3]*Dept. of Clinical Pharmacy*

ARTICLE INFO

Article history:
Received 22-08-2020
Accepted 29-08-2020
Available online 07-12-2020

Keywords:
Termination
Mifepristone
Misoprostol
Dilatation and curettage

ABSTRACT

Background and Objectives: The purpose of this study is to provide the most safest, effective and cost-effective method with least or no complications in both first and second trimester.
Induction abortion can be done either by medical or surgical methods. Medical method of abortion has advantages over surgical methods. The morbidity of the second trimester abortion continues to be more than the morbidity of first trimester termination. Causes for termination in Telangana region include oral contraceptive failure, Fetal anomalies, Lack of knowledge on termination procedure.
Materials and Methods: A Prospective observational study was conducted for 6 months, a total of 120 women in the first and second trimester of pregnancy who are eligible for termination following inclusion and exclusion criteria were included, the women attending at, Govt. maternity Hospital, Hanamkonda, Warangal. The main outcome in studied were, induction abortion interval, incidence of side-effects, success rates, pain pattern and bleeding pattern.
Results: For first trimester abortion mifepristone followed by misoprostol is found to be more effective, has shorter induction abortion interval and lesser side effects compared to misoprostol alone, D&C regimen. For second trimester abortion misoprostol is found to be more effective, has shorter induction abortion interval and lesser side effects compared to D&C, Foley's catheter, Hysterotomy regimens.
Conclusions: All methods used in the department showed efficacy and it does not effect on conceiving rate of women.

1. Introduction

Abortion is removal of embryo or fetus which weighs 500 g or less which is not capable of independent survival.[1] Medical method of abortion has less success rate than that of surgical abortion.[2-5] In India, every year at about 6 millions of abortions takes place were 4 million are induced and 2 million are spontaneous.[6] At about 70,000 women yearly were killed by unsafe abortion which was estimated by WHO. The most effective, fastest and safest method was combination of mifepristone and misoprostol.[7] For management of second trimester termination the medical induction has become the mainstay.[8,9] In Recent scenario, MTP Amendment Bill, 2020 seeks that termination of pregnancy period extended from 20 weeks to 24 weeks, making it easier for the women to get legally and safely terminate an unwanted pregnancy.[10]

2. Aim of the Study

1. To compare efficacy and safety for termination of pregnancy in first and second trimester.
2. To determine shortest induction abortion interval between groups.
3. To assess the safety of drugs.
4. To evaluate pain pattern and bleeding pattern.

* *Corresponding author.*
E-mail address: lasyapasham4@gmail.com (P. L. Priya).

https://doi.org/10.18231/j.ijogr.2020.110
2394-2746/© 2020 Innovative Publication, All rights reserved.

Available online on 15.01.2021 at http://jddtonline.info

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

Review Article

Bioadhesive polymers, permeation enhancers and types of dosage forms for buccal drug delivery

Kumara Swamy Samanthula[1]*, Shobha Rani Satla[2], Agaiah Goud Bairi[3]

[1]*Vaagdevi Pharmacy College, Bollikunta, Warangal, India*

[2]*Centre for Pharmaceutical Sciences, IST, JNTU, Kukatpally, Hyderabad, India*

[3]*SR College of Pharmaceutical Sciences, Vathhapur, Warangal, India*

Article Info

Article History:
Received 06 Oct 2020;
Review Completed 19 Dec 2020
Accepted 27 Dec 2020;
Available online 15 Jan 2021

Cite this article as:
Samanthula KS, Satla SR, Bairi AG, Bioadhesive polymers, permeation enhancers and types of dosage forms for buccal drug delivery, Journal of Drug Delivery and Therapeutics. 2021; 11(1):138-145
DOI: http://dx.doi.org/10.22270/jddt.v11i1.4495

*Address for Correspondence:
Kumara Swamy Samanthula, Vaagdevi Pharmacy College, Bollikunta, Warangal, India

Abstract

The buccal delivery is defined as the drug administration through the mucosal membranes lining the cheeks (buccal mucosa). The main impediment to the use of many hydrophilic macromolecular drugs as potential therapeutic agents is their inadequate and erratic oral absorption. Based on our current understanding of biochemical and physiological aspects of absorption and metabolism of many biotechnologically produced drugs, they cannot be delivered effectively through the conventional oral route. Because after oral administration many drugs are subjected to pre-systemic clearance extensive in the liver, which often leads to a lack of significant correlation between membrane permeability, absorption and bioavailability. Difficulties associated with the parenteral delivery and poor oral bioavailability provided the impetus for exploring alternative routes for the delivery of such drugs. This review covers the advantages, disadvantages of buccal delivery, drug and excipient selection especially bioadhesive polymers and permeation enhancers, and further a list of drugs developed at various dosage forms for buccal route of administration.

Keywords: Buccal delivery, bioadhesive/mucoadhesive, permeation enhancer, dosage forms.

Introduction

Conventional oral drug delivery has been known for decades as the most widely utilized route of administration among all the routes[1, 2]. It remains the preferred route of administration in the discovery and development of new drug candidates and formulation. The popularity of the oral route is attributed to patient acceptance, ease of administration accurate dosing, cost effective manufacturing methods, and generally improve the shelf-life of the product[3-5]. In recent years, the interest in novel routes of drug administration occurs from their ability to enhance the bioavailability of drugs[6-9].

