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

S.No	Name of Journal	Links to the paper published in journals
1	Indian Journal of Diabetes and Endocrinology	https://rfppl.co.in/view_abstract.php?id=208&art_id=12891
2	World Journal of Advanced Research and Reviews,	https://wjarr.com/ArchiveIssue-2022-Vol14-Issue3
3	International Journal for Research Trends and Innovation	https://www.ijrti.org/pubcurrentissue.php?v=7&i=7
4	International Journal of Pharmaceutical Research and Applications	https://www.ijprajournal.com/past-issue-volume.php?issueid=38&title=Volume%207%20,%20Issue%203,%20May-Jun%202022
5	Bulletin of Environment, Pharmacology and Life Sciences	https://bepls.com/beplsmay2021/22.pdf
6	International Journal of Pharmacy and Pharmaceutical Sciences	https://journals.innovareacademics.in/index.php/ijpps/article/view/41644/24981
7	International Journal of Science and Research Methodology	https://ijsrm.humanijournals.com/wp-content/uploads/2021/08/11.Shravani-Bethi-Saikrishna-Ankarla-Sathish-Bathula-Nagesh-Adla.pdf
8	World Journal of Pharmacy and Pharmaceutical Sciences	https://storage.googleapis.com/journal-uploads/wjpps/article_issue/1625102198.pdf
9	International Journal of Pharma Sciences and Research	http://www.ijpsr.info/docs/IJPSR21-12-02-006.pdf
10	International Journal of Pharmaceutical Research and Applications	http://www.ijprajournal.com
11	Paripex-Indian Journal of Research	https://www.worldwidejournals.com/paripex/issues.php?m=August&y=2021&id=122
12	Bulletin of Pharmaceutical Sciences	https://bpsa.journals.ekb.eg/article_207157.html
13	Indian Journal of Pharmacy Practice	https://www.ijopp.org/v14/i2
14	Indian Journal of Pharmacy Practice	https://www.ijopp.org/v14/i3

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15	International Journal of Scientific Reports	https://www.sci-rep.com/index.php/scirep/article/view/873
16	asian journal of pharmaceutical and clinical research	https://journals.innovareacademics.in/index.php/ajpcr/article/view/38102
17	Rapports De Pharmacie	http://www.pharmreports.com/vol6issue02.php
18	Rapports De Pharmacie	http://www.pharmreports.com/vol6issue02.php
19	Rapports De Pharmacie	http://www.pharmreports.com/vol6issue02.php
20	Rapports De Pharmacie	http://www.pharmreports.com/vol6issue02.php
21	International Educational Applied Research Journal	https://iearjc.com/month/may-2020/
22	American Journal of Molecular Biology,	https://www.scirp.org/journal/paperinformation.aspx?paperid=97036
23	International Journal of Science and Research	https://www.ijsr.net/issue.php?edition=Volume%209%20Issue%209,%20September%202020
24	Journal of Chemical and Pharmaceutical Sciences	http://www.jchps.com/past_issues.php?volid=18&issueid=52&year=2020
25	Iraqi Journal of Science	https://www.iasj.net/iasj/download/76c7da59436ac1f9
26	Saudi Journal of Medical and Pharmaceutical Sciences	https://saudijournals.com/journal-details/simps/42/342
27	Saudi Journal of Medical and Pharmaceutical Sciences	https://saudijournals.com/journal-details/simps/42/342
28	American Journal of PharmTech Research	file:///C:/Users/BIPS/Downloads/AJPTR%2093011_7243.pdf
29	Advances in Medical, Dental and Health Sciences	https://www.amdhs.org/articles/analysis-of-fine-needle-aspiration-cytology-in-diagnosing-the-patients-with-breast-lump-a-prospective-study.pdf
30	Journal of Cancer and Tumor International	https://journalicti.com/index.php/JCTI/article/view/151/302
31	Journal of Cancer and Tumor International	https://journalicti.com/index.php/JCTI/article/view/151/302
32	Acta Scientific Pharmaceutical Sciences	https://actascientific.com/ASPS/pdf/ASPS-03-0186.pdf
33	International Journal of Medical Science and Current Research	http://www.ijmscr.com/asset/images/uploads/15606858020351.pdf
34	International Journal of Medical Science and Current Research	http://www.ijmscr.com/asset/images/uploads/15606858020351.pdf
35	Int J Med Rev	https://www.ijmedrev.com/article_89476.html
36	Int J Med Rev	https://www.ijmedrev.com/article_89476.html
37	Int. Res. J. Pharm.	http://www.irjponline.com/archive-issue.php?issueid=117
38	International Research Journal of Pharmacy	http://www.irjponline.com/archive-issue.php?issueid=118
39	Research Journal of Recent Sciences	http://www.isca.in/rjrs/archive/v8/i1/2.ISCA-RJRS-2018-071.php
40	American Journal of Analytical Chemistry,	https://www.scirp.org/journal/paperinformation.aspx?paperid=86715
41	Journal of Dental and Medical	https://www.iosrjournals.org/iosr-jdms/papers/Vol17-Issue11/Version-2/C1711021811.pdf

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	Sciences	
42	Journal of Innovation in Pharmaceutical Sciences	https://innovation-journals.org/P%204.pdf
43	Inventi Rapid: Ethnopharmacology,	https://inventi.in/journal/article/135/26424/Inventi%20Rapid:%20Ethnopharmacolo/Pharmaceutical
44	World Journal of Pharmacy and Pharmaceutical Sciences	https://www.wjpps.com/issue/2017/VOLUME%206,%20SEPTEMBER%20ISSUE%209
45	World Journal of pharmaceutical Research	https://www.wjpr.net/archive_show/2017/VOLUME%206,%20SEPTEMBER%20ISSUE%2010
46	World Journal of pharmaceutical Research	https://www.wjpr.net/archive_show/2017/VOLUME%206,%20SEPTEMBER%20ISSUE%2010
47	Indo American Journal of Pharmaceutical Science	ttps://www.iajps.com/issue_17december.php
48	Romanian Journal of Diabetes Nutrition & Metabolic Diseases	http://www.jrdiabet.ro
49	Advances in Biological Research	https://www.idosi.org/abr/10(4)16/6.pdf
50	Romanian Journal of Diabetes Nutrition and Metabolic Diseases	https://www.ridnmd.org/index.php/RJDNMD/article/view/69
51	European Journal of Biomedical and Pharmaceutical Sciences	https://www.ejbps.com/issue/2016/Volume%203,%20september%20Issue%209
52	IOSR Journal of Dental and Medical Sciences	http://www.iosrjournals.org/iosr-jdms/pages/15(10)Version-1.html
53	IOSR Journal of Dental and Medical Sciences	http://www.iosrjournals.org/iosr-jdms/pages/15(6)Version-1.html
54	IOSR Journal of Dental and Medical Sciences	http://www.iosrjournals.org/iosr-jdms/pages/15(10)Version-1.html
55	IOSR Journal of Dental and Medical Sciences	http://www.iosrjournals.org/iosr-jdms/pages/v11i2.html
56	IOSR Journal of Dental and Medical Sciences	http://www.iosrjournals.org/iosr-jdms/pages/14(11)Version-1.html
57	Journal of Chalmeda Anand Rao Institute of Medical Sciences	https://caims.in/assets/journal/currentpdfs/CAIMS_Journal_07.pdf
58	IOSR Journal of Dental and Medical Sciences	http://www.iosrjournals.org/iosr-jdms/pages/14(12)Version-1.html
59	European Journal of Biomedical and Pharmaceutical Sciences	https://www.ejbps.com/issue/2015/Volume%202,%20December%20Issue%207
60	Journal of Research in Pharmaceutical Science	https://www.questjournals.org/jrps/papers/vol2-issue3/B231420.pdf
61	World Journal of Pharmacy and Pharmaceutical Sciences	https://www.wjpps.com/issue/2014/VOLUME%203,%20JUNE%20ISSUE%206
62	World Journal of Pharmaceutical Research	https://www.wjpr.net/abstract_file/1129
63	Emerging Trends in Drug Discovery	https://scholar.google.co.in/scholar?q=emerging+trends+in+drug+discovery+elsevier&hl=en&as_sdt=0&as_vis=1&oi=scholart
64	International Journal of Current Trends in Pharmaceutical Research	https://www.pharmaresearchlibrary.com/ijcps-2014-volume-2-issue-6/

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65	International Journal of Medicine and Pharmaceutical Research	https://www.pharmaresearchlibrary.com/ijcps-2014-volume-2-issue-6/
66	International Journal of pharmacology research	https://www.ijpriournal.org/viw/3/2
67	International Journal of Pharmacy	https://www.iipjournal.org/viw/3/1
68	Journal of Pharmaceutical and Scientific Innovation	https://www.jpsionline.com/articles/method-development-and-validation-of-duloxetine-hydrochloride-inbulk-and-formulation-using-uv-spectrophotometric-method.pdf
69	Journal of Pharmaceutical and Scientific Innovation	https://www.jpsionline.com/articles/method-development-and-validation-of-duloxetine-hydrochloride-inbulk-and-formulation-using-uv-spectrophotometric-method.pdf
70	Journal of Chemical and Pharmaceutical Research	https://www.jocpr.com/archive/jocpr-volume-4-issue-7-year-2012.html
71	Journal of Chemical and Pharmaceutical Research	https://www.jocpr.com/archive/jocpr-volume-4-issue-7-year-2012.html
72	Journal of Chemical and Pharmaceutical Research	https://www.jocpr.com/articles/method-development-and-validation-of-asenapine-in-bulk-by-rphplc-method.pdf
73	Journal of Chemical and Pharmaceutical Research	https://www.jocpr.com/articles/determination-of-tamsulosin-in-bulk-and-pharmaceutical-dosage-forms-by-uv-spectrophotometric-method.pdf
74	Journal of Chemical and Pharmaceutical Research	https://www.jocpr.com/articles/determination-of-tamsulosin-in-bulk-and-pharmaceutical-dosage-forms-by-uv-spectrophotometric-method.pdf
75	Journal of Pharmacy Research	https://jpronline.info/
76	Journal of Pharmacy and Chemistry	https://www.researchgate.net/publication/343920396_Synthesis_Characterization_and_Pharmacological_Screening_of_3-5-Substituted-_3_A-Oxadiazole-2-yl-2-Methyl_Quinazolin_-43H-Ones_SIDDARTHA_KUMAR_PALLETI_I-_MANISH_RAPOLU2_ALETI_RAJA_REDDY2_NAZEER_AHMED2
77	Journal of Pharmacy and Chemistry	https://www.researchgate.net/publication/343920396_Synthesis_Characterization_and_Pharmacological_Screening_of_3-5-Substituted-_3_A-Oxadiazole-2-yl-2-Methyl_Quinazolin_-43H-Ones_SIDDARTHA_KUMAR_PALLETI_I-_MANISH_RAPOLU2_ALETI_RAJA_REDDY2_NAZEER_AHMED3
78	International Journal of Research in Pharmacy and Chemistry	http://www.ijrpc.com/archives3.html
79	Chronicles of Young Scientists	http://opubs.com/cys/index.php/cys/index
80	International Research Journal of Pharmacy	http://www.irjponline.com/archive-issue.php?issueid=12
81	Inventi Rapid: Pharm Tech	file:///C:/Users/BIPS/Downloads/malliBilayeredResearcharticle.pdf
82	International Journal of Pharma and Bio Sciences	https://www.ijpbs.net/archive-issue.php?issueid=10
83	Journal of Pharmacy Research	file:///C:/Users/BIPS/Downloads/FormulationandEvaluationofGuargummicrospheresofAceclofenacforcolontargeteddrug%20(1).pdf
84	Journal of Pharmacy Research	file:///C:/Users/BIPS/Downloads/Design_and_evaluation_of_Glipizide_floating_tablet.pdf
85	Int. J. Chem. Sci	https://www.tsijournals.com/abstract/antiinflammatory-and-antimicrobial-activities-of-methanolic-extract-of-tribulus-terrestris-linn-plant-11784.html
86	Pharmacologyonline	https://pharmacologyonline.silae.it/files/archives/2009/vol1/057.[1]_Kiran.pdf
87	Pharmacologyonline	https://pharmacologyonline.silae.it/files/archives/2009/vol1/100.Sunder.pdf
88	Iranian Journal of Pharmacology & Therapeutics	https://ijpt.iums.ac.ir/browse.php?mag_id=13&slc_lang=en&sid=1

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Design and Evaluation of Glipizide Loaded In-situ Gel Formulation Using Natural Mucilages for Improved Bioavailability

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Abstract - This investigation aims to develop floating *in-situ* gel formulation of Glipizide (GLP) by employing natural mucilages such *Fenugreek* (FG) and *Colocasia esculenta* (CE) combination for improving oral bioavailability and patient compliance. For development of optimized *in-situ* gel formulation various trails were conducted by employing different concentrations of FG, CE and HPMC; additionally, Calcium chloride is used as cross linking agent and source of Ca^{2+} ions. Followed by *in situ* gels were subjected to evaluation of parameters like appearance, pH, floating lag time, floating duration, drug content, *in vitro* gelling capacity, *in vitro* drug release. Moreover, the final *in situ* gel formulation was evaluated to viscosity studies and *in vivo* pharmacokinetic study. The formulations resulted in optically clear, prolonged floating duration with controlled drug release profile. Consequently; the optimized formulation (F13) was exhibited optimal viscosity and *in vivo* pharmacokinetic studies exposed that higher T_{max} of *in situ* gel formulation compared to drug suspension which is allusive of slower absorption. However, the $AUC_{0-\infty}$ ng/mL.h was found to be approximately 3.93 folds higher than drug suspension. So; it is indicated that in combination of CE-FG (F13) could be excellent for development of *in situ* gel formulation. Finally, it was suggested that F13 could eliminate the repeated dose administration and improve the oral bioavailability of Glipizide.

Keywords: *Colocasia esculenta; Fenugreek*; Floating duration; *In situ* gel; Oral bioavailability.

1. Introduction

For a couple of decades numerous novel drug delivery systems have been developed to deliver the drugs for the controlled manner with a precise time intervals. The oral controlled release formulation can sustained the drug release and prolong the availability of the drug in gastrointestinal tract (GIT) for a period of required time [1, 2].Gastroretentive drug delivery (GRDDS) is an approach wherein, prolong the gastric residence time, therefore attain drug release in the upper GIT [3-6]. Gastroretentiveionic cross-linking *in situ* gels are liquid preparations for delivery of drugs into stomach [7-10]. Various scientists have been developed gastroretentive *in situ* gels for drugs like metformin [10], acyclovir [11], amoxicillin [12], clarithromycin [13] and nateglinide[14] and evaluated successfully. These formulations can be best suitable for paediatric and geriatric patients due to their ease of administration. These *in situ* gels are prepared in solution or suspension form and they undergo *sol-to-gel* transition after entering into the stomach; then they continuously float on the surface of the gastric fluid [15]. These systems are made up of ion-sensitive polysaccharide mucilages, such as gellan gum, carrageenan, and pectin, which undergo gelation as of interaction with various ions that are released in acidic pH [16-17]. Also, a combined use of a floating *in situ* gel system and mucoadhesive property will potentially improve contact time with the gastric mucosa and provide better controlled drug release with an abridged burst release rates. This investigation aims to develop Glipizide (GLP) (model drug) loaded *in situ* gel systems using in a combination of *Colocasia esculenta*(CE) and *Fenugreek*(FG) for improved gelation and controlled release property. Till now, there is no single literature reports have been available in the use of CE mucilage alone or combination of FG-CE as a gelling agent in novel drug delivery or *in situ* gel formulation. CE is an herbaceous succulent plant belonging to family *Araceae*; it is, widely cultivated in the humid areas of the globe. CE contain a high percentage of mucilage and are already established as mucoadhesive polymer, emulsifying agent and binding agent for tablet dosage forms[19,20]. Due to its swelling property, it is explored as excellent mucilage in development of controlled release formulations. Fenugreek gum (FG), is a naturally obtain galactomannan and isolated from the endosperm of methi seeds (*Trigonella foenum-graecum*). It is contain residues of α-(1-4)-β-D-mannan backbone with (1-6)-linked α-D galactopyranosyl. It is applied as hypoglycaemic and lipid lowering agent [21]. Due to the poor hydration rate of FG, it is difficult to achieve a homogeneous dispersion, hence negatively impact on its gel strength. Thus, a combination of CE-FG might be a capable process to improve its water solubility, swelling and drug release property [22].

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Effectiveness of Metformin Versus Insulin in Gestational Diabetes

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Abstract

Objective: Gestational Diabetes is a growing concern worldwide due to pregnancy outcome risks. Along with Lifestyle modifications for the prevention and maintaince of euglycemia standard insulin supplementation and oral hypoglycemic drug Metformin is being used for the pharmacological management. This study aims to compare the efficacy of Metformin and Insulin treatment groups.

Methods: This is an Observational comparative study in maternal hyperglycemia subjects prescribed with insulin and metformin for atleast three months during their gestation period. Clinical parameters compared are Fasting blood glucose, Postprandial blood glucose, HbA1c, which are analysed and the data is represented in average with standard deviation.

Results: The mean difference between Group Itreated with metformin and Group II treated with insulin of Fasting Blood glucose, Post Prandial Blood glucose, HbA1c in are -13.94±18.22 mg/dl, -44.16±8.99mg/dl, -1.4±0.2% respectively.

Conclusion: Metformin is less effective than standard Insulin regimen, but is able to maintain Glycemic control.

Keywords: Gestational Diabetes, Metformin, Insulin, HbA1c, Maternal Outcomes, Metabolic syndrome.

Introduction

Maternal hyperglycemia due to insulin deficiency and sensitivity increases the risk of pregnancy outcomes and is a growing concern in gestation.[1-4] Prenatal outcomes depend on Identification, glycemic control with diet, exercise with or without pharmacological treatment.[5,6]

Diabetes during pregnancy is increasing worldwide. Some of the important etiological factors are Poor physical activity, Obesity, Imbalanced diet and rising maternal age.

Metformin is a FDA class B in pregnancy category which improves insulin sensitivity, reduce hepatic,increases peripheral glucose uptake andutilization. It readily crosses placenta but do not cause neonatal hypoglycemia as it acts as insulin sensitizer. Human and Animal studies have reported no teratogenic effects.[8-13]

Range of adverse outcomes in pregnancy are well documented due to hyperglycemia in both mother and offspring which are both short-term and long-term.Evidence has accumulated to support offspring

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(RESEARCH ARTICLE)

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Evaluation of sleep quality and prevalence of depression in pregnant women

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Abstract

Objective: Poor sleep quality and depression during the pregnancy period leads to maternal complications and adverse fetal effects. There are various etiological factors that may cause sleep deprivation and depression during gestation. Our study aims to evaluate sleep quality and prevalence of depression in pregnant women.

Methods: This is a Prospective Observational study carried out in pregnant women. Sleep Quality. PSQI and BDI scales were used to assess sleep and depression respectively.

Results: In our study there is significant decrease in sleep quality and higher prevalence of depression in pregnancy. A significant correlation existed between sleep deprivation and depression with Trimesters of Pregnancy.

Conclusion: There is a need for development of effective methods of detecting and management of depression and sleep quality during pregnancy individualized to each patient.

Keywords: Sleep Deprivation; Gestational Diabetes; Maternal Complications; Fetal Adverse Effects; Pittsburgh Sleep Quality Index; Beck Depression Inventory

1. Introduction

1.1. Sleep

Short Sleep Duration is often defined as sleeping less than seven hours each night. Sleep quality is compromised during pregnancy due to changes in hormone secretion, fetal movement, frequent urination, respiration and cardiovascular functioning compared to general population [1, 2]. Poor sleep quality and sleep disorders are associated with maternal complications and adverse fetal outcomes. Preeclampsia, Gestational hypertension, Gestational Diabetes, Cesarean section, preterm birth is associated with sleep disorders including restless leg syndrome, subjective sleep disordered breathing and obstructive sleep apnea [3-13].

1.1.1. Mechanisms of the cause

Circadian desynchronization, abnormal sympathetic activation due to sleep fragmentation may lead to insulin resistance and diabetes during Pregnancy [14-16]. Oxidative stress, Intermittent hypoxia and inflammatory responses caused by sleep disturbance leads to endothelial injury, atherosclerosis, thrombus formation leading to increased blood

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Comparison and Evaluation of Nephrotoxicity with Cisplatin

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Abstract
Objective: Cisplatin is alkylating platinum used as chemotherapeutic agent. Reduced serum Magnesium, Potassium levels, increased serum Creatinine, Blood Urea Nitrogen indicates Cisplatin induced Nephrotoxicity. This study aims to compare and evaluate nephrotoxicity in patients treated with hydration therapy and without hydration therapy.
Methods: This is a Cross-Sectional Prospective study conducted in. Patients prescribed with Cisplatin equal or over 50mg/m^3 as chemotherapy. Clinical parameters compared were Serum Creatinine and Blood Urea Nitrogen after administration of cisplatin.
Results: Our study reports that there is a significant difference between the patients who were given hydration therapy before and after administration of Cisplatin when compare to the group of patients who were not hydrated.
Keywords: CDDP-cis-diamminedichloroplatinum, Cisplatin Induced Nephrotoxicity, Hydration Therapy, Isotonic Saline, Magnesium Sulphate and Potassium Chloride.

I.Introduction

Cisplatin is a alkylating platinum based compound synthesized by M.Peyrone in 1844, which was approved by FDA in 1978 as chemotherapeutic agent. The chemical name of Cisplatin is CDDP-cis-diamminedichloroplatinum which is used to treat Head and neck cancer, cervical cancer, ovarian cancer, testicular cancer, lung cancer and other solid tumours (1-7). Cisplatin is a simple inorganic molecule that creates inter and intra stand cross-linkages in DNA resulting to form defective DNA templates and arrests DNA replication and synthesis (8-14). Adequate renal function is prerequisite for the administration of Cisplatin. Cisplatin Induced nephrotoxicity can be predicted by several clinical parameters like decreased glomerular filtration rate, hypokalaemia, hypomagnesemia depending on dose and frequency of administration(15-20).Over 90% is the cure rate of Cisplatin in testicular cancer and potent in many types of cancers like non -small cell lung carcinoma, head and neck, testicular, ovarian, cervical(8-14). Cisplatin enters tubular cells via facilitated and/or passive diffusion activating signalling pathways and trigger robust inflammatory response promoting renovascular injury and ischemic tubular cell death leading to acute renal failure. Cisplatin induced caspase-dependent or independent apoptosis is due to activated intrinsic, extrinsic mitochondrial death receptor pathway which includes transcription of apoptotic genes. Tubular cell apoptosis and kidney injury is determined by balance between cytoprotective p21 and cdk2 which promotes apoptosis (21).Reduced serum Magnesium, Potassium levels, increased serum Creatinine, Blood Urea Nitrogen indicates Cisplatin induced Nephrotoxicity. Dose fractionation, Slower infusion Rate, forced diuresis, Hydration, screening for renal abnormalities can prevent Cisplatin Induced Nephrotoxicity (22-29). Our study aimed to assess the efficacy of protective role of short hydration therapy with isotonic saline, Magnesium Sulphate and Potassium Chloride before and after cisplatin administration.

II. Materials and Methods

This is a Cross-Sectional Prospective study conducted in 126 patients on chemotherapy with Cisplatin between November 2021 to March 2022. Patients prescribed with Cisplatin equal or over 50mg/m^3 as chemotherapy were included in this study. Patients on NSAIDS, Aminoglycosides, higher serum creatinine levels greater than 1.4mg/dl, Hyperkalemia, Heart Failure were excluded. Clinical parameters compared were Serum Creatinine and Blood Urea Nitrogen after administration of cisplatin.Statistical Analysis an Unpaired t-test was performed to assess the statistical significance between the group treated withhydration therapy and without hydration therapy using SPSS version 1.0.0.1406.

III. Results

Demographic Data

A total of 126 patients have been enrolled in the present study, out of which 74 members were on Cisplatin with hydration therapy in Group I and 52 were in Group II without hydration therapy.

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Retrospective study of covid-19 Prescription pattern in tertiary care hospital

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ABSTRACT

Aim: To evaluate the prescription pattern and comorbid conditions in covid patients .

Methods:ARetrospective study was done at General medicine hospital in warangal.450 covid 19 positive patients from 20 years to 80 years were enrolled for the study. The data was collected from MRD department.

Results: In our study 450 Covid 19 positive patients are considered out of which age groupsin between 20-30years of age group there are 27 patients of which 20 are males & 7 are females, in between 31-40 years of age group there are 44 patients of which 37 are males & 7 are females, , in between 41-50years of age group there are 97 patients of which 75 are males & 22 are females , in between 51-60 years of age group there are 124 patients of which 87 are males & 37 are females , in between 61-70years of age group there are 103 patients of which 73 are males & 30 are females , in between 71-80years of age group there are 55 patients of which 42 are males & 13 are females.In overall, males are more than females.

Conclusion: More attention to be paid inregular hand washing with soap , use of alcohol-based hand sanitizers; limiting person to person contact and practice in social distance; wearing face mask in public places and over all limited going to public areas currently unless it is necessary. Early vaccination can reduce the occurrence of covid 19.

Keywords: Comorbidities, covid-19, Prescription pattern.

I. INTRODUCTION

On 31 December 2019, the Wuhan Municipal Health Commission in Wuhan City, Hubei province, China, reported a cluster of 27 pneumonia cases (including seven severe cases) of unknown aetiology, with a common reported link to Wuhan's Huanan Seafood Wholesale Market, a wholesale fish and live animal market .By 20 January 2020, there were reports of confirmed cases from three countries outside China: Thailand, Japan, and South Korea. These cases had all been exported from China. On 9 January 2020, the China CDC reported that a novel coronavirus (later named SARS-CoV-2, the virus causing COVID-19) had been detected as the causative agent for 15 of the 59 cases of pneumonia .[1]

Coronavirus (Cov) is a large family of positive-sense, single-stranded RNA viruses that belong to the Nidovirales order. The order includes Roniviridae, Arteriviridae, and Coronaviridae families[2]. The Coronaviridae family is subdivided into Torovirinae and Coronavirinae subfamilies. Coronavirinae is further subclassified into alpha-, beta-, gamma-, and delta-COVs[2]. Phylogenetic clustering accounts for the classification of these subtypes of viruses. Their viral RNA genome ranges from 26 to 32 kilobases in length[3]. They can be isolated from different animal species. These include birds, livestock, and mammals such as camels, bats, masked palm civets, mice, dogs, and cats. The widespread distribution and infectivity of COV make it an important pathogen[3].

On the evening of 24 March 2020, the Government of India under Prime Minister Narendra Modi ordered a nationwide lockdown for 21 days, limiting movement of the entire 1.38 billion (138 crore) population of India as a preventive measure against

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A Clinical Review on Haemorrhoids – Its Presentation and Management

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HUMAN

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Keywords: Hemorrhoids, Bleeding, Perianal, Prolapse, Anorectal

ABSTRACT

Anorectic disorders progressively increasing day by day in society and their prevalence in the general population is probably much higher than that seen in clinical practice. Detail the key proctological symptoms to include pain, constipation, bleeding, altered bowel habit, incontinence, swelling, discharge, and irritation. A family history with documentation and anal operation must be recorded in the sequence. Many individuals experience this condition without seeking medical consultation; patients are often reluctant to seek medical help because of embarrassment or the fear, discomfort, and pain associated with the treatment, so the exact incidence of this disease cannot be estimated. Haemorrhoids are an extremely common condition; affecting approximately 10 million persons per year. The presentations of symptoms in patients with anorectal pathologies are mostly typical, but they may be misleading due to the patient's understatement or underplaying of symptoms. Several risk factors have been claimed to be etiologies of hemorrhoid development including aging, obesity, abdominal obesity, depressive mood, and pregnancy. The most common presentation of hemorrhoids is painless rectal bleeding during defecation with or without prolapsing anal tissue. Lifestyle modifications are an integral part of the treatment of hemorrhoidal disease. They should be offered to patients with stages of hemorrhoidal disease as a part of a comprehensive treatment regimen, as preventive measures. In Europe and Asia, oral vasotopic drugs are used for the treatment of varicose veins, venous ulcers, and edema. The use of over-the-counter medications is omnipresent in the treatment of hemorrhoids and includes pads, topical ointments, creams, gels, lotions, and suppositories.

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EVALUATING FUNCTIONAL OUTCOMES IN ISCHEMIC STROKE AND HEMORRHAGIC STROKE PATIENTS WITH REHABILITATION-A COMPARATIVE STUDY.

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ABSTRACT

Aim: To evaluate functional outcomes in ischemic stroke (IS) and hemorrhagic stroke (HS) patients with rehabilitation. **Methods:** A prospective observational study was conducted in neurology department in a tertiary care hospital for a period of six months. All the patients diagnosed with ischemic stroke and hemorrhagic stroke patients were included and reviewed. Both the groups were matched for severity and disability using two different scales that were different only in terms of stroke origin, infarction versus hemorrhage. Rehabilitation was performed for both the groups and results were assessed and compared. **Results:** In our study ischemic stroke patients showed better functional recovery compared to hemorrhagic stroke patients. **Conclusion:** The results of our study provide further evidence of better functional prognosis in stroke survivors with ischemic stroke patients.

KEYWORDS: Stroke, rehabilitation, measures, outcomes.

INTRODUCTION

Stroke is characterized as a neurological deficit attributed to an acute focal injury of the central nervous system. It may be due to a vascular cause including cerebral infarction,

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The Cost Variation Anlysis of Various Oral Anti-Diabetic Drugs Available In Indian Pharmaceutical Market

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ABSTRACT: Diabetes mellitus is a chronic metabolic disorder occurs due to a combination of insulin release and insulin secretary defects. There are large numbers of oral anti-diabetic drugs available for the treatment of Type-II diabetes mellitus with a wide variation in their price. This study was conducted to find recent price variation in various brands for the single generic drug with same strength and dosage form in Indian market. Price of a particular drug was obtained from the price list provided by the pharmaceutical companies in Current Index of Medical Specialties (CIMS), Online Pharmacies, Medline and Retail Pharmacies. The difference in the maximum & minimum price of the same drug manufactured by various pharmaceutical companies and percentage variation in cost was calculated. In monodrug therapy, among all classes of anti-diabetic drugs, the sulphonylureas (Glimepiride: 2mg) shows the maximum price variation of 840.78% and α-glucosidase inhibitors (Acarbose: 25mg) shows the minimum price variation of 88.88%. We concluded that there is a wide variation in the cost of different brands of same generic anti-diabetic drugs available and the price of monotherapy was found to be costlier in India.

Keywords: Diabetes, Percentage price variation, Monotherapy, Pharmacies, Insulin.

I. INTRODUCTION:

Diabetes Mellitus (DM) is a chronic disorder that involves lifelong pharmacological and non-pharmacological management to prevent the complications such as cardiovascular disease, retinopathy, nephropathy, and neuropathy[1]. The WHO defines, DM as "A metabolic disorder of multiple etiology characterized by chronic hyperglycemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in the insulin secretion, insulin action, or both"[2]. According to WHO, about 1.5 million fatalities were reported, making it the eighth leading cause of death. It should also be noted that about 2.2 million deaths are attributed to diabetes and associated complications[3].

It is one of the major causes of morbidity, mortality and needs lifelong treatment[4]. In case of absence of appropriate treatment, it can lead to microvascular and macrovascular complications. These can affect the longetivity of life as well as the quality of life[5]. The cost of antidiabetic drug is the major deciding factor for the patient's compliance. Selection of an oral antidiabetic agent as first-line drug or combined therapy should be based on both the pharmacological properties of the compounds and the clinical characteristics of patient[6]. National urban survey conducted across metropolitan cites of India and reported the people affected with diabetes is: 11.7% in Kolkata, 6.1% in Kashmir, 11.6% in New Delhi, 9.3% in Mumbai, 13.5% in Chennai and 16.6% in Hyderabad[7].

India being the largest provider of generic drugs, accounts for 20% of global exports in terms of volume. In India, health insurance schemes are significantly underutilized and majority of the health care costs are afforded by the patients[8]. Currently very few studies are available on Cost Variation Analysis of oral anti-diabetic drugs available in Indian Pharmaceutical market. Hence this study was taken to analyze the cost variation in various brands of same generic oral anti-diabetic drugs available in Indian market.

II. MATERIAL AND METHODS:

In this study, we mainly focused on cost variation analysis of oral anti-diabetic drugs available in Indian pharmaceutical market. The drug costs were obtained from Current Index of Medical Specialties (CIMS), Medline, Retail and Online Pharmacies. The data were updated regularly on these portals. Only one dosage form was considered. i.e., tablets for the uniformity of

ORIGINAL RESEARCH PAPER

Pharmacology

TO ASSESS THE FUNCTIONAL OUTCOME WITH RELATION TO IMPLANTS USED FOR REDUCTION OF LOWER LIMB FRACTURES IN MENOPAUSAL WOMEN

KEY WORDS: Implant, Functional outcome, Fracture, Osteoporosis, Menopause.

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ABSTRACT

A fracture is a break in the continuity of the bone. Fractures can occur due to falls or trauma. Reduction of a fracture can be done using implants like screws, nails, plates, and wires through Closed reduction internal fixation (CRIF) or open reduction internal fixation (ORIF) methods. The aim of the study was to understand the functional outcome with relation to various implants used in the surgical reduction of fractures of in menopausal women. In our study, we included a group of 50 women who are of menopausal age and observed their functional outcome with the implant used. Our study will be an eminent reference to understand implant selection. This study can be helpful to improve patient care and eliminate risks of the wrong choice of implants which can lead to unexpected risks further or decline in the patient's ability to perform regular activities.

INTRODUCTION:

Fracture is the break in the continuity of the bone. Bone fractures can be classified based on various characteristics. Based on the shape or pattern of the fractured fragments, fractures are divided into transverse, oblique, spiral, and comminated. Other types include compression or crush fracture, gunshot fracture, as well as greenstick fracture, and avulsion fracture. Based on the aetiology, there are three types of fractures including traumatic, fatigue, and pathological. Finally, according to the nature of the fracture, there are closed and open fractures [1]. Fractures occur in individuals of all ages. However, the type and body location vary widely depending on different factors, mainly related to individual bone quality and the nature of the trauma. From a societal view, it is of interest to know the incidence of different fractures in a certain population. Such knowledge can form a base for the organization of relevant healthcare and for undertaking preventive measures to mitigate the risk of fractures. This may involve general community organization, including the planning of road traffic and living conditions for the elderly, but even more specific preventive measures for certain risk groups [2][3] Reduction is a surgical procedure to repair a fracture or dislocation to the correct alignment. When a bone fractures, the fragments lose their alignment in the form of displacement or angulation. For the fractured bone to heal without any deformity the bony fragments must be re-aligned to their normal anatomical position. Orthopaedic surgery attempts to recreate the normal anatomy of the fractured bone by reduction of the displacement [4] Reduction could be by "closed" or "open" methods:

- *Open reduction* is where the fracture fragments are exposed surgically by dissecting the tissues.
- *Closed reduction* is the manipulation of the bone fragments without surgical exposure the fragments.

Because the process of reduction can briefly be intensely painful, it is commonly done under a short-acting anaesthetic, sedative, or nerve block. Once the fragments are reduced, the *reduction* is maintained by application of casts, traction, or held by plates, screws, or other implants, which may, in turn, be external or internal [4] In menopausal women, it is crucial to understand that the bone density is reduced and thus correcting a fracture surgically must be done with care and the correct type of implant must be chosen to avoid unnecessary risks like the rigidity of bone, decrease in the ability to perform daily activities. Many people are unaware of the link between a broken bone and osteoporosis. Osteoporosis, or "porous bone," is a disease characterized by low bone mass. It makes bones fragile and more prone to fractures. Osteoporosis is called a "silent disease" because bone loss occurs without symptoms. People typically do not know that they have osteoporosis until their bones become so weak that a sudden strain, twist, or fall results in a fracture. In osteoporosis, it is crucial to exercise to keep the bone flexible and rigid.