The concept of mucosal-adhesive or mucoadhesive was introduced into the controlled drug delivery in the early 1980's. Bioadhesive polyacrylic acid nanoparticles are an example of a novel drug delivery system designed for mucosal and topical drug delivery[10,11]. Mucoadhesive polymers are synthetic or natural polymers, which interact with the mucus layer covering the mucosal epithelial surface and mucin molecules constituting a major part of mucus[12]. They render the treatment more effective and safe, not only for topical disorders but also for systemic problems[13,14]. These dosage forms are self-administrable, cheap and have superior patient compliance. With the right dosage form design, the local environment of the mucosa can be controlled and manipulated in order to optimize the rate of drug dissolution and permeation[15].

Drugs can be absorbed from the oral cavity through the oral mucosa either sublingually or buccal. Buccal drug delivery was introduced by Grabase in 1947, when gum tragacanth was mixed with dental adhesive powder to supply penicillin to the oral mucosa[16]. In recent years, delivery of therapeutic agents through various transmucosal routes has gained significant attention. Buccal delivery of drugs provides an attractive alternative to the oral route of drug administration, particularly in overcoming deficiencies associated with the latter mode of dosing[17]. Extensive first-pass metabolism and drug degradation in the harsh gastro intestinal environment can be circumvented by administering the drug via buccal route and also other lipid carrier systems[18,19].

The buccal delivery is defined as the drug administration through the mucosal membranes lining the cheeks (buccal mucosa). The main impediment to the use of many hydrophilic macromolecular drugs as potential therapeutic agents is their inadequate and erratic oral absorption[20]. Based on our current understanding of biochemical and physiological aspects of absorption and metabolism of many biotechnologically- produced drugs, they cannot be delivered effectively through the conventional oral route. Because after oral administration many drugs are subjected

Available online on 15.01.2021 at http://jddtonline.info

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

Research Article

Muco-adhesive buccal tablets of candesartan cilexetil for oral delivery: preparation, in-vitro and ex-vivo evaluation

Kumara Swamy Samanthula[1]*, Agaiah Goud Bairi[2], Mahendra Kumar CB[3]

[1] Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India

[2] S.R.R College of Pharmaceutical Sciences, Vallabapur, Warangal, Telangana, India

[3] St. Mary's College of Pharmacy, Secunderabad, Telangana, India

Article Info:

Article History:

Received 11 Dec, 2020;
Review Completed 18 Jan 2021
Accepted 25 Jan 2021;
Available online 15 Feb 2021

Cite this article as:

Samanthula KS, Bairi AG, Muco-adhesive buccal tablets of candesartan cilexetil for oral delivery: preparation, in-vitro and ex-vivo evaluation, Journal of Drug Delivery and Therapeutics. 2021; 11(1-s):35-42
DOI: http://dx.doi.org/10.22270/jddt.v11i1-s.4547

*Address for Correspondence:

Kumara Swamy Samanthula, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India

Abstract

Candesartan cilexetil (CC) is an angiotensin II-receptor blocker (ARB). The antihypertensive effect of CC 4-16 mg/day was as great as that of other once-daily dosage regimens. Candesartan cilexetil has high first-pass metabolism and low oral bioavailability. The bioavailability of such drugs may be significantly improved if delivered through the buccal route; hence mucosal delivery is one of the alternative methods of systemic drug delivery. This study's objective was to develop mucoadhesive buccal tablets of candesartan cilexetil using carbopol-934P, hydroxyl propyl methyl cellulose (HPMC), Eudragit RLPO, and sodium carboxy methyl cellulose (Na-CMC) as mucoadhesive polymers. Prepared CC buccal tablet formulations were evaluated for an optimized system based on physicochemical properties, ex-vivo residence time, in-vitro, and ex vivo permeation studies. The evaluation parameters of the tablets were within the acceptable Pharmacopoeial limits. However, the swelling and bio-adhesive time were increased with increasing polymer concentrations. The in-vitro release research shown that buccal tablets with sodium carboxy methyl cellulose (Na-CMC) exhibited a higher release than all other formulations and have been considered as optimized CC formulation. The release mechanism from kinetic methods suggests that the drug release follows zero-order kinetics with a diffusion mechanism. Further, in-vivo research in animal fashions is required to prove the bioavailability performance of the formulation.

Keywords: Candesartan cilexetil, mucoadhesive buccal tablets, first-pass metabolism, bioavailability.

INTRODUCTION:

In the past three decades, there is a splendid interest in researching buccal drug transport systems. The oral cavity is effortlessly acceptable for self-medication of drugs and is nicely popular among patients[1]. The oral cavity space is the most appealing path for drug transport due to its ease of management. This path may administer each locally performing and appearing systemic drugs. The mucosa drug's site-precise release is accomplished while used for local activity, and systemic action expects for drug absorption through the mucosal barrier to reach systemic flow[2]. The oral route is the maximum favored and widely relevant direction for delivering the majority of the medicine.