MATERIALS AND METHODS: A total population of 50 menopausal women who are between 50-75 years of age was included in the study (mean ± SD, 59.8 ± 7.24). The subjects have been diagnosed with osteoporosis for over a year. Study-related information like the type of fracture, location of the fracture, the reason for fracture, surgical method, and implant used was collected using a specifically designed questionnaire. None of these subjects included in our study had other co-morbidities like diabetes, hypertension, or thyroid. None of the subjects had any sort of bad social habits. Fracture compromises exercise and activity since the surgical reduction of the fracture using an implant can demand bed-rest of the long healing period. We assessed the ability of the patients as they resumed their activities with the implant. The functional outcome is assessed by using a scoring system with the help of the OMSS (Olerud and Molander scoring system) scale and scoring were categorized as 100-80=Excellent; 79-50=Good; 49-25=Fair; <25=Poor. All results are presented in tables and graphs.

DESIGN: Retrospective Observational Study

MAIN OUTCOME MEASURES: Average type of fractures due to falls, average type of fractures due to trauma, the functional outcome with implants used in CRIF, a functional outcome implants used in ORIF.

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ANTIDIABETIC ACTIVITY, ALPHA-AMYLASE AND ALPHA-GLUCOSIDASE INHIBITORY EFFECT OF *PASTINACA SATIVA* EXTRACT

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Pastinaca sativa belonging to the family Apiaceae, is a tropical tree used in many countries as a herbal drug for the care of diabetic patients. However, the methodical rationale for this medical use is very limited. The aim of this analysis was to examine the antidiabetic activity of the Pastinaca sativa methanolic extract and the possible mechanisms underlying that activity. The extract hypoglycemic behavior was investigated in typical diabetic rats induced with alloxan. Finally, an effect of the Pastinaca sativa extract (Crude extract of Pastinaca sativa-CEPS) on the activity of α-amylase and α-glucosidase was examined in vitro. CEPS showed IC50 equal to 91.69 ± 1.5 µg/mL for α-amylase enzyme inhibition activity. Normal acarbose (control) demonstrated IC50 equal to 83.25 ± 1.28 µg/mL. CEPS displayed IC50 values of 88.05 ± 1.25 µg/mL for α-glucosidase enzyme. Under similar laboratory conditions, acarbose displayed an IC50 value of 51.00 ± 1.23 µg/mL. CEPS exhibited IC50 less than 100µg/mL would be considered as healthy. The extract at 400 mg/kg greatly decreased the region under the blood glucose level curve in a typical rats test for oral glucose tolerance. A single dose of the extract decreased significantly in the alloxan-induced diabetic model, similar to glibenclamide (standard), from 208.33 mg/dl to 106.38 mg/dl at 200 mg/kg CEPS and from 209.82 mg/dl to 111.65 mg/dl at 400 mg/kg CEPS. These findings were comparable with 0.5 mg/kg of glibenclamide indicating a substantial decrease from 205.55 mg/dl on 7th day to 84.88 mg/dl. The Pastinaca sativa methanolic extract possesses strong antidiabetic activity in vivo. Besides, the extract has also been shown to have a significant inhibitory activity of α-amylase and α-glucosidase, which might lead to its anti-hyperglycemic function when used in diabetic patients.

INTRODUCTION

Diabetes mellitus, one of the most common metabolic disorders, was estimated to affect 415 million people globally in 2015, with that number expected to rise to 642 million by 2040[1]. Patients of chronic hyperglycemia are at an increased risk of both macrovascular (heart attacks, peripheral arterial disease, and/or stroke) and microvascular complications such as retinopathy, nephropathy, and neuropathy[2]. Free radicals and reactive oxygen species can be generated by cells when blood glucose levels are elevated. As a result of the accumulation of free radicals, disruption to cellular macromolecules such as lipids, proteins, and nucleic acids occurs, resulting in diabetes progression and complications[3]. Plants derived natural products were classified as naturally

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Glanzmann Thrombasthenia: A Case Report of a Rare Inherited Coagulation Disorder Presenting with Traumatic Head Injury

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Abstract

This case study deals with a 32-year-old Indian male patient who presented with a traumatic head injury in the hospital, experienced uncontrolled bleeding after conducting surgery, and was eventually diagnosed with Glanzmann thrombasthenia. Glanzmann thrombasthenia is a rare hereditary blood clotting disorder characterised by a lack of platelet aggregation due to the absence of platelet glycoprotein IIb/IIIa. This occurrence is generally triggered by consanguineous marriages and is apparent in approximately one in one million people. Education and raising awareness about consanguinity in communities may help to reduce challenging, unusual genetic diseases.

INTRODUCTION

Eduard Glanzmann first reported Glanzmann thrombasthenia (GT) in 1918 after he identified a functional abnormality of platelets with defective clot retraction. Glanzmann thrombasthenia is a rare autosomal recessive disorder with normal or sub-normal platelet count, prolonged bleeding time, and deficiency or absence of platelet aggregation.[1,2] It is a rare genetic platelet disorder in which the platelet glycoprotein IIb/IIIa (GPIIb/IIIa) complex is affected, with an occurrence of one in one million.[3] It is commonly seen in populations with an autosomal recessive pattern of inheritance with increased consanguinity. An acquired form of GT in which autoantibodies to the glycoprotein complex interfere with normal functioning has also been reported.[4]

Integrin $\alpha_{IIb}\beta_3$, formerly known as GPIIb/IIIa, is a platelet receptor for fibrinogen. It shifts to its active configuration to allow for fibrinogen binding when platelets are activated. As platelets bind the fibrinogen, they accumulate and provide primary haemostasis. Bleeding can be spontaneous or occur with an injury without functioning fibrinogen receptors or without enough of them.[5,6] Platelets in GT are not as effective in producing thrombin, an integral part of converting fibrinogen to fibrin.[7] When cross-linked fibrin stabilises the platelet plug, secondary

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Original Research Article

Elucidative epidemiological study in female cancer patients

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ABSTRACT

Background: As cases of cancer in women are increasing day to day, it is mandatory to assess risk factors associated with female cancer patients. Our study is designed to elucidate different reproductive factors associated with female cancer patients attending hospital.
Methods: 200 female patients who attended the hospital with cancer are studied by asking questions directly to patients following a standard questionnaire regarding reproductive factors like age at menarche, age at first child birth, age at first sexual intercourse, breastfeeding, age at menopause. It was a Retrospective study analyzed via MS Excel calculations.
Results: In this study it explains that in female cancer cases, mostly patients were seen having early menarche, also women were in menopause stage mostly, and mostly lactating mothers with breast feeding frequency up to 1-2 years are seen. It also explains that in female cancer cases, women mostly had young maternal age at first child, with carcinoma of cervix and carcinoma of breast reported mostly.
Conclusions: In this study we conclude that in females who have early menarche, women with early age at first sexual intercourse, age at first pregnancy, are strongly interrelated and have increased risk of carcinoma. The changes which result in relative risk of cancer associated with menopause are believed to be due to increase in body mass index (BMI), which makes adipose tissue the main site of estrogen production after menopause. Hence, identifying these factors which may be associated with the process of carcinogenesis development in females.

Keywords: Cancer, Lactation, Reproductive factors, Menarche, Menopause

INTRODUCTION

Neoplasm, is defined as "a mass of tissue formed as a result of abnormal, excessive, uncoordinated, autonomous and purposeless proliferation of cells even after cessation of stimulus for growth which caused it.

Malignant tumors are collectively referred as cancers, i.e., "they adhere to any part that they seize in an obstinate manner".[1]

Reproductive profile

Breast cancer is a heterogeneous and complex malignancy, which occupies first place in women in terms of incidence around the world.[2] Reproductive and hormonal factors contribute most of the time for development of breast cancer.[3] Early age at menarche i.e. age at or below 12 years before the first menstrual cycle, nulliparous, late age at first birth, late menopause, prolonged interval between menarche and late first full term pregnancy, repeated

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Original Article

DESIGN AND *IN VITRO* EVALUATION OF FLOATING DRUG DELIVERY SYSTEM OF GLIPIZIDE USING COMBINATION OF NATURAL MUCILAGES AND SYNTHETIC POLYMERS

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ABSTRACT

Objective: The objective of the study is to explore polysaccharide mucilages of *Colocasia esculenta* (CE), and *Fenugreek* (FG) as buoyancy enhancing agents, and mucoadhesive agents by developing gastroretentive floating tablets of Glipizide.

Methods: Glipizide loaded floating tablets were developed with CE, and FG alone and in combination of Guar gum (GG), and Hydroxypropyl methylcellulose (HPMC) K4M using direct compression technique. The developed formulations have been subjected to evaluation of *in vitro* buoyancy study, *in vitro* drug release study (pH 1.2), and *in vitro* bioadhesiveness study. Therefore, the final optimized formulation was subjected to Fourier Transform Infrared Spectroscopy (FTIR), Differential scanning calorimetry (DSC), and X-ray powder diffraction (XRD) study.

Results: The results of the buoyancy study for formulation F1, F2, and F5 revealed that the instant floating lag time, floating time duration of 1 h, and exhibited 100% drug release in 4 h. Therefore, the formulations developed with GG (F3), and HPMC K4M (F4) have been exhibited slow floating lag time, prolonged floating duration and drug released up to 100 % in 12 h, while; formulations F6, F7, F8, and F9 have been exhibited shortest floating lag time, longest floating time duration, the best drug released up to 12 h, and better *in vitro* bioadhesiveness properties. Furthermore, F7 exhibited good bioadhesive property as compared to F6, F8-F9. The results of the FTIR, DSC, and XRD study for F7 revealed that the presence of functional groups and amorphous.

Conclusion: Owing to the anticipated properties like biocompatibility, biodegradability, swelling ability, and cost-effectiveness of CE; it could be the potential macromolecule for the replacement of synthetic polymers.

Keywords: Buoyant tablets, Glipizide, *In vitro* bioadhesive test, Polysaccharide mucilages, Sustained drug release

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INTRODUCTION

Natural powdered extracts are acquired from vegetable sources with high molecular weight uronic acid and sugar units [1]. They are novel hydrocolloids with a broad range of applications in the pharmaceutical era, such as emulsifying agents, gelling agents, suspending agents, thickening agents, binders, matrix-forming agents, disintegrants, and mucoadhesive agents [2-9]. At present numerous scientists have explored natural mucilages in the development of novel drug delivery systems. For instance, Reddy *et al.* 2010, developed sustained release matrix tablets of Diltiazem using *Gum karaya* and *Gum kondagogu* [10], Prajapati *et al.* 2014 developed sustained release mucoadhesive macromolecule of aceclofenac using *Locust bean* gum [11], Dwivedi *et al.* 2017 prepared sustained release matrix-tablets of metformin with *Cassia tora* mucilage [12], Hadad *et al.* 2018 developed electrospun-nanofibers using *flax seed* mucilage [13], Liang *et al.* 2015, prepared gastric floating controlled-release tablets using *Konjac Glucomannan* [14], Rimi *et al.* 2005 prepared nasal drug delivery systems of diazepam using *Trigonella Foenum Graecum* [15], Maithi *et al.* 2010 developed hydrogel beads of Glipizide using *Locust bean* gumand floating microparticles of metformin using *glycinemax* [16], *metroxylonsagu* and *Plantagoovate* by Pandey *et al.* 2016 [17]. Gastroretentive drug delivery system (GRDDS) can prolong the retention of drugs in the gastrointestinal region for several hours and increase the sustained release of drugs, those which are having an absorption window in a particular region of GIT after oral administration [18]. The enhanced gastric retention improves bioavailability, and increases the solubility of drugs due to its extensive advantages [19]. Presently, numerous types of approaches have been reported for development of GRDDS which include; floating systems, bioadhesive systems, hydrodynamically balanced systems, swelling, and expanding systems to enhance the gastric residence time [20, 21]. However, these dosage forms are very effective, when the fluid level in the stomach is sufficiently high. Though, the *buoyancy* of the tablet may be hindered at pylorus in empty conditions [22]. Owing to this, it can be restrained by developing the formulation and it may be required to attach the mucous membrane of the stomach wall.

Mucoadhesionhave has been employed for targeted drug delivery by the addition of mucoadhesive polymers with active pharmaceutical ingredients for the development of pharmaceutical formulations. Mucoadhesive materials are hydrophilic macromolecules containing assorted hydrogen bond forming groups [23]. *CE*, and *FG* powdered extracts were previously explored as versatile pharmaceutical excipients [15]. These are hydrophilic, biodegradable, biocompatible, nontoxic, amusing resources, and have been widely employed as additives in the development of drug delivery systems [24, 25]. Glipizide is an oral hypoglycemic agent, which is generally prescribed drug for the prevention of non-insulin-dependent diabetes mellitus (NIDDM) [26], through exciting insulin secretion from the pancreatic islets of Langerhans and several other extra pancreatic effects, such as enhancing sensitivity to insulin and decreasing the hepatic glucose production [27]. Owing to the short biological half-life (3.4±0.7 h) of Glipizide, it is administered 2 or 3 times with doses of 2.5–10 mg per day. It is practically insoluble in water and highly permeable (Biopharmaceutical Classification System, Class II). Moreover, Glipizide is mostly absorbed from the upper parts of the gastrointestinal tract. The dosage forms with bioadhesive, and floating properties can sustain the drug release and increases the *buoyancy* of the tablet in the stomach as well as improves the oral bioavailability of Glipizide [28-30].

In the present study, naturally conquering CE and FG mucilage powders have been extracted and used as the Mucoadhesive, and the

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ORIGINAL ARTICLE **OPEN ACCESS**

Fast Disintegrating Tablets of Flurbiprofen with Natural Super Disintegrants–Formulation and *In Vitro, In Vivo* Evaluation.

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ABSTRACT

Flurbiprofen is a non-steroidal anti-inflammatory drug, non selective COX inhibitor and most effective to hinder the prostaglandin. In this research work, an attempt was made to develop solid dispersions for the enhancement of solubility, dissolution and bioavailability of Flurbiprofen and also to find the effect of natural super disintegrants in the development of fast disintegrating tablets. Solid dispersions were prepared by solvent evaporation method using PEG 6000 as carrier in different ratios. The optimized solid dispersions were utilized in the formulation of FDTs using different natural superdisintegrants in different concentrations. The prepared tablets were evaluated and subjected to in vitro dissolution studies to select the best formulation. All the formulations showed fast disintegrating action. Among all the formulations dehydrated banana powder containing formulations FF5 (96.72) and FF6 (99.27) showed better drug release from the dosage form. Thus, dehydrated banana powder can be utilized as better superdisintegrant in the advancement of quickly breaking down tablets when compared to orange peel pectin and mango peel pectin. Finally the optimized formulations were subjected to pharmacokinetic studies in rabbits. The solid dispersion reached peak concentration (C_{max}) 11445.46ng/ml at T_{max} of 2h while it was observed to be 9140.84ng/ml at t_{max} of 3h in case of control tablet, indicating that enhancement of absorption in solid dispersion pattern of Flurbiprofen than pure form. The AUC of control and FF6 tablets of Flurbiprofen were 31495.16 and 43126.52ng-h/ml correspondingly. These results indicated that the FF6 tablet showed enhancement of AUC when compared to control tablet of Flurbiprofen.

Keywords: *Fast disintegrating tablets (FDTs), Flurbiprofen, PEG 6000, solid dispersion, superdisintegrants.*

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INTRODUCTION

Oral drug delivery has been known for decades as the most widely utilized route of administration among all the routes that have been explored for the systemic delivery of drugs via various pharmaceutical products of different dosage forms. Oral route remains the preferred route for administration of therapeutic agents because of accurate dosage, low cost therapy, self-medication, noninvasive method and ease of administration leading to high level of patient compliance. Fast disintegrating tablet (FDT) is "A strong dose structure contains restorative substances, which break down quickly, for the most part inside an issue seconds, when put up on tongue". FDTs break down as well as disintegrate quickly in spit without the requirement for water [1].

Superdisintegrants are substances which disintegrates the drug within seconds. The major function of disintegrants is to oppose the efficacy of the tablet binder and the physical forces that act under compression to form the tablet. The mechanism by which tablet is broken down into smaller particles and then produces a homogeneous suspension or solution is based on

i. By capillary action
ii. High swell ability of disintegrants
iii. Capillary action and high swell ability
iv. Chemical reaction (release of gases)

MATERIAL AND METHODS

Flurbiprofen drug was gifted by Aurobindo Pharmaceuticals, Hyderabad, Telangana, India. Mango peel pectin, Orange peel pectin, Banana powder, PEG6000, Avicel PH 102, Aspartame, Mannitol, Talc, Magnesium stearate from local manufacturers.

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Research Article

PREVALENCE OF CHILDHOOD SKIN DISORDERS ATTENDING AT OUTPATIENT PEDIATRIC HOSPITAL

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ABSTRACT

Objective: The objective of the study was to study the prevalence of various skin diseases in pediatric population.

Methods: A prospective observational study was conducted at private children's outpatient clinic in Warangal from March to August 2018 with the prior approval from the Institutional Ethical Committee BIPS/IEC/2018/P8. A total of 200 patients with various skin diseases of age group <17 years were included in the study.

Results: Out of 200 pediatric skin disorders, male children 138 (69%) outnumbered female children 62 (31%). The mean age of the study population was found to be 5.85±4.11 years. About 64% of the patients are from rural area and 36% are from urban. The percentage of skin disorders is allergic infections (26%), bacterial infections (23%), viral infections (11%), fungal infections (7.5%), parasitic infections (6%), autoimmune disorders (4%), and skin adnexa (2.5%).

Conclusion: Our study concludes that the prevalence of allergic and bacterial skin infections was found to be common among male children from rural area.

Keywords: Skin disorders, Pediatrics, Prevalence, Eczema, Impetigo, Chickenpox, Tinea corporis.

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INTRODUCTION

Skin development is a non-stop process. In pediatrics skin, all the anatomical structures are present, but they are immature when compared to the skin of adults [1]. However, infants have smaller corneocytes and thinner stratum corneum which lasts until 2 years of age. When compared with adults, skin of newborns contains fewer fibrils and decreased dermal collagen, thereby making it more prone to skin diseases [2]. In India, skin diseases are becoming increasingly important due to many factors such as varied climate, genetic, age, overcrowding, nutrition habits, poor hygiene, and pollution [3]. Pediatric dermatology deals with the diagnosis, treatment, and prevention of skin diseases occurring in childhood [4,5]. Special skills are required while dealing with children's having skin diseases as they differ in clinical presentation, treatment, and prognosis [6]. Children being the major part of the population are often neglected, especially neonates having skin problems are not taken seriously by the community [7]. Skin diseases in rural areas are more prevalent due to their poverty and lack of awareness among the people [8]. Skin infection can be defined as the invasion and multiplication of microorganism such as bacteria, fungal, viral, or parasites on the skin [9]. The previous studies from other parts of the country had reported the pattern of skin diseases, there appears to be a recent shift from higher frequency of skin infections and infestations to appearance of eczemas as leading cause of skin morbidity [10-12]. There have been few studies done on the prevalence of skin disorders from India. Our present study attempts to provide a better understanding of various skin disorders in children with figures.

METHODS

Study design and settings

A prospective observational study was conducted from March to August 2018 at private children hospital by taking informed consent directly from patients and patient representatives who attended the clinic regarding their skin complication with the prior approval from the Institutional Ethical Committee BIPS/IEC/2018/P8.

Study size

In our study, 200 pediatric patients with skin disorders were enrolled and noted.

Study criteria

Inclusion criteria

Pediatric population with skin disease of age <17 years who are attending outpatient clinic during the study period were included in the study.

Exclusion criteria

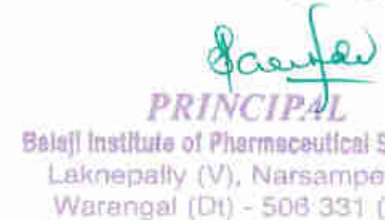
1. Patients above 17 years are excluded from the study
2. Children with chronic diseases are excluded from the study
3. Children who having skin manifestation as a part of systemic diseases are excluded from the study.

Materials

A predesigned pro forma was used for collecting data which include patient demographics such as age, gender, locality, duration of illness, type of infection, symptoms, and treatment.

RESULTS

Out of 200 patients, males were 138 (69%) and females were 62 (31%). The mean age of the study population was found to be 5.85±4.11 years. Among 200 studied patients, 64% of patients attended to the outpatient clinic were from rural areas and about 36% of patients were from urban areas. The children were classified according to the age group:



Research article

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A CASE REPORT: PHENYTOIN INDUCED STEVENS JOHNSON SYNDROME

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ABSTRACT

Steven – Johnson syndrome (SJS) is a rare immune mediated hypersensitivity complex that involves serious life threatening skin condition and mucous membranes. It's usually an excessive reaction to a medication or an infection. Factors that increase the risk of developing SJS are viral infections, weakened immune system, medication related to this condition, organ transplant, HIV/AIDS, autoimmune disease (SLE), a family history of Steven-Johnson syndrome and genetic predisposition.

Keywords: Steven – Johnson Syndrome, Phenytoin, Antibiotics.

INTRODUCTION

Phenytoin is most widely used drug for different types of epileptic seizures especially by focal brain lesions[1] Stevens-Johnson syndrome (SJS) is rare condition mostly caused by drugs, but serious mucocutaneous reactions with extensive epithelial sloughing and systemic symptoms[2].

Common culprits among the drugs include anti-epileptics, antibiotics like sulfonamides and isoniazid, NSAIDS [3]. Symptoms which include cutaneous manifestations occur in the form of macular eruptions over the trunk, face and upper limb [4]. In 90% of cases mucous membrane involvement occur [5].

Diagnosis is mainly based on clinical aspect and prognosis of disease depends on age, presence of any comorbidities and area of detachment [4]. Most common complication of SJS is septicemia and multi organ damage which contribute to mortality [5]. Late complications include mucosal scarring and strictures which are frequent, Later eye complications leads to blindness which occur in 50% of cases [6].

MATERIAL AND METHODS

The Patient visited Sri Bhadrakali Clinic with rashes and other associated symptoms. His and Guardians' consent was seeked and explained about this case report publication. The Protocol and Written acceptance of them was submitted and got approved from Institutional Human Ethics Committee (IHEC).

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CASE REPORT

A 28 years old, male patient was identified with Steven Johnson Syndrome in Sri Bhadrakali Clinic and it was confirmed that the adverse reaction is caused by phenytoin 100 mg with Antibiotics Cefixime and Ofloxacin prior to the onset of reaction. The patient was observed with Exfoliation of skin all over the body since 5 days, painful swallowing and Spitting of blood. The patient had a past history of seizures since 3 years on irregular treatment of T.Eptoin 100mg twice daily.

On examination the patient was afebrile, pulse-90/min,BP-120/80mmHg.Investigation were done are shown in Table:1. The medication prescribed for the patient are Inj. Decadron 8mg IV TID, Liquid paraffin for local application, Calamine lotion for local application, Inj. Metronidazole 400mg IV TID, T.Erythromycin 500mg PO BD, T. Seratiopeptidase PO BD. T. Pantoprazole 40mg PO OD. Exfoliation of skin decreased after 15 days and the condition was improved at the time of discharge (Fig.1, Fig.2, Fig.3). Patient was managed using intravenous fluids, antifungals and antibiotics with careful monitoring of vitals and routine biochemical parameters. On discharge, patient's condition was significantly improved and was given with medication T. Augmentin 625 mg BD, T. CPM BD,

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Research article

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A CASE REPORT: HERPES ZOSTER OPTHALMICUS

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ABSTRACT

Herpes Zoster Opthalmicus (HZO) is an ocular disease which usually manifests as unilateral painful skin rash in a dermatomal distribution of the trigeminal nerve shared by the eye and ocular adnexa. HZO occurs typically in older adults but can present at any age and occurs after reactivation of Varicella- Zoster Virus present within the sensory spinal or cerebral ganglia. Signs and symptoms, which may be intense, include dermatomal forehead rash and painful inflammation of all the tissues of the anterior and rarely posterior structures of the eye.

Key words: Herpes Zoster Opthalmicus, Rashes, Acyclovir.

INTRODUCTION

Herpes Zoster Opthalmicus (HZO) is a rare type of Shingles; 15-20% of the cases are reported [1]. It is a member of family (Herpesviridae) and occurs in the trigeminal ganglia involving the ophthalmic division of the nerve where reactivation of latent virus occurs [2]. Herpes Zoster Opthalmicus is a result of activated Varicella Zoster virus which is a double Stranded DNA virus in the Herpes Simplex virus group. Normally, the risk for herpes zoster is 10-20% but in case of older patients the risk rises to 50% [3].

Manifestation includes a vesicular rash, which is painful and it progresses upto 4-5 weeks. After healing of the skin lesions the pain may continue for months or years. Ophthalmic findings are minor and limited to cornea [4, 5].

When the second and third divisions of the trigeminal nerve are affected then the oral symptoms appears [6]. Poor nutrition, Aging, immunocompromised status which lead to outbreak of herpes zoster and some factors like physical, emotional stress may accelerate an episode[2]. Complications include vision loss, disabling pain, and chronic ocular inflammation [5].

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MATERIAL AND METHODS

The Patient visited Sri Bhadrakali Clinic with rashes and other associated symptoms. Her and Guardians' consent was seeked and explained about this case report publication. The Protocol and Written acceptance of them was submitted and got approved from Institutional Human Ethics Committee (IHEC).

CASE REPORT

A 65 years old female patient was admitted in female medical ward of Sri Bhadrakali Clinic, her clinical data was collected from the case sheet. Her complaints were rashes on the left side of the face associated with exfoliation, rashes over left side of the forehead, vomitings (non bilious) since 3 days, H/O of closure of eyes. The patient is known case of hypertension since 5 years.

Lab investigations were haemoglobin- 8.0gm%, White blood cells- 11200cells/cmm, ESR- 25mm, Pus cells: 25-30PHF, Epithelial cells: 4-6PHF, Albumin- Positive. The patient was assessed to have "HERPES ZOSTER OPTHALMICUS". The treatment prescribed to her are as follows Monocef (Ceftriaxone), Acyclovir, Paracetamol, Pantop (Pantoprazole), Zofer (Ondansetron), Iron folic acid, Pregabalin, Calcium, Tobrex (Sodium carboxy methylcellulose), Fucidin (Fusidic acid).

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In-Vivo Anti-Hyperlipidemic Activity and Preliminary Phytochemical Screening of *Canephora robusta*

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Abstract

The main aim of this study is to determine the anti-hyerlipidemic and anti-obesity activity of *Canephora robusta* in hyperlipidemia induced rats. Prepared coffee bean extract (GCE) was procured from the market which is unroasted and contains more quantity of caffeine and chlorogenic acid when compared to roasted coffee. Male albino Wister rats are fed with high fat diet (HFD) for weeks to induce hyperlipidemia in rats, which are divided into 4 groups with 4 animals in each group. Test GCBE was given in doses of 200 mg/kg and 400 mg/kg to III and IV groups which are fed with HFD for 30 days. Then blood samples were collected through retro-orbital sinus by capillaries and serum is separated for analysis. The result obtained from lipid profile which includes total cholesterol, triglycerides, very low density lipoproteins, and low density lipoproteins shows the decreased level when compared to the hyperlipidemic control. This shows the significant reduction of total body weight ($p < 0.05$) when given with dose of 200 mg/kg and 400 mg/kg. The present study suggests that GCBE has anti-obesity and anti-hyperlipidemic activity, where 400 mg/kg is more effective to reduce the total body weight and lipid levels when compared to 200 mg/kg. Further studies on this extract may lead to identify the possible mechanism of action and isolation of active principle from the same.

Keywords

Anti-Hyerlipidemic, Anti-Obesity, Lipoproteins Hyperlipidemia,

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Research Article

A DESCRIPTIVE EPIDEMIOLOGICAL STUDY ON MIGRAINE

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ABSTRACT

Objective: The main objective was to carry out the observational study in migraine patients.

Methods: A prospective observational study was conducted for 6 months in 415 migraine patients with the prior approval from the Institutional Ethical committee. A predesigned pro forma was used to collect data such as socio-demographics of the patients, different types of migraine, triggering factors, and prescription pattern.

Results: Among 415 patients, the female patients (n=356, 86%) outnumbered male patients (n=95, 14%). The mean age of the study population was found to be 59±54 years. In our study, we found that migraine without aura (79%) was most common, followed by probable migraine without aura (13.3%), chronic migraines (5%), and migraine with aura (0.3%). Grading is done according to International Headache Society into 0, mild, moderate, and severe.

Conclusion: Compared to migraine with aura, migraine without aura is mostly seen in females than males due to fluctuating hormone levels, rural area is most effected due to exposure to triggers. Management includes pharmacological and non-pharmacological. Pharmacological therapy included nonsteroidal anti-inflammatory drugs agents, Triptans, and prophylactic therapy, and adjunctive therapy also prescribed.

Keywords: Migraine, Confirmatory analysis, Triggers, Prophylactic therapy, Adjunctive therapy.

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INTRODUCTION

Headache disorder is characterized by recurrent headaches, and it is the common nervous system disorder. Among all these, migraine headache is ubiquitous, disabling, and essentially treatable, but still underestimation and undertreated [1]. The name "migraine" originally comes from the Greek word "hemicranias," meaning "half of the head," is a neurovascular disease, representing one of the most striking features of the condition: That in many cases pain only affects one half of the head, characterized by a broad spectrum of symptoms [2,3]. Migraine attack can be triggered by a number of intrinsic or extrinsic factors such as environmental, dietary, or physiologic factors that can stimulate migraine activity [4]. In various regions, the socio-cultural factors play a major role in influencing the significance of triggering factors. Studies related to migraine triggers and its management are limited in India due to a lack of information [5]. The World Health Organization considered migraine as the major paroxysmal neurovascular disorder. The exact cause of a migraine attack is unknown, but it certainly lies within the central nervous system [6]. Migraine is a disorder which is characterized by multiple phases contains premonitory phase, aura phase, headache phase, postdrome phase, and interictal phase [7]. The association between subtypes of migraine was described by the International Headache Society (IHS) criteria [8]. Some prior studies have described that migraine may cause with some other illnesses and these occurrences is called as comorbidities to treat migraine, the comorbidities of migraine are important, because it can help in improving the treatment strategies and also understanding of the possible pathophysiology of migraine [3,9]. Cooccurrence of migraine subtypes and the migraine and tension-type headache within the same individual due to the lack of pathognomonic markers, the validity of the inclusion criteria and boundaries between migraine and also other subtypes of headache, classification of migraine has been delayed. The IHS criteria and Headache Classification Committee defined the association between the subtypes of migraine and its nature [8]. The pharmacological treatment of migraine patients with frequent severe headaches often requires both acute (abortive) and preventive treatment [10]. The main objective of our study was to carry out an observational study in migraine patients.

METHODS

Study design and settings

A prospective observational study was conducted for a period 6 months from March 2018 to August 2018 in Warangal area. An informed consent was taken from patients and patient representatives with the prior approval from Institutional Ethical Committee (BIPS/IEC/2018/P9).

Study size

A total of 415 Migraine patients were recruited into the study.

Study criteria

Inclusion Criteria

The following criteria were included in the study:

- All genders
- Age groups: ≥6–80 years
- Patients with all sub-types of migraine headache.

Patients with comorbidities such as hypertension, stroke, coronary heart disease, subclinical vascular brain lesions, diabetes mellitus, lumber and cervical pain, asthma, epilepsy, fibromyalgia, and some psychiatric diseases such as depression, anxiety, schizophrenia, panic disorder, suicidal ideations, and bipolar disorder were included in the study.

Exclusion criteria

The following criteria were excluded from the study:

- Age group of below 5 years
- Patient with missing data.

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Therapeutic Drug Monitoring of Levetiracetam by High - Performance Liquid Chromatography in Paediatric Epileptic Patients

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Abstract: ***Levetiracetam is a second generation anticonvulsant drug used as adjunctive therapy or monotherapy with high efficacy and tolerability in the treatment of partial seizures, myoclonic seizures and generalized tonic-clonic seizures in children. We aimed to correlate the serum drug concentration with seizure control status, complaints and liver enzymes (Alanine aminotransferase, Aspartate aminotransferase) in pediatric epileptic population.We prospectively evaluated 36 levetiracetam monotherapy patients, the dose was administrated based on their body mass index. A rapid and specific method by high-performance liquid chromatography(HPLC) UV detection was developed to determine serum drug concentrations, observations made and analyzed. Out of 36 patients, 24 patients drug concentration was within therapeutic range (12-46µg/ml) have shown good seizure control,8 patients were in the sub-therapeutic range, of these subjects 4 had good seizure control and another 4 poor seizure control. Remaining 4 patients were in the supra-therapeutic range. This drug has no effect on liver enzymes. There is no significant correlation between serum drug concentration levels and subjective complaints.Levetiracetam can be used as a first-line broad-spectrum antiepileptic drug which is well tolerated and achieves good seizure control.***

Keywords: Levetiracetam, seizure control, therapeutic range

1. Introduction

Levetiracetam is a second generation anticonvulsant drug used as adjunctive therapy or monotherapy with high efficacy and tolerability in the treatment of partial seizures, myoclonic seizures, and generalized tonic-clonic seizures. Levetiracetam has come to clinical use since 1999 in adults and 2006 in children respectively [1-5].

Pharmacokinetic profile of Levetiracetam is quickly absorbed when taken orally (T max-< 1hour), bioavailability (>95%), protein binding (<10%) and metabolism is usually low and the volume of distribution is 0.5-0.7L/kg. Half life ranges from 6 to 8 hours as it is excreted largely unchanged by kidneys [1,3]. Therapeutic range: 12-46µg/ml [1].

Mechanism of action of Levetiracetam is unique where it binds to synaptic vesicle protein (SV2A), a transmembrane protein which involves calcium-dependent exocytosis of synaptic vesicles in the brain which delays nerve conduction and reduces the release of calcium from intraneuronal stores [1].The most common side effects of Levetiracetam include asthenia, headache, somnolence, dizziness, infection [2,3]. Behavioral symptoms like anxiety, irritability, aggression, apathy, and depression [1].

Therapeutic drug monitoring refers to a practice of measuring drug concentration in biological fluids at particular time intervals to maintain the desired concentration and optimize drug therapy. Therapeutic drug monitoring is performed for drugs with a narrow therapeutic range in clinically challenging situations, co morbidities, poor seizure control, marked inter-individual variability, failure of therapeutic drug response [1, 2].

We aimed to correlate the serum drug concentration with seizure control status, complaints and liver enzymes (ALT, AST) in pediatric epileptic population.

2. Patients and Methods

This prospective clinico-pharmacological study was designed and conducted in the Department of Pediatrics, Mahatma Gandhi Memorial Hospital /Kakatiya Medical College, Warangal. We have conducted our study for a period of one year (February to December). The study included 36 patients on Levetiracetam monotherapy for at least one month (whose parents give consent to participate in the study) considered as study subjects. 16 were male and 20 female. Age of study subjects ranged from 3 yrs -13 yrs, the youngest child was 3 years and oldest child was13 years were treated with two different dosage forms of Levetiracetam. The dose was given accordingly with their

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A Simple RP-HPLC Bio Analytical Method for Determination of Levetiracetam in Human Serum

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ABSTRACT

A simple, precise, accurate and linear reverse-phase high-performance liquid chromatography method using UV detection for the estimation of the novel antiepileptic, Levetiracetam was established and validated. A Simple protein precipitation method along with acetonitrile as precipitating solvent was used for the extraction of Levetiracetam from healthy human volunteers. HPLC analysis was carried out on a C18 (4.6mm*250mm, 5µm), column. The mobile phase consisted of a composition of ammonium acetate buffer (10mM, pH 5) and acetonitrile (50:50v/v) with an isocratic flow rate of 0.3mL/min over 15min runtime. Chromatograph was read at 205 nm. The retention time through this method was recorded as 7.8 min for Levetiracetam and 9.2 min for Fluconazole (internal standard). The detector response was ruled out to be linear in the concentration of 10-50 µg/mL with a mean correlation coefficient of 0.99. The limit of detection and limit of quantification were noted as 0.8µg/mL and 2.5µg/mL, respectively. The percent RSD for precision was within the acceptance criteria of not more than 2.0%. The Bio analytical Method developed above was found to be precise, accurate and linear within its therapeutic dose. This makes the method widely applicable for the regular analysis of Levetiracetam in the bio analytical matrix for toxicity or therapeutic drug monitoring.