However, problems such as less residence time, poor aqueous solubility, and chemical instability in the gastrointestinal tract minimize orally administered medicines' bioavailability[3]. Further, metabolism through diverse obstacles or enzymes also degrades the drug earlier than attaining the site of action. The buccal mucosa has been investigated for therapeutic agents subjected to first bypass metabolism and risky inside the rest of the gastrointestinal tract[4,5]. The mucosal lining of the oral cavity and nasal cavity gives a few excellent benefits[6]. It has primarily vascularized, and buccal drug transport has high patient acceptability. Hence, diverse alternative drug delivery systems are evolved to enhance the oral bioavailability of those medicines.

Oral mucosal drug delivery is one of the alternative systemic drug absorption strategies that offer decorate drug bioavailability[7,8]. The bioavailability of such medicines can be considerably progressed if added through a buccal pathway. Recently much attention has been focused on the design, development, and evaluation of buccal drug transport systems preserving in view their potential for the future market[9,10].

Candesartan cilexetil (CC) is selective angiotensin (AT) type-1 receptor antagonist used in the treatment of high blood pressure and congestive heart failure. It selectively blocks the binding of angiotensin II to AT1 in the majority of the wall of blood vessels tissues like vascular smooth muscle and the adrenal glands[11]. It inhibits the AT 1-mediated vasoconstrictive and aldosterone-secreting consequences of angiotensin II and consequences in an overall decrease in blood pressure[12]. However, its broad first-pass metabolism results in poor bioavailability i.e. ≈15%. It has a plasma half-life of nine hours and peak plasma concentration reaches within three to four hours. It can be given once or twice day

Available online on 15.04.2021 at http://jddtonline.info

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

Research Paper

Preparation, *In Vitro* characterization and stability studies of ropinirole lipid nanoparticles enriched hydrogel for treatment of neurodegeneration diseases

Kumara Swamy Samanthula, Ramesh Alli, Thirupathi Gorre*

Department of Pharmaceutics, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana State, India

All authors contributed equal to this work

Article Info:

Article History

Received 09 Feb 2021
Review Completed 23 March 2021
Accepted 30 March 2021
Available online 15 April 2021

Cite this article as:

Samanthula KS, Alli R, Gorre T, Preparation, *In Vitro* characterization and stability studies of ropinirole lipid nanoparticles enriched hydrogel for treatment of neurodegeneration diseases, Journal of Drug Delivery and Therapeutics. 2021; 11(2-s):66-75
DOI: http://dx.doi.org/10.22270/jddt.v11i2-s.4648

*Address for Correspondence:

Thirupathi Gorre, Department of Pharmaceutics, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana State, India

Abstract

Ropinirole (RP), is a selective dopamine agonist that is used alone or with other medications to treat the symptoms of Parkinson's disease (PD). RP has low bioavailability of only about 50% due to the first-pass metabolism, and it requires frequent dosing during oral administration. The objective of the current research was to develop RP loaded solid lipid nanoparticles (RP-SLNs), nanostructured lipid carriers (RP-NLCs), and their corresponding hydrogels (RP-SLN-C and RP-NLC-C) that might improve efficacy in PD treatment. RP nanoparticles were prepared by homogenization aided probe sonication method and optimized based on particle size, polydispersity index (PDI), zeta potential (ZP), assay, entrapment efficiency, and in vitro release studies. Optimized formulations were converted to hydrogel formulations using Carbopol 934 as a gelling polymer and optimized based on rheological and release characteristics. Optimized formulations were further evaluated using differential scanning calorimetry (DSC), powder X-ray diffractometry (PXRD), scanning electron microscopy (SEM), freeze-drying, and stability study at refrigerated and room temperatures. The optimized RP-SLN formulation showed particle size and entrapment efficiency of 213.5±3.9 nm and 77.9±3.1% compared to 190.6±3.7 nm and 85.7±1.7% for optimized RP-NLC formulation. PXRD supplemented and confirmed DSC results, RP was entrapped in a molecularly dispersed state inside the core of the lipid nanocarrier. Furthermore, RP loaded lipid nanocarriers revealed a spherical shape in SEM images. *In vitro* release studies demonstrated sustained release profiles for RP from SLNs, NLCs, and their hydrogels over 24 h and were stable over three months at 4°C and 25°C storage conditions.

Keywords: Parkinson's disease, Ropinirole, Solid lipid nanoparticles, Nanostructured lipid carriers, Hydrogel

INTRODUCTION:

Parkinson's disease (PD) is the second most common age-related degenerative disease of the central nervous system and represents the most common movement disorder[1]. PD affects 1-2 per 1000 of the population at any time. PD prevalence is increasing with age and PD affects 1% of the population above 60 years[2]. PD is usually gradual, with symptoms becoming more severe over time[3]. About one million Americans are thought to have PD. This is more than those affected by multiple sclerosis (MS), muscular dystrophy (MD), and amyotrophic lateral sclerosis (ALS) combined. PD is characterized by tremor, rigidity, postural abnormalities, stooped posture, bradykinesia, akinesia, and festinating gait[3]. The significant pathological change in patients with PD is the loss of melanin-containing dopaminergic neurons in the zona compacta of the substantia nigra[4]. These pigmented neurons have been identified as nigrostriatal dopamine neurons; loss of these neurons results in a decrease of dopamine content in the striatum[4].

RP is a new non-ergoline D2/D3 dopamine receptor agonist, binds specifically to D2-receptors in striatum and substantia nigra, with selectivity similar to that of dopamine. It is supposed to induce its antiparkinsonian action via enhancing striatal neuronal dismissal rates through selective stimulation of D2-dopamine receptors. RP is also used for the treatment of restless leg syndrome. When taken as oral tablets, RP has poor oral bioavailability (~50%) due to extensive hepatic first-pass metabolism, with a plasma half-life of approximately 5.8 h and t_{max} which is less than one hour. Currently, RP conventional oral tablet dosage form with 3-9 mg tablet strength is available in the market, is showing low oral bioavailability. Intravenous administration is very irritating and is not recommended[5-7]. Therefore, alternative routes and drug delivery systems are required to improve its therapeutic outcomes. Further, RP can be administered as a monotherapy as well as combination therapy with levodopa because it can help in the reduction of the administered dose of levodopa. The continuous delivery of RP from the transdermal system may delay or prevent the onset of levodopa related motor complications due to continuous dopaminergic stimulation[8]. It could be anticipated that a once-daily regimen shall significantly increase patient compliance while at the same time reducing the burden of the caregiver[9]. Therefore, in the current

Formulation and Evaluation of Fexofenadine Hydrochloride Lozenges

Shiva Kumar Ravula[1*], Gannu Praveen[1], Prof. Y. Madhusudan rao[2]

1. Department of Pharmaceutics, Vaagdevi Pharmacy College, Bollikunta, Warangal-506005.

2. Sahasra Institute of Pharmaceutical Sciences,Warangal-506002.

Corresponding Author address:

Shiva Kumar Ravula,

Vaagdevi Pharmacy College,

Bollikunta,Warangal-506009

Mobile: 7893253537

*For Correspondence: shivasmile2017@gmail.com

ABSTRACT

Fexofenadine Hydrochloride was formulated as lozenges to provide slow release medicament for the management of cold and allergic rhinitis. There are many dosage forms like syrups, tablets, ODT's available in the market but still there is a need for new dosage forms which acts effectively and locally for paediatrics and people with difficulty in swallowing. So the present investigation has been taken up to design, prepare and evaluate the hard candy lozenges to meet the need of improved bioavailability. These prepared lozenges can show increase in bioavailability, reduction in gastric irritation, avoidance of first pass metabolism and increase in onset of action. The lozenges were prepared using sucrose as base Hydroxy Propyl Methyl Cellulose K4M (HPMC) and Hydroxy Ethyl Cellulose (HEC) are used as polymers. Aspartame and saccharin are used as artificial sweeteners. Sweeteners along with flavours are used to mask the bitter taste of drug. All the formulations prepared were subjected to various physicochemical parameters like hardness, moisture content, friability, weight variation, content uniformity etc. and were in Pharamacoepial limits. The prepared formulations have a hardness of 8-11 Kg/cm², non gritty, pleasant mouth feel. Some selected formulations were tested for drug excipients interactions subjecting to FTIR Spectral analysis which showed that there was no interaction between the selected drug and polymers. *In vitro* drug dissolution studies showed least of 64.88 % for F4 and maximum of 99.39 % of release for F2 formulation following zero order release in 25 min. The moulded lozenges can provide an attractive alternative formulation in allergic conditions.

Keywords: Lozenges, Fexofenadine Hydrochloride, HPMC K4M, cold and allergic rhinitis

Abbreviations: FXD (Fexofenadine Hydrochloride), HPMC K4M (Hydroxy Propyl Methyl Cellulose), HEC (Hydroxy Ethyl Cellulose), FTIR (Fourier Transform Infrared).

INTRODUCTION

Lozenges are solid preparations that contain one or more medicaments, usually in a flavoured, sweetened base, and are intended to dissolve slowly in the mouth or pharynx (Peters, D.2005).They are intended to treat local irritation of mouth or pharynx and may also be used for systemic drug absorption (Peters, D.2005). (Mendes, RW, Bhargava H. et al., 2006). Lozenges are intended to achieve local effect as soothing and purging the throat. Sometimes they are used to relieve cough.

Most of the lozenge preparations are available as Over the Counter medications. Lozenge provides a palatable means of dosage form administration and enjoys its position in pharmaceutical

International Journal of Pharmacy and Biological Sciences-IJPBS™ (2021) 11 (2): 138-
Online ISSN: 2230-7605, Print ISSN: 2321-3272
Research Article | Pharmaceutical Sciences | OA Journal | MCI Approved | Index Copernicus

Development, *in-vitro* and *in-vivo* Evaluation of Bio-Adhesive Buccal Patches of Hydralazine Hydrochloride for Improving the Oral Bioavailability

Kumara Swamy Samanthula[1]*, Agaiah Goud Bairi[2] and Mahendra Kumar CB[3]

[1]Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India.
[2]SRR College of Pharmaceutical Sciences, Vaibhapur, Warangal, Telangana, India.
[3]St. Mary's College of Pharmacy, Secunderabad, Telangana, India.