KEY WORDS: Levetiracetam, RP-HPLC, UV detection, protein precipitation, RSD.

1. INTRODUCTION

Levetiracetam [S-enantiomer of α-ethyl-2-oxo-1-pyrrolidine acetamide; Keppra] (Fig.1) is an antiepileptic drug (AED) which is structurally and mechanistically different from other antiepileptic drugs (Hovinga, 2001). It is FDA approved drug used to treat patients with partial onset seizures, myoclonic seizures (Schachter, 2000; Nash and Sangha, 2001; Dooley and Plosker, 2000) primary generalized tonic-clonic seizures. Levetiracetam has a favorable pharmacokinetic profile; after oral intake Levetiracetam absorption was rapid and complete (Tmax< 1hour, its bioavailability is close to 100%), plasma protein binding is low (<10%), insignificant hepatic metabolism, is not metabolized by CYP-dependent pathways that produces limited drug-drug interactions, rapid attainment of steady-state concentrations, excretion is primarily renal; approximately 66% of the dose found unaffected in urine and 24% is excreted in urine as its acid metabolite form. The metabolite which excreted in urine was pharmacologically inactive. The half-life of elimination of oral Levetiracetam is between 6 to 8 hours in grown-ups (Iwasaki, 2015; Patsalos, 2004) and 5-7hrs in children (Wright, 2013). The primary adverse effects are CNS related and include a headache, asthenia, somnolence, and dizziness. Levetiracetam has better efficacy comparable to other new anti-epileptic drugs (McAuley, 2002) and it has a wide therapeutic window, where toxic doses are well differentiated from therapeutic dosages (Patsalos, 2000). The efficacy is concentration dependent (Perucca and Bialer, 1996; Pellock, 2001; Boon, 2002). For the monitoring of drug concentration serum was used as a medium.

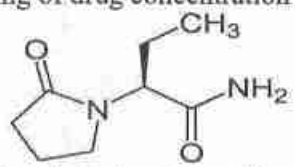

Figure.1.Chemical structure of Levetiracetam

2. MATERIALS AND METHODS

Chemicals and Apparatus: Levetiracetam was procured from Hetero Drugs Limited. Fluconazole (used as internal standard), ammonium acetate, HPLC grade water, and acetonitrile were procured from Sigma Aldrich, Mumbai. High-Performance Liquid Chromatographic system (Shimadzu's LC 20AD) typically consists of a 25µL fixed volume injector (Rheodyne). The chromatographic separation of Levetiracetam & Fluconazole (internal standard) was performed on C18 (4.6mm*250mm, 5µm), column using UV-visible detector SPD-20A.

Ethical Approval: IHEC approval was obtained after submission of protocol IHEC ECR/257/Indt/TG/2015/VCOP / MGMH / PHARM D/2017/003.

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Elucidative Histopathological Study in Female Cancer Patients

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Abstract

Aims: Because of the high incidence of cancer in females, we need to identify an accurate therapy to deal with the treatment of different types and stages of cancer. Histopathology acts as an important step to foresee the stage in which the cancer is present, its risk of metastasis, and the health outcomes after completion of treatment. Histopathology grading acts as an important criterion to determine the treatment pattern to be adopted, the prognosis in patients and other possible future risks. Hence conducting novel histopathologcial studies in major female cancers is necessary in determining the treatment plan to be chosen for the patient.

Study design: Retrospective Observational study

Place and Duration of Study: St. Ann's Cancer Hospital, Warangal, Telangana, India. The patient's histopathological reports were collected between March and August 2018.

Methodology: The study sample included 275 non-pregnant female patients aged above 20 years and diagnosed with different cancers based on histopathology. Histopathological observations were taken by collecting parameters that included specimen submitted, lymphadenopathy specimen, macroscopic appearance, macroscopic tumour site, coexistent pathology, histological tumour grade, lymphovascular invasion, and distant metastasis.

Results: The histopathologcial study concludes that regional lymph nodes (55.2%) were more common than other lymph nodes. Mostly, tumours demonstrated swollen and ulcerative appearance (48%), with grading as G0 stage (57.45%) having better prognosis and good quality of life. The most commonly observed types of tumours were as follows; In Breast Cancer: infiltrating ducal carcinoma (61. 9%), in Cervix Cancer: squamous cell carcinoma (83.92%), in Ovarian Cancer: mucinous cystadenocarcinoma (53.84%), in Vaginal Cancer, and in Vulvar Cancer: squamous cell carcinoma (100%).

Conclusion: Knowing the type of tumour to develop, the threat it poses to health, and the mechanisms that mediate its development are important factors in the management of the disease. This detailed information may aid the implementation of more accurate preventive measures in a population by selecting the proper treatment plan and understanding the risk of future chances of reoccurrence and metastasis.

Keywords: Cancer, Carcinoma, Histopathology, Infiltrating Ductal carcinoma, Metastasis, Mucinous cystadenocarcinoma, squamous cell.

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Original Research Article

Evaluation of Anticlastogenic Activity of Bael Fruit Extract on Cyclophosphamide Induced Genotoxicity in Mice, Using Micronucleus and Chromosomal Aberration Test

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Abstract

Aim: The present articles involves the investigation of anticlastogenic activity of ethanolic extract of bael fruit (*Aegle marmelos*). Acute toxicity study was conducted as per OECD guidelines up to 2000mg/kg body weight. ***Methodology:*** Anticlastogenic activity was investigated by two models *viz*, micronucleus test and chromosomal aberration method using mice. In micronucleus assay model the bone marrow was extracted form various groups of animals, staining was performed and the slides were scanned under oil immersion(100X) in LAbomed-Digi 2 microscope (90V-260V), for the presence of micronucleus in PCE (Polychromatic Erythrocytes) and NCE (Normochromatic Erythrocytes). ***Results:*** In chromosomal aberration model the animals has been sacrificed from all the groups and bone marrow was collected, processed and different types of aberrations like chromosome breaks, exchanges, rings and minute were recorded. In micronucleus assay, there was a significant ($P<0.001$) increase in the % MNPCE and decrease in P/N ratio in cyclophosphamide (50 mg/kg, i.p.) treated animals when compared with normal control animals. In chromosomal aberration test, there was a significant increase in total no. of chromosomal aberrations (rings, exchanges, breaks and minute) in cyclophosphamide treated animals when compared with normal control animals and it was time dependent. Bael fruit extract were found to be non mutagenic and significantly ($P<0.001$) decreased the cyclophosphamide induced formation of chromosomal aberrations. ***Conclusion:*** Based on the present empirical evidences the ethanolic extract of bael fruit was found significant anticlastogenic activity.

Keywords: *Aegle marmelos*, acute toxicity, micronucleus test, chromosomal aberration, genotoxicity.

INTRODUCTION

Aegle marmelos (Bael) is a wel known fruit in India which is present throughout south east Asia as a naturalised species. The fruits are used in traditional medicines and as a food throughout its range. Genotoxicity is a study of agents that interact with DNA or the cellular machinery that regulates fidelity of the genome [1]. Genetic instability involving chromosomal abnormality through minute aberration is closely associated with carcinogenesis and it is well accepted that accumulation of multiple genome wide mutation in multistep fashion leads to tumorigenesis [2]. Clastogen is an agent that induces chromosome breaks and results in gain, loss or rearrangement of chromosomal segments [3]. Cancer is caused by mutations in genes critical for the control of cell growth. Time dependent genetic degeneration, inherited or acquired deficiency in genome maintenance system forms important factor in carcinogenesis [4]. Many anticancer drugs used in the treatment of various human cancers invariably have cell toxicity and can induce genotoxic effect in non tumor cells that can give rise to secondary tumors [5]. Cyclophosphamide is an important chemotherapeutic agent that interferes with DNA integrity and function and causes the cell cycle to arrest and attempts to repair DNA. Oxidative damage is one of the main mechanisms leading to cancer. Efficient and proficient DNA repair is thus required for the effective maintenance of genome integrity. Epidemiological evidence shows that an inverse relationship exist between the consumption of vegetables and the incidence of cancer which can be attributed to protective components such as B-carotene and vitamin A and ascorbic acid. However, the inverse relationship is observed between the ingestion of green/yellow vegetables and the incidence of human cancers could conceivably be due to many other plant

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Benign Breast Diseases In Women: A Review

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ABSTRACT

Benign breast diseases can occur any time during the life span of a female [1]. Breast is a dynamic organ which undergoes cyclical changes throughout a woman's reproductive life. Hormones and growth factors acting on the epithelial and stromal elements right from the onset of puberty till menopause cause significant morphological changes leading to Aberration in Normal Development and Involution (ANDI) inflicting majority of benign breast illnesses. [2]

Keywords: Beningn breast diseases, Fibroadenoma, Fibroadenosis, Breast abscess.

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RESEARCH ARTICLE OPEN ACCESS

Analysis of Fine Needle Aspiration Cytology in Diagnosing the Patients with Breast Lump: A Prospective Study

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Abstract

Background: Fine Needle Aspiration Cytology (FNAC) is an important tool for triple assessment (clinical examination, imaging, FNAC) of palpable breast lumps. The place where nature of breast lump is difficult to determine by clinical examination FNAC has its role. **Aim:** To determine the importance of FNAC and correlate it with clinical diagnosis to identify the types of benign breast diseases and their clinical presentation. **Methods:** 102 women presenting with the complaints of breast pain and lump were included in the study for a period of 6 months followed by physical examination and FNAC. **Results:** The highest incidence of age group was found between 15-25 years,The most affected side of breast is right side 62 (60.7%),The most patients affected with upper quadrant of breast with 48 patients (47.058%), The most patients with signs and symptoms of lump in the breast of 40 patients (39.215%) On clinical diagnosis 58 patients accounted with fibroadenoma but upon FNAC only 44 were diagnosed with fibroadenoma followed by fibroadenosis, breast abscess, Intraductal papilloma. **Conclusion:** The fine needle aspiration cytology is an essential and important test in diagnosing and managing a patient presenting with lump breast. It is easy to perform, more reliable, repeatable and a simple test to diagnose patient presenting with lump breast.

Key words: FNAC, Breast pain, Breast lump, Fibroadenoma, Fibroadenosis.

INTRODUCTION

Female breasts are specialized organs consisting of glands which grow and develop during puberty and maturation leading to anatomical changes in breast. Majority of breast lesions are found to be benign than malignant. Benign breast diseases are most common and can occur at any time during the life cycle of a female.[1-3]

Out of all cancers, breast cancer stands 2nd after the cervical cancer and is the most common cause of cancer in women. It is estimated that by 2020, 70% of world cancer cases are reported from poor countries. The Indian Council of Medical Research released an analysis of cancer cases among women in various parts of country from 1982-2005, showing that about 10 years ago 10 per 1,00,000 women got breast cancer, compared with 23 per 1,00,000 women now[4,5] Fine needle aspiration cytology as become predictable diagnostic tool for identifying different breast masses. Fine needle aspiration cytology is considered to be most secure, prompt and simplest method which is cost effective, less invasive and as sensitive as biopsy. Diagnosing benign lesions reduces the need for open biopsy. Fine needle aspiration cytology is used to determine the nature of breast which therefore helps in identifying whether the breast lump is benign or malignant.[6-13]

This study aims at analysing the importance of Fine needle aspiration cytology and correlate it with clinical diagnosis to identify the types of benign breast diseases and their clinical presentation.

METHODOLOGY

This is a prospective study conducted at Sai Shree Cancer Hospital, Warangal, Telangana, India. Patients presenting with breast pain and breast lump were examined (Informed consent was obtained from the patients to perform Fine Needle Aspiration Cytology). Patients aged greater than 14 years presenting with complaints of breast pain and breast lump were included in the study. Patients less than 14 years of age who are not willing to perform Fine Needle Aspiration Cytology and patients previously diagnosed with Benign breast diseases and men were excluded in the study. A detailed demographic detail from the patients were obtained using case profile form designed and

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Assessment of Quality of Life of Cervical Cancer Patients Using ECOG-Performance Status Scale

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Authors' contributions

This research work was carried out by combined efforts and coordination of all authors. Authors SL, GRM, VM and PY conceptualized and designed the study. Authors SL, VM and GRM performed the data collection. Authors SL, VM and BB conducted the data analysis, interpretation, and prepared manuscript. Authors PY and SSA critically revised the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Background: Cervical cancer is becoming one of the emerging health burdens for womenhood and India accounts for one-third of the cervical cancer deaths globally. More than 80% of women with cervical cancer are diagnosed at an advanced stage. In this study, we aimed to assess the Quality of Life (QOL) of patients with cervical cancer after treatment and to examine the factors affecting their QOL.

Materials and Methods: This is a retrospective observational study, included 218 cervical cancer patients. The study was conducted in a tertiary care hospital in Warangal of Telangana State. The impact of socioeconomic factors and clinical factors on the QOL of the patients were studied using Eastern Cooperative Oncology Group-Performance status (ECOG-PS) scale. The protocol was approved by KIEC-KMC, Warangal. The statistical analysis was performed by using Fischer's Exact test, a value of $p<.05$ was considered as significant.

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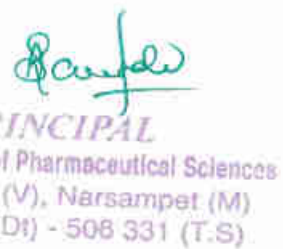

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Review Article

A Review on Migraine

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Abstract

Headache disorders, characterized by recurrent headache, are among the most common disorders of the nervous system. Migraine, the second most common cause of headache and indeed neurologic cause of disability in the world and attacks lasting 4-72 hours, of a pulsating quality, moderate or severe intensity aggravated by routine physical activity and associated with nausea, vomiting, photophobia or phonophobia. Migraine has multiple phases: premonitory, aura, headache, postdrome, and interictal. The primary cause of a migraine attack is unknown but probably lies within the central nervous system. Migraine can occur due to various triggering factors and can be managed with both pharmacological and non-pharmacological treatment. Migraine attacks are treated with nonsteroidal anti-inflammatory drugs (NSAIDS), or triptans. Non-pharmacological treatment includes cognitive behavioural therapy, Complementary Treatments, yoga therapy etc.

Keywords: Migraine; NSAIDS; Therapy

Introduction

Headache disorders, this are characterized by the recurrent episodes of headache and are the most common nervous system disorders. Headache itself is the painful and also disabling feature of few numbers of primary headaches, like migraine, cluster headache, tension type headache. Among these, the migraine headache is ubiquitous, prevailing, disabling and essentially treatable, but still under-estimated and under-treated [1].

Migraine is the second most cause of headache and the most common headache related and neurologic cause of disability in the world [2]. The name 'migraine' comes originally from the Greek word 'hemicrania', it means 'half of the head', it represents one of the most important features of the condition, that in many of the cases, the pain will affects half of the head only. However sometimes the pain is felt bilaterally, either at back or front of the head and sometimes rarely all over the body and face ('migrainous corpalgia'). The pain is generally throbbing, and sometimes pulsatile in nature and it typically increases by any form of movements made by the body or head [3].

Migraine is a common chronic headache disorder which is characterized by the recurrent attacks which lasts from 4-72 hours, with a pulsating quality. Migraine is the commonest cause of headache and its intensity includes as mild, moderate and severe, it is aggravated by any of the routine physical activity. Migraine has some associated features like, vomiting, nausea, photophobia and/or phonophobia and migraine is attributed to the activation of meningeal perivascular pain fibers and also increased sensitization of central pain neurons that process information from intracranial structures and extra cranial skin and muscles [4,5].

Triggers for migraine

A number of intrinsic or extrinsic factors can trigger migraine attack. A migraine trigger is any environmental, dietary, or physiologic factor that can provoke migraine activity in the brain [6]. In different regions the social and cultural factors can vary thereby influencing the significance of triggering factors. There are only too little studies from India on migraine triggers. It is very important to have sufficient information or knowledge about the migraine triggers for the proper management of the patients [5].

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Cervical Cancer, an Emerging Health Burden for Womenhood

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ABSTRACT

Cervical cancer is the most common cause of deaths in women worldwide and is the second most cancer in women of reproductive age after breast cancer. The cervical cancer burden is over 18 times greater in low- and middle-income countries (LMICs) than in high-income countries. 15 genotypes of the Human Papilloma Virus found to cause cervical cancer and are transmitted sexually. Persistent infection with high-risk viral types, a large number of lifetime sexual partners, co-infection with human immunodeficiency virus, immunosuppression and cigarette smoking are the risk factors for tumor development. HPV-induced carcinoma of the cervix can develop within 2 years after initial infection or may develop cancers from or adjacent to precursor lesions that progress from one stage to another over 10–30 years. Cervical cancer is a curable and preventable disease. The earliest stages of cervical cancer can be treated with surgery or radiation combined with chemotherapy and the later stages are treated with radiation combined with chemotherapy. Use of barriers in sexual intercourse, prophylactic vaccination against persistent HPV infection can prevent the cervical cancer.

Keywords: Cervical cancer, Chemotherapy, Curable, Human Papilloma Virus, Preventable, Radiotherapy,Vaccination.