Received: 10 Jan 2021 / Accepted: 8 March 2021 / Published online: 01 April 2021
*Corresponding Author Email: kumar6oty@gmail.com

Abstract

Background: Conventional routes of drug administration have several disadvantages. The rate and extent of absorption can vary greatly depending on the drug, its formulation, the presence of food, drug interactions, first-pass metabolism, and gastrointestinal pH. Better dosage forms or drug delivery mechanisms could minimize these problems. The pharmaceutical industry has recognized the need for and has developed many new, novel drug delivery systems. Transmucosal drug delivery can result in rapid drug absorption and systemic delivery. Several drugs and drug classes have been studied to determine the feasibility of using buccal dosage forms as a novel route of drug delivery. This study will focus on the systemic delivery of Hydralazine Hydrochloride (HHCl) via a buccal route. **Objective:** This work aims for the preparation of buccal patches of higher absorption and higher bioavailability for rapid control of blood pressure in hypertensive emergencies. The bioavailability of HHCl, when administered buccally, will be compared to the conventional oral route of administration. **Methods:** The present research aimed to develop and evaluate the mucoadhesive buccal patches of Hydralazine hydrochloride by solvent casting technique using HPMC E15 or Eudragit RL 100 and PVP K 30 polymers. **Results:** All the prepared buccal patches were subjected to various evaluation tests and the results of the tests were found to be within the pharmacopeial limits. The swelling study, bioadhesion time, in-vitro and ex-vivo drug permeation studies also appeared good results and the optimized formulation was subjected for bioavailability studies in healthy male rabbits. The pharmacokinetic profile of designed HHCl buccal patches was also showed a maximum plasma concentration (Cmax) and AUC $_{0-t}$ were found to be 1075.031±255.15 ng/ml and 42874.508±3903.14 ngh/ml. Whereas the administration of an oral solution of HHCl showed a maximum plasma concentration (Cmax) of 614.732±79.274 ng/ml and AUC$_{0-t}$ were found to be 19408.299±1802.48 ng h/ml. **Conclusion:** This research study demonstrated that developed buccal patches were efficacious could be delivered through the buccal route as it indicates a potential alternative drug delivery system for systemic delivery of HHCl. These results confirm the suitability of the prepared buccal patches to improve the bioavailability by avoiding the hepatic first-pass metabolism and thereby reducing metabolite-dependent adverse drug effects.

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal-506005

VAAGDEVI PHARMACY COLLEGE
Bollikunta, WARANGAL - 506 005

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal - 506 005

Cefotaxime Induced Staphylococcal Scalded Skin Syndrome: A Case Report

Shirisha Jakkula[1], Satish Chinnala[1], Shravani Komuravelly[1], Venkateshwarlu Eggadi[1,*]

[1]Department of Clinical Pharmacy and Pharm.D, Vaagdevi College of Pharmacy, Mahatma Gandhi Memorial Hospital, Warangal, Telangana, INDIA.
[*]Department of Clinical Pharmacy and Pharm.D, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, INDIA.

ABSTRACT

Staphylococcal Scalded Skin Syndrome (SSSS) is as well called as Ritter von Ritterschein disease, Lyell disease, Ritter disease and staphylococcal necrolysis of the epidermis. More common in neonates and children of age less than five years and are at a greater risk of SSSS. To fight against SSSS, children should attain lifetime immunity in the form of antibodies against exotoxins of staphylococcal strains. Symptoms include fever and redness on the overall surface of skin. Within 24-48h, fluid-filled blisters appear on the body. We report a case of 2-year-old male child developed SSSS after intravenous administration of Cefotaxime.

Key words: Staphylococcal scalded skin syndrome, Immunity, Exotoxins, Cefotaxime, Exfoliative, Cephalosporins.

INTRODUCTION

Staphylococcal Scalded Skin Syndrome is one of the major exfoliating skin infections. Mainly caused by Staphylococcus and the skin looks as if it has been burnt by a hot liquid.[1] Due to the lack of immunity and underdeveloped renal clearance, there is a greater chance of SSSS in children.[2]

Two exfoliating toxins A and B which are released from *Staphylococcus aureus*, but the mechanism for exfoliation is unclear until today. Beneath the granular cell layer, separation of the epidermis and red rash occurs when these toxins act at a remote layer.[3] Two types of SSSS exist localized form superficial involvement of skin and a generalized form involvement of significant areas. Localized infection of *Staphylococcus aureus* in the skin, nose, mouth, throat, umbilicus and gastrointestinal tract (GIT). General malaise, irritability, fever, skin tenderness may be prominent. Other signs include facial edema, conjunctivitis and perioral crusting.[4]

Cephalosporin's are used as a prophylactic treatment in many patients because of their β- lactamase stability, lack of toxicity and broad-spectrum.[5] Cefotaxime is a third-generation cephalosporin antibiotic.[6] Here we discuss a case of SSSS due to Intravenous Cefotaxime administration.

CASE REPORT

A two years old male child who was hospitalized in the Pediatric Department for fever since 3 days, facial puffiness, 2 episodes of vomiting containing food for 1 day, Swelling of legs and feet for 2 days. Then the patient was given Cefotaxime 280mg IV, Paracetamol 5ml syrup, Cetirizine 5ml syrup.

After two days, the patient developed pedal edema and rashes on legs. The physician stopped the medication and the patient was referred to dermatology. On general examination child was conscious, febrile. His pulse rate was 146/min and blood pressure was 90/50mmHg. Physical examination revealed multiple fluid-filled vesicles and bullae noted on the lower limbs and hyperpigmented lesions noted on the face (Figure 1 and Figure 2). On admission

DOI: 10.5530/ijopp.14.2.29

Address for correspondence:
Venkateshwarlu Eggadi,
Professor and Head,
Department of Clinical Pharmacy and Pharm.D, Vaagdevi College of Pharmacy, Mahatma Gandhi Memorial Hospital, Warangal-506005, Telangana, INDIA.
Phone no: +91 9848835032
Email id: eggadivenkey@gmail.com

www.ijopp.org

Current Nanomedicine

VOLUME 11, 2021

ISSN: 2468-1881 (Online) - ISSN: 2468-1873 (Print)

BENTHAM SCIENCE

Preliminary Studies On Optimization Of Anti-Parkinson Drug Loaded Lipid Nanoparticles Enriched Hydrogel Formulations For Management Of Parkinson's Disease.

Authors:

Kumara Swamy, Ramesh Alli and Thirupathi Gorre

Affiliation:

Department of Pharmaceutics, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana State

Abstract:

Purpose: Ropinirole (RP), is a selective dopamine agonist that is used alone or with other medications to treat the symptoms of Parkinson's disease (PD). RP has low bioavailability of only about 50% due to the first-pass metabolism, and it requires frequent dosing during oral administration.

Aim: The objective of the current research was to develop RP loaded solid lipid nanoparticles (RP-SLNs), nanostructured lipid carriers (RP-NLCs), and their corresponding hydrogels (RP-SLN-C and RP-NLC-C) that could enhance RP therapeutic outcomes during PD treatment.

Methods: RP nanoparticles were prepared by homogenization followed by probe sonication and optimized based on particle size, polydispersity index (PDI), zeta potential (ZP), % assay, % entrapment efficiency, and in vitro release studies. Optimized formulations were converted to hydrogel formulations using Carbopol 934 as a gelling polymer and optimized based on rheological and release characteristics. Optimized formulations were further evaluated using differential scanning calorimetry (DSC), powder X-ray diffractometry (PXRD), scanning electron microscopy (SEM), freeze-drying, and stability study at refrigerated and room temperatures.

Results: The optimized RP-SLN formulation showed particle size and entrapment efficiency of 213.5±3.8 nm and 77.9±3.1% compared to 190.6±3.7 nm and 85.7±1.7% for optimized RP-NLC formulation. PXRD supplemented and confirmed DSC results. RP was entrapped in a molecularly dispersed state inside the core of the lipid nanocarrier. Furthermore, RP loaded lipid nanocarriers revealed a spherical shape in SEM images. In vitro release studies demonstrated sustained release profiles for RP from SLNs, NLCs, and their hydrogels over 24 h. Optimized SLN, NLC, and nanocarrier loaded hydrogel formulations were stable over three months at 4ºC and 25ºC storage conditions.

Conclusion: Overall, the results demonstrated that lipid nanocarriers and their corresponding hydrogel formulations can be considered as a topical drug delivery vehicle for RP during the treatment of PD.

VAAGDEVI PHARMACY COLLEGE

Principal
Vaagdevi Pharmacy College
Bollikunta, Warangal

International Journal of Pharmaceutical Biological and Chemical Sciences (IJPBCS)
ISSN: 2278-5191 (Online)
IJPBCS | VOLUME 10| ISSUE 2 | APR-JUN 2021 | 01-10
Original Research Article – Pharmaceutical Sciences

DEVELOPMENT *IN-VITRO* AND *EX-VIVO* CHARACTERIZATION OF BIO-ADHESIVE BUCCAL TABLETS OF METOPROLOL SUCCINATE FOR A PROMISING CHOICE IN HYPERTENSION TREATMENT

Kumara Swamy Samanthula[1]*, Agaiah Goud Bairi[2] and Mahendra Kumar CB[3]

[1]Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India.
[2]SRR College of Pharmaceutical Sciences, Valbhapur, Warangal, Telangana, India.
[3]St. Mary's College of Pharmacy, Secunderabad, Telangana, India.

*Corresponding Author Email: kumar4hoty@gmail.com

ABSTRACT

The metoprolol succinate bio-adhesive buccal tablets were prepared by using xanthan gum, guar gum and HPMC as rate-controlling polymers. Each three tablet formulation was prepared by using drug and polymers ratios of 1:0.5, 1:0.75, and 1:1 by direct compression techniques. According to the USP pharmacopeial methods, the physicochemical properties of buccal tablets were found satisfactorily. The swelling studies, Surface pH study, mucoadhesion time, bio-adhesive strength, In-vitro and ex-vivo drug release studies were performed for 6 hrs for all the formulations. Among all formulations, the optimized candidates were showed controlled and highest drug release. F8 formulations shown extended drug release, shown maximum drug release of 100.95±1.58 % and sustained up to 6 hrs selected as an optimized formulation. These results confirm the suitability of the prepared buccal dosage forms to improve the bioavailability by avoiding the hepatic first-pass metabolism.

Key words:
Metoprolol succinate, buccal tablets, swelling study, first-pass metabolism, bio-adhesive buccal drug delivery.