INTRODUCTION

Cervical cancer is the third most common cancer in women, a major public health burden to women in many low and meddle income countries [1]. Cervical cancer is the most common cause of cancer related death in women, and it is the second most common cancer after the breast cancer worldwide, and is the second leading malignancy in women aged 15–44 years of developing countries like India [2-4]. It is estimated that 528,000 new cases and 266,000 deaths among women each year are due to cervical cancer. A disproportionate number of these cases (85 %) and deaths (87 %) occur among women living in low and middle income countries [5]. India accounts for one-third of the cervical cancer deaths globally. In absolute terms, there are over 130,000 new cases of cervical cancer every year and nearly 74,000 deaths, according to this "per every 7 minutes, Indian women are dying due to cervical cancer" [6].Cervical cancer is preventable and curable, if detected early or in pre-invasive stages [7].

ClinicalPractice

Epidemiology of orthopedic trauma admissions in a multispecialty hospital in Warangal-A retrospective study

Abstract

Introduction: To analyze the spectrum of orthopedic admissions was the aim of this study. There are multiple other reasons besides fracture for which a patient could potentially be admitted to orthopedic inpatient care.

Materials and Methods: One-year registry data of orthopedic admissions was used to analyze the spectrum of admissions. This study was performed at a tertiary level multispecialty Warangal based on patients admitted for orthopedic inpatient care.

Results: 1020 patients were joined over the one year period. These patients having an average age of 41. 14 years with a gender-wise ratio of 61:39 Male to Female.

There were (330) lower limb fractures, upper limb fractures (91), (14) Neck fractures, (3) cellulitis, (112) cervical PIVD (Prolapsed Inter Vertebral Disc), lumbar PIVD (173), cervical and lumbar (53), (104) implant removal, head injury (117), (19) chest and abdomen injury, spine (2) and with (2) admissions not specified due to coding.

Conclusion: Our results showed a rising incidence of orthopedic fractures in adult males, which is not matching out the previously reported fractures in older and young people. For the most reason for orthopedic admissions were fractured, accounted more than 2/3 of the total admissions. Biasness in gender admission reflects true picture of male-dominated society and the lower limb fractures were dominating in our study.

Keywords: epidemiology, fracture, infection, orthopedics, trauma, PIVD (Prolapsed Inter Vertebral Disc)

Introduction

There is a change in the criteria of patients who were joined in the health care unit for a fracture or other orthopedic trauma. Complications from past operations, mostly replacement of knee or hip are increased with resultant increase in the number of osteoporotic fractures. There are few papers looking at all orthopedic trauma admissions focusing on purely fracture epidemiology [1-3].

Worldwide traumatic injuries pose a significant and increasing challenge to healthcare systems [4]. Traumatic injuries are one of the main causes of mortality in the world, with 90% of the injuries estimated to occur in low and middle-income countries according to the World Health Organization (WHO) [5]. A huge number of traumatic injuries are orthopedic in nature. Injuries that cause damage to the musculoskeletal system, which includes bones, ligaments, joints, tendons, muscles, and nerves, are defined as orthopedic injuries [6]. We can categorize orthopedic injuries into traumatic and non-traumatic injuries. Fractures being the most common injury Furthermore, studies generally show that orthopedic injuries predominantly affect younger male adults [7,8]. In low and middle-income countries a limited number of studies have been conducted on the epidemiology of traumatic orthopedic injuries.

With a prevalence of 21.8% [8] and 35.1% [9] studies have shown that falls are the second most common determinant of traumatic orthopedic injuries.

With a prevalence of 63.6% [8] and 39.1% [9] studies have shown that Road Traffic Accidents (RTAs) are the most common determinant of traumatic orthopedic injuries. RTAs are the most common determinant of fractures, with a prevalence of 29.4%, [10]

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INTERNATIONAL JOURNAL OF MEDICAL REVIEWS

Mini Review

Reproductive Factors and Breast Cancer Risk

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Abstract

A neoplasm, also referred to as a tumor, is an abnormal mass of tissue, the growth of which exceeds and is uncoordinated with that of normal tissue and remains in the same excessive manner even after removal of the stimuli which evoked the changes. Tumors may be either benign or malignant. Benign tumors remain localized and are amenable to surgical removal, whereas malignant tumors, i.e. cancerous ones, adhere to any part in an obstinate manner, often invade surrounding tissue, and metastasize to distinct sites. Breast cancer occupies second place as the most occurring cancer in terms of incidence. Breast cancer is a heterogenous cancer, mostly linked with reproductive and hormonal factors in its occurrence. Nulliparous, younger age at menarche, early age pregnancy, older age at first live birth, late menopause, prolonged interval between menarche and first pregnancy, repeated abortions, first pregnancy after 35 years, and no/less breastfeeding are major risk factors for breast malignancies. Recent studies have shown that the implications of reproductive and hormonal factors in patients with breast cancer are associated mostly with BRCA1 (breast cancer gene 1) and BRCA2 (breast cancer gene 2) gene mutations.

Keywords: Reproduction, Breast Neoplasms, Menarche, Menopause, Neoplasm Metastasis

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Introduction

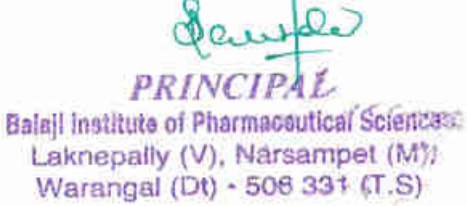
A risk factor is defined as anything that increases the probability of developing diseases in a person.[1,2] Breast cancer is a clinically heterogeneous and complex malignancy which occupies first place in women in terms of incidence around the world. Hence, it constitutes a major public health concern in both developed and developing countries as a female cancer risk.[3] Over the past decade, it has been evident that breast cancer represents as a heterogeneous disease, for which different subtypes are distinguished based on the combination of tumor grade and presence of hormone receptors, i.e. estrogen (ER), progesterone (PR), and human epidermal growth factor receptor-2 (HER2). Breast cancer subtypes, like luminal A-like (ER+/PR+,HER2-ve, grade 1 or 2), luminal B-like (ER+/PR+, HER2-ve, grade 3), luminal HER2-like (ER+/PR+ and HER2+), HER2-like (ER-ve, PR-ve, HER2-positive), and triple negative breast cancer (TNBC) (ER-ve, PR-ve, HER2-ve), present with different risk factors associated with them.[4]

Analyses from the Breast Cancer Association Consortium (BCAC) show that nulliparity and first full-term pregnancy (FFTP) at a later age increase the risk of ER+ve breast cancer. Reproductive and hormonal factors frequently contribute to the development of breast cancer. Nulliparous, younger age at menarche, early age at pregnancy, older age at first live birth, late menopause, prolonged interval between menarche and first pregnancy, repeated abortions, first pregnancy after 35 years, and no/less breastfeeding are major risk factors for breast malignancies.[5-8] Recent studies have shown that the implications of reproductive and hormonal factors in patients with breast cancer are associated with BRCA1 and BRCA2 gene mutations.[9]

Hormonal and reproductive factors are associated with breast cancer through prolonged exposure to ER. This explains why these factors are most commonly associated with hormonal histological abnormalities. There are two theories regarding this risk associated with breast malignancies. The first mechanism is induced transcription mediated by ER receptors, which determines cell proliferation; the second is stimulation of carcinogenesis due to metabolic activation and direct DNA binding. These two mechanisms, either individually or combined, mutually reinforce breast malignancies.[10]

Tumorigenesis

Breast tumors usually start from ductal hyper proliferation and then develop as benign tumors or even as metastatic carcinomas after constant stimulation by various carcinogenic factors. Tumor microenvironments such as stromal influences or macrophages are important in breast cancer initiation and progression. Macrophages generate a mutagenic inflammatory microenvironment, which promotes angiogenesis and



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Research Article

IMPACT OF STREPTOKINASE AND TENECTEPLASE ON ELECTROCARDIOGRAM (ST-SEGMENT) AND TWO DIMENSIONAL-ECHOCARDIOGRAPHY (REGIONAL WALL MOTION ABNORMALITIES) IN ST ELEVATED MYOCARDIAL INFARCTION

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ABSTRACT

Background: One of the most striving problem among coronary artery disease is ST elevated myocardial infarction. It is the infarction in which entire wall of coronary artery gets occluded and is associated with ST segment elevation (>2mm in atleast 2 chest leads or >1mm in precordial leads or limb leads) on ECG. The impact of Streptokinase and Tenecteplase on ECG and 2D-echo in patients with ST elevated myocardial infarction and the effect of timing of thrombolytic therapy were compared. Material and methods: Patients presented with chest pain within 12 hours diagnosed with st elevated myocardial infarction and received thrombolytic therapy is included in our study. Results: 40 patients were recruited for our study. 20 patients were excluded because of their advice to higher centres due to their critical condition and not available for follow up. ST elevated myocardial infarction patients who were taking streptokinase 1.5 million units and tenecteplase 40 mg completed the study. Among 20 patients 13 (65%) patients treated with streptokinase and 7 (35%) patients treated with tenecteplase. After 30 days follow up 2D echo reveals regional wall motion abnormalities in 10 patients of Streptokinase group and 2 patients of Tenecteplase group. Regional wall motion abnormalities was absent in 3 patients of Streptokinase group and 5 patients of Tenecteplase group. Conclusion: From this study we demonstrate that tenecteplase was more efficacious than streptokinase in terms of ECG readings (ST resolution), 2D-echo. Patients who were presented within 6 hours have benefited more.

Keywords: Tenecteplase, Streptokinase, ST segment, regional wall motion abnormalities, time of presentation.

INTRODUCTION

ST elevation myocardial infarction is one of the challenging problems among the acute coronary syndromes. In a year about 3 million STEMI cases are predicted to occur in India. STEMI management protocols was first done in India in the year 2011. Cardiovascular disease is one of major cause of death in India which has been projected between 1990 and 2020 and it has been accounted approximately 21% of deaths in 2010, of which almost 10% of deaths are due to coronary artery disease. More over in our study it is estimated that NSTEMI is more than STEMI[1].

STEMI is a type of acute coronary syndrome with symptoms characteristic of chest pain, shortness of breath, sweating and associated with ST segment elevation in the ECG. It is defined universal definition of myocardial infarction as new ST segment elevation at J point of at least two of >2mm of chest leads or > 1mm in any other contiguous precordial leads or limb leads[2].

12 lead ECG is important diagnostic tool because it plays an important role in decision pathway for STEMI management. Serum cardiac biomarkers are obtained to differentiate unstable angina from NSTEMI and also to assess the extent of severity of STEMI[3]. Troponin elevation is more specific and sensitive than myoglobin and creatinine kinase in myocardial infarction[4]. Typical pattern of rise and fall of CKMB are seen only in MI. Elevated levels of CKMB is also seen in other conditions but this typical pattern of rise and fall cannot be demonstrated. CKMB is first elevated in first 3-12 hours after onset of chest pain, peaks in 24 hours and returns to baseline in 48-72 hours[5].

It is class I recommended by AHA enhance of trained echocardiogram technicians to investigate regional wall motion abnormalities. The goal is to identify patients with RWMAs likely representing a significant occult coronary artery occlusion which is not evident by symptoms, ecg or initial cardiac biomarkers[6]. Apart of STEMI, ST segment elevation is also seen in other conditions like ventricular aneurysm, pericarditis, benign early repolarisation, hypothermia, hyperkalemia, hypercalcemia, LBBB and RBBB with associated repolarisation but with different patterns so carefully diagnosis should be made[7]. The treatment for STEMI includes revascularization and medical therapy.

Reperfusion strategies include pharmacologic reperfusion which is done by fibrinolytic therapy and mechanical reperfusion which is done by primary percutaneous coronary intervention. Fibrinolytic therapy remains viable option for reperfusion therapy due to limited availability of primary PCI. The most commonly used fibrinolytic agents are streptokinase, tenecteplase, reteplase, alteplase. Streptokinase is a single chain polypeptide derived from β-haemolytic streptococcus, it is antigenic in nature.

Most commonly prescribed dose of streptokinase is 1.5 million international units over 60minutes.Aspirin (325mg/day) should also be taken with streptokinase. High doses are necessary to neutralize the plasma levels of anti-streptococcal antibodies.

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Research Article

COMPARING THE EFFICACY OF PHENYTOIN, LEVETIRACETAM AND SODIUM VALPROATE IN PREVENTION OF POST-TRAUMATIC SEIZURES IN BRAIN INJURY

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ABSTRACT

Background: Traumatic brain injury is said to be a variation of brain function or other corroboration of brain pathology, which are caused by the outward jolts, penetration or expeditious brain movements within the skull which results in mental state alteration. There is evidence that use of anti-epileptics as a prophylaxis have been found to be variable efficacy against post-traumatic seizures. In patients who are diagnosed with moderate to severe traumatic brain injury (TBI) the efficacy of Phenytoin, Levetiracetam and Sodium valproate regarding the post-traumatic seizures were compared to appraise their effectiveness's. Material and methods: Males and females of 17-80 years diagnosed with moderate to severe traumatic brain injury were included in our study. Results: There was a significant reduction in early and late post-traumatic seizures in patients treated with Phenytoin and Levetiracetam than those treated with Sodium valproate.Conclusion: From this study we concluded that the efficacy of Levetiracetam was relatively similar to Phenytoin in preventing early and late post-traumatic seizures, whereas Sodium valproate showed poor efficacy.

Key words: Post-traumatic seizures (PTS), Traumatic brain injury (TBI), early post-traumatic seizures (ePTS), Phenytoin, Levetiracetam, Sodium valproate.

INTRODUCTION

Traumatic brain injury is contemplated to be a utmost, health problem, particularly in urban trauma centres with a generic difficulty in emergency properties.[1,2] Its consequential complications such as changes affecting the language, thinking , emotions or sensation, which may not be easily evident and lack of knowledge among the public, therefore it is cited as 'silent epidemic'.[3] A seizure is the' physical response to abnormal electrical activity in the brain'. [4]Post traumatic seizures have been used to describe the seizure occurrence after head trauma and they are believed to be incidentally related to the trauma itself.[5]They are arise from the traumatic brain injury and brain harm caused by physical trauma.[6] Generally post-traumatic seizures are classified into three categories based on the seizure occurrence after the brain injury as-'immediate seizures',' early seizures', and' late seizures'. Immediate seizures refers to those which occurs at or minute after the thwack; early seizures are those that occurs within a week of the brain injury whereas as those that occurs after the week of the brain injury are called as late seizures.[7,8,9] The actual therapy for TBI patients depends on the particular injuries that the patient has succoured, well timed diagnosis, imaging results and clinical data.[1,10] In a study performed for identifying the brain injury associated with development of seizures in particular species; it has shown that the enhanced risk of seizures after TBI generally depends on the injury severity and time from its occurrence.[11] An age of 65 or older, a skull fracture, brain bruise with subdural hematoma, and consciousness deficient or amnesia (more than one day) are considered to be a vital risk factors for the later seizures.[11,12,13] The time course of the risk and the risk factors are considered to be a notable factors for designing the seizure prophylaxis studies.[14] The outcomes of patients with TBI varies according to the age; in a study conducted by Aisekainen et al expressed that children are more susceptible to early seizures, whereas adolescents and adults are more prone to late seizures.[15,16] Antiepileptic's have been used for many years to prevent the development of posttraumatic seizures. The prophylactical use of the phenytoin was effective, which was proposed by early retrospective studies.[17,18,19] Nevertheless , succeeding prospective, double blind trials of treatment with phenytoin and lower doses other antiepileptic's like phenobarbital failed to show that such treatment had more benefit than placebo.[20,21,22,23] Levetiracetam has shown to have similar efficacy in preventing the seizures after the traumatic brain injury which was proposed by a study conducted by Syed Nabeel Zafar et al. However there is a limited evidence regarding this statement, further studies need to be conducted.[24] Sodium valproate has less side effects and it has been recommended to the traumatic brain injury patients. There is evidence from the clinical trials that it has no effect on reduction of late posttraumatic seizures. It has been suggested that the early posttraumatic seizures progression can be prevented by the Sodium valproate administration.[25]

MATERIAL AND METHODS

It is a prospective, comparative and observational study conducted in patients from Mahatma Gandhi Memorial hospital, Warangal. Patients were explained about the study and informed consent forms were obtained by explaining them in their local

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Anthropometric studies on school children in BTS (evaluation of underweight and over weight)

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Abstract

Malnutrition is a remnant fitness complication with school going pupil in rural Telangana. The intention of the study is to conclude the cause that correlates with skinny and hefty in school going students in BTS. This study on guardians and students aged 12-16 in BTS is a cross sectional investigational study. The attendants numbered 264 students and their guardians. Anthropometric data were gathered utilizing calibrated apparatus, socio-demographic traits and social behavior were collected in a query form. The preponderance rates of skinny and hefty amongst the children were 19.31% and 11.74%, duly. Malnutrition was more dominant in boys. key elements such as having a skinny father, mom's level of education, and physical activities out of doors on weekends for more hours were considerably correlated with malnutrition of students. By conflict, hefty father and mother, moms with high levels of education, nap time of less than 9h, and physical activities out of doors on holidays for less hours were considerably correlated with hefty children. The preponderance of skinny in school children of BTS is huge. Eventually these factors are correlated with the socio demographic traits of students and their guardians, and the habits of students.

Keywords: Underweight, anthropometric studies, cross-sectional investigation, socio demographic characteristics, BTS (Balaji Techno School).

Introduction

Problems regarding skinny and obese can badly influence both visceral as well as mental growth ofchild[1-4]. Deficiency of muscle stamina, late measurement, low bone denseness, and less work productiveness future in career are imaginable outcomes ofskinny[4-8]. Fat or hefty youngsters are prone to HTN, DM type II, and both metabolic, mental disorders. Research works in other developing nations have brought out that stratum, impoverishment, lack education of parents, awareness of mom on diet pyramid, household earnings, communicable ailments, and lack of sanitation are hazardous parameters for under nutrition In Telangana, the event of life-style as well as socio demographic traits on the happening of skinny among school going pupil hasn't looked in[8-12].

In additional evolving nations, hefty as well as heaviness amidst youngsters are emulated by excess calorie intake, decreased body fitness, high income, seniority, feminine, participation in institute feeding plan, and urbanization Thence, the intention of this study to find out the ubiquity of bony as well as hefty amidst school going students in BTS and the link among student's physique besides individual behavior and socio demographic traits[12-16].

Protocol

Plan: This cross investigational query was carried out in BTS from March to April 2018.

Attendants: This research numbered 264 children, who accomplished and returned the questionnaire. Interviews were done to gather info on food consumption; students are further categorized on the basis of their health condition: 50 underweight subjects, 179 normal-weight subjects, 28 overweight subjects and 07 obese subjects.

Apparatus: Physique of pupil was calculated with an Ajanta digital balance. Standing height was calculated utilizing Freemans measuring tape. (BMI) for (BAZs) were determined by working on Medscape CME App.

The query form, which is consisting of 23 items, was framed to gather info, containing pupil DOB, sex, and socio-demographic traits. The query form also involved query on pupil's physical activities, napping, way of life, and alternate health-related questions.

Information of dietary condition of pupil: A cut-off point z-score <_2.00 SD and >1 SD for BAZ (BMI-for age z-score) were utilized to separate skinny and hefty pupil, therefore, to rule out the BMI condition of pupil.

Procedure: Each class in school was inspected by the volunteers, at a time. Before issuing the query form, a short detailed confession of the survey was delivered to the children. With the help of the faculty member, each pupil was presented with a query form to take home.

Journal of Innovation in Pharmaceutical Sciences

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Exploring *Ziziphus Sps fruit* mucilages as a pharmaceutical excipients in Novel Drug Delivery Systems

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ABSTRACT

Recent trends towards the use of natural mucilages demand the replacement of synthetic additives with natural ones. Today, the entire globe is showing interest on natural drugs and excipients as of their chemically inert, biocompatible, biodegradability, non-toxic, economic, eco-friendly and commonly available. In the present work we have extracted the mucilages from *Ziziphus mauritiana* and *Ziziphus jujuba* fruits and evaluated for loss on drying, pH, swelling index, viscosity studies, bioadhesive strength, powder micromeritics properties, FTIR, DSC and XRD study and finally compared with the synthetic polymers (HPMC K4M CR, HPMC K15M CR, Na CMC and Carbopol® 974).The evaluation results of the above extracted mucilages are exhibited like synthetic polymers in case of micromeritics, bioadhesive strength and viscosity studies. Finally, it was concluded that the extracted mucilages were used as excellent pharmaceutical additives and good replacement for synthetic polymers.

KEYWORDS:

Bioadhesive strength, mucilages, XRD and *Ziziphus.*

1.INTRODUCTION

Nowadays the plant derived mucilages have recommended as excellent pharmaceutical ingredients due to their high water-solubility or dispersibility, readily available, non-toxic, capable of chemical modifications, low cost, free availability, biodegradability, biocompatible, better patient tolerance as well as public acceptance and eco-friendly nature. These natural mucilages are used as diluents, binders, disintegrants, thickeners, protective colloids in suspensions, gelling agent, suppository bases [1]. viscosity enhancers, stabilizers, solubilizers, emulsifiers and bioadhesiveness in the pharmaceutical dosage forms and sustained-release tablets; in addition they also applied in cosmetics, textiles, paints and paper-making Industries[2,3]

The plant based mucilages (also called as biopolymers) has been studied for their application for different pharmaceutical dosage forms like solid dosage forms(tablet, granules), tablet coating materials, mucosal drug delivery systems, colloidal drug delivery systems, monophasic and biphasic liquid formulations,

ophthalmic drug delivery systems and etc [4,5].

These materials include; *Gleditsia* triacanthos Linn, agar, *isapghula* husk, konjac, *Sesbania* gum, galactomannon from *Mimosa* scabrella, *guar gum,* tamarind seed gum, chitosan, mucilage from the pods of *Hibiscus esculenta* and etc [6]. Natural mucilages or biopolymers are more advantages compared to synthetic polymers owing to their outstanding physicochemical properties that they afford, often at cost below those of synthetic polymers [7, 8].

The aim of the present study was to isolate the mucilage from *Ziziphus mauritiana* and *Ziziphus jujuba* and evaluated for percentage yield, loss on drying, pH, swelling index, viscosity studies, bioadhesive strength, powder micromeritics properties, FTIR, DSC and XRD study and finally compared with the synthetic polymers (HPMC K4M CR, HPMC K15M CR, Na CMC and Carbopol 974) for investigating excellent pharmaceutical excipients.

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2.MATERIALS AND METHODS

Ziziphus mauritiana and *Ziziphus jujuba* were collected from the local area of Narsampet, Telangana region (India) in the month of December–February. Acetone was purchased from Qualikems Pvt. Ltd, New Delhi and all the chemicals and reagents used in this study were of analytical grade.

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Simultaneous Quantitative Determination of Nitidine, Chelerythrine and Sanguinarine Using HPTLC from Callus Extract of *Zanthoxylum rhetsa*

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Abstract

Nitidine, Chelerythrine and Sanguinarine, all these three alkaloids are benzophenanthridine alkaloids. Nitidine was used as an anti-HIV, anti-malarial and anti-cancer. Chelerythrine had anti-cancer and anti-inflammatory activities. Sanguinarine was widely used as an anti-plaquestic and anti-cancer. High performance thin layer chromatography (HPTLC) method was used for simultaneous quantification of Nitidine, Chelerythrine and Sanguinarine in callus extract of *Zanthoxylum rhetsa* by using Silica gel 60 F_{254} as stationary phase and ethyl acetate:methanol:water:diethylamine (30:5:2:0.5 v/v) as mobile phase at 280 nm. The linearity concentration range was 5 - 160 µg/band of each alkaloid. The R_f values of Nitidine, Chelerythrine and Sanguinarine were found to be 0.28, 0.49 and 0.73. The limit of detection and limit of quantification were found to be 0.026, 0.088 µg/spot and 0.010 and 0.033 µg/spot, 0.0104 and 0.035 µg/spot respectively for Nitidine, Chelerythrine and Sanguinarine. HPTLC method was developed and validated according to ICH guidelines for simultaneous estimation of Nitidine, Chelerythrine and Sanguinarine and proved to be simple, specific, accurate, robust and rapid.

Keywords

Nitidine, Chelerythrine, Sanguinarine, HPTLC

1. Introduction

Benzophenanthridine alkaloids are one of the most important sub-classes of isoquinoline alkaloids, which are the major group of pharmacologically useful

RESEARCH ARTICLE

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Evaluation of Antiarthritic Activity of Ethanolic Extract of *Tradescantia spathacea*

Cheyala Sumalatha[1*], Banda Sandya[1], Jesetti Nagaraju[2], Ch Hari Prasad Murthy[3], Sunil Junapudi[1]

Abstract: The various extracts of *Tradescantia spathacea* were investigated for its anti-arthritic activity in male albino rats. Freund's adjuvant induced arthritis model was applied for the evaluation of anti-arthritic activity. Dexamethasone (0.1 mg/kg) was used as a regular drug. The ethanolic extract of *T. spathacea* exhibited significant anti-arthritic activity. The doses of 150 and 300 mg/kg of the ethanolic extract of *T. spathacea*, biochemical parameters assayed were rheumatoid factor, C-reactive protein (CRP), superoxide dismutase (SOD), catalase (CAT). The ethanol extract at the dose of 300 mg/kg body weight inhibited the rat paw edema, which is comparable with standard drug dexamethasone, inhibition of rat paw edema after 21 days. The results of the present investigation concluded, ethanol extract of *T. spathacea* possess a significant anti-arthritic activity against adjuvant induced arthritis and justifying its therapeutic role in arthritic condition.

INTRODUCTION

Tradescantia spathacea Swartz [syn. Rhoeo discolor L. H´er Hance, Rhoeo spathacea (Swartz) Stearn] is a plant of India that is in use in traditional medicine, This plant belongs to the Commelinaceae family. [1] In the Southeastern of Mexico, it is known as "Maguey Morado" (Purple Maguey) and the decoction of the leaves is daily free-consumed as curative of cancer, without existing scientific evidence of such property. [2] It is known that the aqueous extract of *T. Spathacea* blocks the antiadrenergic action of bretylium [3] and is contraceptive in rats. [4] The extracts of *T. Spathacea* have been incorporated in cosmetics to improve the appearance of skin. [5] Some chemicals detected in *T. Spathacea* are flavonoids, anthocyanins, saponins, carotenoids, waxes, terpenoids and coumarinic and steroidal compounds. [6, 7] On the other hand, *T. Spathacea* ethanolic crude extract evaluated in an *in-vitro* system, showed antioxidative activities [8] and antimicrobial Properties. [9] Due to the absence of scientific reports *in-vivo* that corroborate the antiarthritic activity property of *T. Spathacea*, it is evident the importance of the exploration of this plant.

MATERIALS AND METHODS

Drugs and Chemicals

Dexamethasone (GSN Pharmaceutical Limited, Kukatpally, Hyderabad, India) and Ethanol (Changshu Yangyuan Chemicals, China.) were used reference standards for antiarthritic activity.

Animals

Healthy adult albino wistar rats weighing 200-250 grams of either sex were chosen for the study. Animals were housed in appropriate cages in uniform hygienic conditions and fed with standard pellet diet (Amrul Laboratory Animal Diet) and water *ad-libitum*. They were fasted overnight before the day of test. Animals were housed within the departmental animal house and the room temperature was maintained at 27°C. Animal studies had approval of IAEC. An authority regulating animal experiments and was approved by the Institutional Animal Ethics Committee Reg. No. 1648/PO/A/12/CPCSEA formed as per CPCSEA guidelines.

Antiarthritic Activity

Freund's adjuvant induced arthritis [10] model was used to assess the anti-arthritic activity in albino rats. Animals were divided into five groups of six animals each. Male wistar albino rats weighing about 180-220 gm were used for this study. Group-I served as a control which received only the paraffin oil. Group-II Served as a negative control which received only the Complete Freund's adjuvant (0.1ml) only. Group-III Served as test group which received ethanolic extract of *T. Spathacea* (150 mg/kg, p.o.). Group-IV Served as test group which received ethanolic extract of *T. Spathacea* (300 mg/kg, p.o.). Group-V Served as positive control which received dexamethazone (0.100 mg/kg, p.o.). Arthritis was induced by injecting 0.05 ml of suspension of killed *Mycobacterium tuberculosis* bacteria (0.5% w/w) homogenized in liquid paraffin into the left hind paw. Drug treatment was started from the initial day i.e. from the day of adjuvant injection (0 day), 30 min before adjuvant injection and continued till 21st day. Paw volume was measured on 1st, 6th, 11th, 16th and 21st day with the help of whereby paw volume was measured using a volume transducer (model no.vt-2723) attached with strain gage coupler of Student Physio graph (model no. PG-02, INCO, Ambala, India). The mean changes in injected paw edema with respect to initial paw volume, were calculated on respective days and percentage inhibition of paw edema with respect to untreated group (control) was calculated. The changes in body weight were recorded daily. On the 22nd day, Blood was collected from tail vein and kept in room temperature for 1h and then centrifuged for 10 min to obtain serum. [11] The following serum biochemical parameters were assayed. Rheumatoid factor, C - reactive protein (CRP), Superoxide dismutase (SOD), Catalase (CAT), Lipid.

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Retrospective Study on Consanguineous Marriage Birth Deffects Among Patients Attending Pediatric Ward In Tertiary Care Hospital, South India

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Abstract: *Consanguinity is the quality of being descended from the same ancestor as another person. Consanguinity is prevalent in many middle eastern and Arab cultures and societies. Genetic disorders and congenital abnormalities occur in about 2%-5% of all live births, account for up to 30% of paediatric hospital admissions and cause about 50% of childhood deaths in industrialised countries. To determine the prevalence of consanguineous marriages, type of consanguinity and to determine the role of consanguinity on congenital malformations so as to create awareness. Retrospective hospital based study with consecutive sampling of 1552 babies in Mahatma Gandhi Memorial Hospital over a period of 12 months from January to December 2015.Out of 1552 babies 61 babies were having congenital malformations. Malformed babies were noted in 8 % of consanguineous marriages versus 1 % in non-consanguineous marriages, with P value of 0.04 which is statistically significant. In conclusion, congenital malformations are more in consanguineous marriages i.e., consanguinity may play important role in high rates of malformations in children. In order to prevent, genetic counselling before marriage must be applied for all couples because they may have family history of genetic disorders and especially consanguineous couples.*

Keywords: *Consanguineous marriages, congenital anomalies, genetic counselling.*

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I. Introduction

The word consanguinity comes from Latin words, *con* meaning shared and *sanguis* meaning blood. In clinical genetics, consanguineous marriage is defined as a union between two individuals who are related or second cousins or closer.

However, the most common form of consanguineous marriage worldwide is between first cousins, who on average have co-inherited 1/8 of their genes from one or more common ancestors. First cousin offspring will therefore be homozygous at 1/16 of all loci, which is consanguinity expressed as a coefficient of inbreeding [f] of 0.0625[1].

The preferred types of consanguineous marriage vary according to tradition, so that in Arab society's first cousin marriage between a man and his father's brother's daughter is most common.

Population stratification may therefore be a major influence in the measurement of consanguinity associated morbidity and mortality, with straight forward comparison between the progeny of first cousins and unrelated parents genetically invalid unless both sets of parents are known to be members of same caste, tribe [2].

Consanguinity is prevalent in many Middle Eastern and Arab cultures and societies [3], some studies have shown significant differences in genetic disorders between children born to consanguineous marriage partners and those born to non-consanguineous parents [4] while others have found no significant differences [5]. Genetic disorders and congenital abnormalities occur in about 2%-5% of all live births, account for up to 30% of paediatric hospital admissions and cause about 50% of childhood deaths in industrialised countries [6].

Mental disturbances are defined as structural defects of the body and/or organs that impair viability and require intervention. Minor morphogenetic errors are small structural developmental disturbances that do not impair viability and do not need to be treated. Preventive public health measures administered through pre- and peri-conception and prenatal health care services decrease the frequency of certain congenital anomalies including those due to consanguineous marriages.

RESEARCH ARTICLE

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Synthesis and Evaluation of Novel 1-Substituted 7-Azaisatin Derivatives as Anti Microbial Agents

Siddartha Kumar P[1, 2*], Harinathbabu V[3], Basaveswara Rao M V[1]

Abstract: A series of novel 1-substituted 7-azaisatin derivatives synthesized from 7-azaindole by oxidation with *N* bromosuccinamide further involves incorporation of isonicotino- hydrazide with 7-aza isatin then treated with various alky halides to give titled compounds and screened for antimicrobial activity. In view of the antimicrobial property of this pharmacophore it was visualized that its combined effect with an active moiety may result in increased antimicrobial activity. All the synthesized titled compounds exhibited excellent to moderate antimicrobial activity against *Bacillus subtilis, Staphylococcus aureus, Proteus vulgaris, Escherichia coli* and two fungal strains *Candida albicans, Aspergillus niger.*

INTRODUCTION

Isatin is a molecule with great synthetic versatility and enormous pharmacological potential that has been intensively investigated and it is a versatile lead molecule for designing of potential antimicrobial agent.[1, 2] In recent years, the isatins derivatives have been found to possess potent wide spectrum of activities like antibacterial, [3, 17] anti-HIV, [4] anti Viral, [5] antifungal, [6] antitubercular, [7] anticonvulsant, [8, 9] antioxidant, analgesic, [10] and anti-inflammatory, [11] anticancer. [12] And it is a versatile lead molecule for designing of potential antimicrobial agent. Some of these compounds have been described as more efficient than standard antibiotics where as an isonicotinic acid-derived hydrazide (pyridine-4-carbohydrazide), is a first-line drug for TB treatment, it activates the KatG enzyme to form the INH–nicotinamide adenine dinucleotide (NAD) adduct. [14] This adduct inhibits the InhA and enoyl–acyl carrier protein (ACP) reductase enzymes that produce type II fatty acid synthase (FAS II), which synthesizes mycolic acids that lead to cell death. Considerably the biologically potent complexes that are of wide interest because of their diverse biological and clinical applications. So, we aimed to develop Novel 1-substituted 7-azaisatin derivatives and evaluate the inhibitory effects of these compounds against gram positive and gram negative bacteria and on fungal strains. The chemical structures of the synthesized compounds were confirmed by means of their IR and 1HNMR spectral data. The synthesized compounds were tested for their antimicrobial activity by cup-plate method.

MATERIALS AND METHODS

Chemistry

All the chemicals and organic solvents used for the synthesis were of laboratory grade obtained from SD fine Chemicals., Mumbai, India. The reactions were monitored using thin-layer chromatography (TLC) performed with plates containing silica gel and the spots were visualized using iodine. Melting points were obtained on an electro thermal apparatus and are uncorrected. Infrared spectra were measured using potassiumbromide (KBr) pellets on FTIR Brucker spectrophotometer and frequencies are expressed in cm^{-1}. The 1HNMR spectra were recorded on 400MHz Brucker DPX using $CDCl_3$ Chemical shift values are reported as values in ppm relative to TMS as internal standard. The abbreviations used are as follows: s-singlet; d-doublet; m-multiplet. Mass spectra were recorded on VG Autospec using EI-Ms mode. The coupling constants (*J*) are reported in Hz and refer to apparent peak multiplicities. Elemental analysis was used to ascertain the purity (>95%) of all compounds for which biological data was determined and was performed on PerkinElmer series-2400 and all values were within 0.4% of the theoretical values. The titled compounds were coded as SKa-m. The synthetic strategies adopted to obtain target compounds are depicted in scheme 1.