INTRODUCTION

Drug delivery using bio-adhesive dosage forms via the buccal route offers a novel route of administration because of the ease of their ability to enhance the patient's convenient bioavailability [1, 2]. Absorption of medicaments from these routes generally overcomes the drug degradation within the gastrointestinal tract as well as active drug loss due to hepatic first-pass metabolism that may be associated with the oral route of administration [3]. Bio-adhesive systems, floating drug delivery systems, swelling and expanding systems are some of the techniques that can be adopted to solve these problems. Bio-adhesion is a current interest field of drug design and development systems. Bio-adhesive buccal drug delivery system prolongs the residence time of the dosage form at the site of application and facilitates the dosage form with absorption [4, 5].

The term "bioadhesion" is the attachment of natural or synthetic material to the mucosal surface. The definition of bio-adhesives or muco-adhesives is the adhesion of a polymeric material to biological or mucosal surfaces [6]. The property of bio-adhesion of certain polymers which become adherent on hydration, that can be used for targeting a drug to a particular region of the body for an extended period. Drug absorption through buccal mucosa is mainly by passive diffusion into the lipoidal membrane. Utilization of mucoadhesive polymers is essential to maintain an intimate and prolonged contact of the formulation with the oral mucosa [7]. The long contact time allows a longer duration for absorption. Another approach to assure therapeutic levels of a drug via the buccal route is to incorporate a penetration enhancer into the formulation.

Buccal delivery system is in safety method of drug utilization because, drug absorption is terminated in case of toxicity through putting off the dosage form from the buccal cavity. The drug at once reaches the systemic circulation thru the inner jugular vein and bypasses the drugs from the hepatic first-bypass metabolism, which ends up in excessive bioavailability [9, 10]. Buccal

ISSN 2231-5705 (Print)
2231-5713 (Online)
DOI: 10.52711/2231-5713.2021.00016

Vol. 11 [Issue-02]
April – June | 2021

Available online at
www.anvpublication.org
www.asianpharmaonline.org

Asian Journal of Pharmacy and Technology
Home page www.ajptonline.com

RESEARCH ARTICLE

Preparation, Characterization and Optimization of Irbesartan Loaded Solid Lipid Nanoparticles for Oral Delivery

Kumara Swamy S[1]*, Ramesh Alli[2]
[1]Asst. Professor, Department of Pharmaceutics, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana State, India.
[2]Department of Pharmaceutics, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana State, India.
*Corresponding Author E-mail: **kumar4koti@gmail.com, rameshalli567@gmail.com**

ABSTRACT:
The purpose of this study was to develop and evaluate irbesartan (IS) loaded solid lipid nanoparticles (SLNs; IS-SLNs) that might enhance the oral bioavailability of IS. IS, an angiotensin-receptor antagonist, used to treat hypertension. However, poor aqueous solubility and poor oral bioavailability has limited therapeutic applications of IS. Components of the SLNs include either of trimyristin/tripalmitin/tristearin/trilaurate/stearic acid/beeswax, and surfactants (Poloxamer 188 and soylecithin). The IS-SLNs were prepared by hot homogenization followed by ultrasonication method and evaluated for particle size, poly dispersity index (PDI), zeta potential (ZP), entrapment efficiency (EE), drug content and *in vitro* drug release. The physical stability of optimized formulation was studied at refrigerated and room temperature for two months. The optimized IS-SLN formulation (F4) had a mean diameter of about 217.6±3.62 nm, PDI of 0.163±0.032, ZP of -28.5±4.12, assay of 99.8±0.51 and EE of 93.68±2.47%. The formulation showed sustained drug release compared with control formulation over 24 h. Optimized formulation was found to be stable over two months. IS-SLN showed nearly spherical in shape using and converted to amorphous form by DSC. Thus, the results conclusively demonstrated SLNs could be considered as an alternative delivery system for the oral bioavailability enhancement of IS.

KEYWORDS: Irbesartan, solid lipid nanoparticles, particle size, *in vitro* release, SEM, DSC.

INTRODUCTION:

The oral bioavailability of poorly water-soluble drugs and drugs prone for first-pass metabolism often exhibit low bioavailability as their absorption could be kinetically-limited by low rates of dissolution and capacity-limited by poor solubility, when these were administered in traditional solid formulations[1].

Problems such as poor solubility or chemical stability in the environment of the gastrointestinal tract, poor permeability through the biological membranes or sensitivity to metabolism are well known to result in the rejection of potential drug candidates as practical products[2,3]. Various approaches have been used to enhance the oral bioavailability of poorly soluble drugs. These approaches includes, enhance the solubility and dissolution rate using solid dispersion by complexation[4-6], liquisolid compacts[7], by avoiding the pre-systemic metabolism using buccal delivery[8-11], semi solid dispersions[12], prolong the drug release using floating delivery[13-15], sustained delivery[16,17], multiunit dosage form[18], reducing the particle size by using micronization and nanonization such as self-emulsifying delivery[19], solid lipid nanoparticles[20], cubosmes[21],

Received on 19.11.2020 Modified on 25.01.2021
Accepted on 11.03.2021
Asian Journal of Pharmacy and Technology. 2021; 11(2): 97-104.
DOI: 10.52711/2231-5713.2021.00016

ISSN 0975-234X (Print)
0975-4377 (Online)
DOI: 10.5271/0975-4377.2021.00030

Vol. 13| Issue-03|
July - September | 2021

Available online at
www.anvpublication.org

Research Journal of Pharmaceutical Dosage Forms and Technology
Home page www.rjpdft.com

RESEARCH ARTICLE

Effect of various Polymers on Drug Release from Mucoadhesive Tablets of Cefixime Trihydrate

Kumara Swamy Samanthula[1], Agaiah Goud Bairi[2], Shobha Rani Satla[3], Mahendra Kumar CB[4]
[1]Vaagdevi Pharmacy College, Bollikunta, Warangal.
[2]SRR College of Pharmaceutical Sciences, Valbhapur, Warangal.
[3]Centre for Pharmaceutical Sciences, IST, JNTU, Kukatpally, Hyderabad.
[4]St. Mary's College of Pharmacy, Secunderabad, Telangana, India.
*Corresponding Author E-mail: **kumar4koty@gmail.com**

ABSTRACT:
Cefixime trihydrate (CT) is a third-generation cephalosporin antibiotic and is used in the management of various infections caused by *Gram* + *ve* as well as *Gram* – *ve* bacteria. It has a plasma half-life of 3-4 h. It has poor oral bioavailability due to hepatic first pass metabolism. Hence, an attempt was made to develop CT mucoadhesive tablets for buccal delivery to avoid first-pass metabolism and improved oral delivery. CT mucoadhesive tablets developed using HPMC K4M, Na-CMC, guar gum and chitosan as rate controlling polymers and mucoadhesive agent, respectively and compressed by direct compression method. The prepared CT mucoadhesive tablets were evaluated for hardness, weight variation, thickness, friability, drug content uniformity, assay, mucoadhesive strength and in vitro release. From the results, all the evaluated parameters were within the pharmacopoeial limits. The in-vitro dissolution studies indicated that the CTmucoadhesive tablets formulation (F2) showed 99.7±1.4 % of drug release after 8 h and chose as the optimized formulation. The kinetic models suggest that the drug release follows Higuchi's kinetics and tablets drug release was controlled by a diffusion mechanism.

KEYWORDS: Cefixime trihydrate, mucoadhesive tablets, polymers, mucoadhesive strength, *in vitro* release, Higuchi.

INTRODUCTION:

Cefixime trihydrate (CT) is an orally active third-generation cephalosporin. Cephalosporins exhibit an extensive variety of functions towards gram-positive and gram-negative microorganisms; these are acted by restrain bacterial wall synthesis[1-3]. Therefore, the remedy is essential with an agent, that has a broad spectrum of functions and is used within the therapy of simple UTI, acute and persistent bronchitis, pharyngitis, otitis media, and gonorrhea.

Received on 06.01.2021 Modified on 20.02.2021
Accepted on 18.03.2021
Res. J. Pharma. Dosage Forms and Tech.2021; 13(3):167-171.
DOI: 10.5271/0975-4377.2021.00030

CT is poorly soluble in water precede its oral administration. It's far slowly and incompletely absorbed from the GIT, ensuing in only 40-50% bioavailability. Approximately 50% of absorbed drug is excreted in the urine in 24 hours and more than 10% of the administered dose is excreted via the bile. The elimination half-life of CT is 3 - 4 hours[4]. The objective of the present study is to determine the properties of polymers as an excipient that would form a gel-like matrix through formulations in tablets and control the release rate of the drug and which was expected to be mucoadhesive[5].

The oral route is the most preferred and widely applicable route for the delivery of majority of the drugs

IJBPAS, September, Special Issue, 2021, 10(9): 275-290

ISSN: 2277–4998

International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)

'A bridge between Laboratory and Reader'

www.ijbpas.com

HEALTH ISSUES OF SMARTPHONE ADDICTION IN COLLEGE STUDENTS

T. RAVI CHANDER*, NALLATEEGALA ANUSHA AND MARRI ALEKHYA

Department of Pharmacy Practice, Vaagdevi Pharmacy College, Bollikunta, Warangal, Telangana, India

*Corresponding Authors: T. Ravi Chander: Email: trc2884@gmail.com

Received 19th May 2021; Revised 4th June 2021; Accepted 9th July 2021; Available online 25th Sept. 2021

https://doi.org/10.31032/IJBPAS/2021/10.9.1021

ABSTRACT

BACKGROUND: The advancement of technology although led to many conveniences in the world, it brought other issues as well. Mobile phone addiction is one of the effects on how technology has ramified people's lives. Owning mobile phone is not something bad, nonetheless, few individuals, indeed who use those devices ensued this 'cell phone addiction' syndrome, and impulsivity disorder like gambling and drug addiction. As high as 67% of smartphone users check their devices for calls, messages, or updates. It shows worrying symptoms on behavioral aspects and has to be controlled.

AIM: To acknowledge the reasons for using smartphone, to evaluate the self recognized effects of gadget addiction, to promote awareness among the students about the negative impacts of smartphone addiction.

MATERIALS AND METHODS: The present study focused on health issues of smartphone usage amongst students pursuing professional courses on a sample of 2000 college going students. The students were given pre-tested questionnaire which contained several features associated to the most common unfavorable mental and physical signs attributed to smartphone usage.

RESULTS: Findings revealed students used the gadget for an average of 6 hrs daily and 3hours daily for their study purpose .The most common symptoms frequently observed are Hearing issues, nomophobia, microbial Contamination, distraction from work, excitation, dependency, headache, depression.