General Procedure for the Synthesis of Title Compounds

1. Synthesis of 1H-pyrrolo[2,3]pyridine-2,3-dione(II)

Taken 7-aza indole (2.4 mmol), N-bromo succinimide (0.90g, 5.0 mmol) in 20ml of anhydrous dimethyl sulphoxide were stirred at 60°C for 6h and then above 80°C for 20 h under reduced pressure. Poured the reaction mixture into 50 ml water followed by extracting with 10 ml of dichloromethane three times, the combined extracts were washed three times with distilled water. After removal of the solvent, the residue was purified with dichloromethane. Molecular formula - $C_7H_4N_2O_2$, Molecular weight – 148, R_f value - 0.52 (Chloroform:Ethyl acetate 3:2), yield-82%, FT-IR spectrum (KBr, in cm^{-1}): 3448(N-H str), 1617(C=O str), 1461 (Ar HC=CH str),^{1}H NMR ($CDCl_3$), δppm): 6.8-7.8(m, 4H, Ar-H), 11 (s, 1H, NH), Mass m/z 402 (M+1), Elemental analysis (Calcd/Found)%: C, 20.92/21.0; H, 1.00/0.99; I, 63.15/63.0; N, 6.97/6.90; O, 7.96/7.99.

2. Synthesis of N'-(1, 2-dihydro-2-oxopyrrolo [2,3] pyridin-3 ylidene) Isonicotino Hydrazide (III)

Dissolved an appropriate quantity of 7-azaindole-2,3-dione (0.01 mol) in alcohol (20 ml) and added isonicotinohydrazide (0.01 mol) and few drops of glacial acetic acid. The reaction mixture was stirred well and refluxed for 3h. Filtered the resultant orange crystalline

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ANTIDEPRESSANT AND ANXIOLYTIC EFFECTS OF ALCOHOLIC EXTRACT FROM TEPHROSIA PUMILA (L.) PERS

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ABSTRACT

Tephrosia pumila (L.) Pers (Leguminosae (Fabaceae)), is an herbaceous climber that has been generally utilized in Indian traditional medicine for the treatment of different central nervous system (CNS) disorders. Nevertheless, the available scientific information about this species is rare and there are no reports identified with its conceivable impact on the CNS. In this work, the effects of ethanolic extract of *Tephrosia pumila (L.) Pers* (TPP) were assessed in rats utilizing behavioral tests sensitive to clinically effective antidepressant and anxiolytic effects compounds. The extract (200 and 400mg/kg), administered intraperitoneally, was able to decrease the immobility time of rats dose-dependently when subjected to both tail suspension and forced swim tests for antidepressant activity and elevated Pluse maze test, actophotometer test for anxiolytic effect and the effects are comparable to that of standard drugs i.e., Diazepam (20mg/kg). Neither the extracts of TPP and Diazepam, at the doses tested, produced significant effects on locomotor activity when subjected to open field behavioral test. These results demonstrated that TPP had specifically antidepressant effects in *vivo*. In conclusion, the present study recommended that TPP extracts possessed potential antidepressant and anxiolytic effects which could be of therapeutic interest for using in the treatment of patients with depressive disorders.

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A Rare Congenital Silver Russell Syndrome- Case Report

Abstract

Silver-Russell Syndrome (SRS) is a very rare genetic disorder present at birth that involves poor growth, low birth weight, short stature and differences in the size of the two sides of the body. We present 8 years male boy came to Mahatma Gandhi Memorial Hospital, Warangal, Telangana, with complaints of cryptorchidism, triangular face, maxillary hypoplasia, and is height and weight are less than 3rd percentiles. No history of consanguineous marriage of their parents. Growth hormone therapy is often considered for the child with SRS.

Keywords: Silver-russell syndrome ; Short stature ; Cryptorchidism; Maxillary hypoplasia

Case Report

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Introduction

Silver-Russell Syndrome (SRS) is a clinically and genitically a heterogeneous disorder of growth with a wide range of additional dysmorphic features. SRS may compromise different disorders with clinically related to phenotypes or may result from disturbance ofdifferent components of a single biochemical or endocrinological pathways are involved [1,2]. SRS is also called as asymmetry dwarf-dysgenesis syndrome [3]. The estimated incidence of SRS is approximately 1/50,000 to 1/100,000 births [4]. Male and female children are equally affected.The disease in children was characterized by congenital hemi hypertrophy, low birth weight, short stature, facial abnormalities, growth retardation [5,6].

Case Report

We report a case of an 8-years-old boy came to Mahatma Gandhi Memorial Hospital, Warangal, Telangana. on physical examination the boy was appeared to be cryptorchidism, triangular facies, maxillary hypoplasia, and his height and weight are less than 3rd percentiles. His parents did not have a consanguineous marriage. Electroencephalography and head Magnetic resonance Imaging showed normal results. Kidney, liver and thyroid lab reports were normal. Growth hormone stimulation test shows low levels of growth hormone. Based on these symptoms and lab reports it was diagnosed as SRS. Treatment includes Recombinant human growth hormone is given subcutaneous injection at a dose of 0.48mg/kg per week, physiotherapy and nutritional support was advised and counseled for regular follow up and discharged (Figure 1).

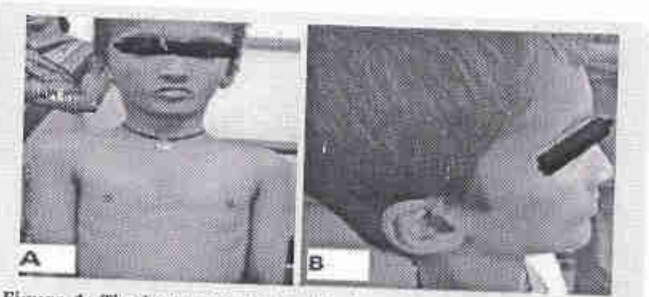

Figure 1: The boy was appeared to be cryptorchidism, triangular facies, maxillary hypoplasia, and his height and weight are less than 3rd percentiles.

Discussion

SRS was first described Silver and his colleagues in 1953 and later by Russell in 1954. In 1953, Silver et al reported two unrelated children with congenital hemihypertrophy, low birth weight, and short stature [7] and in 1954 Russell described five unrelated children with extreme intrauterine growth retardation and characteristic facial features [4]. Clinically and genetically SRS is a heterogeneous disorder, and the reason is unknown.

Chromosome abnormalities are involved in these disease among them chromosomes 7 and 17 are frequently involved. In 7% of sporadic cases, maternal uniparentaldisomy of chromosome 7 has been identified. Recent findings suggested that imprinting defects in the region of 11p15 is also pays in SRS [8-11]. According to pathophysiologically, growth failure is a primary abnormality. Patients typically present with intrauterine growth retardation, difficulty in feeding, failure to thrive, or postnatal growth retardation and also growth hormone insufficiency may be present. Abnormalities of natural growth hormone secretion and subnormal responses to stimulating growth hormone stimulation have been reported in a significant number of children with SRS [12,13].

Diagnostic criteria recently proposed that SRS should have at least 4 criteria they are dysmorphic facies characterized by small triangular facies, a high forehead with small jaws, prominent nasal bridge, small chin,together with a wide, thin, "shark like

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FORMULATION AND EVALUATION OF AMOXICILLIN FLOATING TABLETS

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ABSTRACT

Recently, many drugs have been formulated as floating drug delivery systems with an objective to sustain release and restrict the region of drug release to stomach. The purpose of the investigation was to prepare a gastro retentive drug delivery system of Amoxicillin. Amoxicillin is a Semi synthetic antibiotic, belonging Beta-lactum family, which is effective for bacterial treatment, especially for helicobacter pylori infection. Different formulations were formulated using various concentrations of Guar gum and Ethyl Cellulose. All the formulations were evaluated for physico-chemical parameter like weight variation, thickness, hardness, friability, drug content, swelling index, floating lag time and in-vitro drug release. In-vitro drug release data was treated according to Zero, First, Korsemeyer-Peppa's and Higuchi's kinetics to access the mechanism of drug release. On the basis of *in-vitro* release studies & physico-chemical parameters, the formulation F7 with 30% of Guar gum, 5% ethyl cellulose and 15% $NaHCO_3$ sustained drug release with maximum cumulative of 98.79% for a period of 12h and it was found to be better than other formulations, hence F7 was selected as optimized formulation. The main aim was to optimize the formulation for 12 hrs in-vitro drug release with the use of polymer.

KEYWORDS: Amoxicillin, Floating tablets, Gastro retentive, Guar gum.

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SYNTHESIS, *IN VITRO* ANTICANCER AND MOLECULAR DOCKING STUDIES OF NEW BISISATINS AS ANTICANCER AGENTS

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ABSTRACT

Fifteen symmetrical bis-schiff base of isatin derivatives were synthesized by reaction of succinic acid hydrazide with various isatins and the synthesized compounds were characterised by spectral analysis. The substances were further subjected to in vitro cytotoxicity evaluatation against A549 and MCF-7 cell lines with MTT assay. All the synthesized compounds shown significantly inhibited the growth of MCF-7 cells over the A549 cells and the IC_{50} values of all the compounds were found between 10.24 and 28.65 µM. The compound **6j** has resulted highest cytotoxicity in the entire series studied, in addition **6d**, **6c, 6e** and **6n** were shown to display moderate activity. Further, molecular docking studies of the ligand's were done on EGFR using GRIP batch docking method. The compounds **6c, 6d, 6e, 6i, 6j** and **6l** exhibited good docking (PLP) scores with receptor having Hydrogen, Hydrophobic and Vander Waal's interactions.

KEYWORDS: Anticancer; Isatin; Molecular docking; Succinohydrazide; MTT Assay.

INTRODUCTION

Cancer is defined as a group of diseases characterized by uncontrolled growth and the spread of abnormal cells which if left untreated may lead to death.[1] Cancer continues to be a major health problem worldwide and more than ten million new cancer cases occur annually, roughly half of which is prevalent in the developed countries and the disease causes over six million deaths a year.[2] Till date chemotherapy has been the mainstay of cancer therapy. However the use of available chemotherapeutics causes undesirable side effects, due to lack

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PREVALENCE OF DYSLIPIDEMIA AND ITS ASSOCIATION WITH GLYCEMIC CONTROL IN INDIAN TYPE 2 DIABETES POPULATION

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Abstract

Background and Aims. *Diabetes mellitus is considered as one of the major health problems in India. With nearly one million diabetic deaths every year, India turned out as the "diabetic capital of the world". Diabetes is considered as one of the seven major controllable risk factors for cardiovascular disease. Dyslipidemia is considered as one of the most important cardiovascular risk factors among type 2 diabetic population. In the current study we aimed to evaluate the prevalence of dyslipidemia and its association with glycemic control among the type 2 diabetic population.* ***Material and methods.*** *The study was conducted from April to December 2015 using random sampling technique among type 2 diabetic patients of Warangal region in Telangana State, India. Every 10th type 2 diabetic patient visiting the clinic were approached to participate in the study. Out of all the approached 126 patients, 108 agreed to participate in the study. Statistical analysis of the data was performed through Graphpad Prism 6.0. A two-tailed p value <0.05 was considered as statistically significant.* ***Results.*** *Prevalence of dyslipidemia, defined as derangement or abnormality in any one of the serum lipids was found to be 97.2% in our study sample. Dyslipidemia in good glycemic control group (HbA1c ≤ 7%) was found to be less compared to that of poor glycemic control group (HbA1c > 7%).* ***Conclusion.*** *Prevalence of dyslipidemia seem to be very high among our study sample. Our study emphasizes the importance of glycemic control in the prevention of serum lipid abnormalities. A better glycemic control among diabetic patients may help in the prevention of early predisposition to dyslipidemia.*

key words: *Type 2 Diabetes, HbA1c, Dyslipidemia, Glycemic control*

Background and Aims

Diabetes mellitus is considered as one of the major health problems in India. With nearly one million diabetic deaths every year, India turned out as the "diabetic capital of the world" [1]. Diabetes mellitus significantly increases the risk of myocardial infarction, amputation, stroke and death [2]. In diabetic patients ageing 65 years or older, approximately 68% of people die from some form of heart disease and 16% die from stroke. Risk of developing heart disease or stroke in adults with diabetes is two to four fold higher compared with that of adults without diabetes.

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A Prospective Observational Study of Microbiological Analysis and Antibiotic Sensitivity Patterns in Diabetic Foot Ulcer Patients

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Abstract: Foot infections are one of the foremost causes of mortality and morbidity in developing countries. Diabetes is the principal cause of nontraumatic lower extremity amputations and accounts for more than 85% of amputations. The determination of antimicrobial susceptibility of a clinical isolate is often essential for the most advantageous antimicrobial therapy of infection. Infection with multidrug resistant organisms (MDR) may enhance the length of hospital stay, cost of management and may cause further morbidity and mortality. Aims of this study were to determine the bacterial spectrum in diabetic foot ulcers and institute the appropriate antibiotic therapy to avoid further complications. Deep wound swab were cultured from 37 patients, who were receiving the treatment for the diabetic foot infections. Specimens were tested by Gram stain, culture & antibiotic sensitivity. Results showed that Gram negative aerobes were the most frequently isolated bacteria constituting 26 isolates (87%), followed by Gram positive aerobes 4 (13%) cases. Commonest pathogens isolated were *Klebsiella species* 12 (40%), followed by *Proteus species* 7 (23%), *E. coli* 5 (17%), *Citrobacter* 2 (7%), *S.aureus* 1(3%), *Coag. negative staph.* was found in 3 (10%) cases. Commonest antibiotics effective against Gram negative isolates were amikacin 69% followed by meropenem 62%, cefipime 35% and imipenem 23%. Gram positive organisms were sensitive to amikacin (100%) and vancomycin (100%). It can be concluded that Gram negative isolates were leading infectious agents from specimens. Gram negative bacteria were more sensitive to Amikacin followed by Cefipime, Meropenem, Imipenem and Ciprofloxacin and more resistant to Piperacillin/Tazobactam, Ofloxacin, Cefuroxime and Tetracycline. Our study also helps the physician for selection of the proper antibiotics to improve the wound healing and also leads a pathway for the formation of the institutional antibiotic committee to avoid the irrational antibiotic usage.

Key words: Diabetic Foot Infections · MDR · *E. coli* · Klebsiella · Amputations

INTRODUCTION

Diabetes is one of the endocrine disorders and is considered as a disease of developed countries [1]. Diabetes mellitus is a metabolic disorder, which resulted from insulin deficiency and is leading to significant morbidity and mortality [1]. A chronic hyperglycemic condition in diabetes precipitates long term damage, dysfunction and failure of various organs, such as eyes, kidneys, nerves, heartand blood vessels [2]. The remarkable increase in the prevalence of diabetes can be attributed to several factors [3]. World wide Diabetes has showed the spread of modern lifestyle and can be associated to an increasingly overweight and sedentary population [3]. Diabetes is a fairly common disease seen in India with a prevalence of almost 12-17% in the Indian urban population as per a study in 2001 with a prevalence of 2.5% in the rural population [4]. Diabetes hampers the life of nearly 50.8 million people in India and of equivalent enormity in other developing countries [4]. According to the Diabetes Atlas 2013 accessible by the International Diabetes Federation, the number of people with diabetes

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EFFICACY OF EPALRESTAT, DULOXETINE AND EPALRESTAT IN COMBINATION WITH METHYLCOBALAMINE IN DIABETIC PERIPHERAL NEUROPATHY

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Abstract

Diabetic neuropathy is a major long term problem allied with diabetes that can cause serious disability and also death. Fifty to seventy five percent of all ulcerations and non trauma amputations are a consequence of diabetic neuropathy. Epalrestat, duloxetine and epalrestat with methylcobalamine are widely used to overcome neuronal damage. This study was designed to evaluate the efficacy of these three drug regimens. ***Material and methods:*** *Patients included in this study were experiencing pain because of diabetic neuropathy for more than 6 months but not more than 5 years.* ***Results:*** *From 236 subjects with diabetic neuropathy included in the study, 181 patients concluded final analysis. 55 patients dropped from the study (14, 23 and 18 patients from duloxetine, epalrestat+methylcobalamine combination and epalrestat respectively). Mean pain score was reduced from 5.01±1.99 (severe pain) at first visit to 2.86±2.10 (moderate pain) in the epalrestat group, from 6.41±1.73 (severe pain) at first visit to 2.38±1.58 (mild pain) in the duloxetine group and from 5.86±1.76 (severe pain) to 2.88±1.91 (mild pain) in the epalrestat with methylcobalamine group.* ***Conclusion:*** *We conclude that duloxetine was significantly more effective than epalrestat and epalrestat in combination with methylcobalamine in relieving diabetic neuropathic pain.*

key words: *Diabetes, Peripheral Neuropathy, Epalrestat, Duloxetine, Methylcobalamine*

Background and Aims

Diabetic neuropathy (DN) encompasses a wide, heterogeneous group of clinical and subclinical syndromes [1]. It is a major long term problem allied with diabetes that can cause serious disability and also death [2]. Fifty to 75% of all ulceration and non-traumatic amputations are a consequence of diabetic neuropathy, and cause more hospitalizations than all other diabetic complications [3]. DN affects the nervous system and causes extensive damage. Neurologic complications are not reserved for specific type of diabetes but occur equally in type 1 and type 2 [4]. Diabetic peripheral neuropathy (DPN) is often painful and debilitating condition that is caused by damage to any nerve in the peripheral nervous system. It

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CASE REPORT ON COLLODION BABY

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ABSTRACT
Lamellar Ichthyosis is also called as ichthyosis lamellaris and non-bullous congenital ichthyosis is a rare inherited skin disorder affecting 1in 600000 people. A preterm (32 weeks) male child was born on 18th July 2016 at Khammam government hospital weighing 2.200 grams, length 48cm, head circumference 33.5cm. The mother age is 22 years and age at marriage is 19 years. No history of consanguinity marriage of parents. The membrane itself peels from day 3 revealing red colored skin underneath. Minimum handling and aseptic conditions should be maintained whenever dealing with the baby.

INTRODUCTION
Lamellar Ichthyosis is also called as ichthyosis lamellaris and non-bullous congenital ichthyosis is a rare inherited skin disorder affecting 1in 600000 people.[1] The term ichthyosis is derived from Greek word "Ichthys" meaning fish and refers to fish scale like appearance".[2]

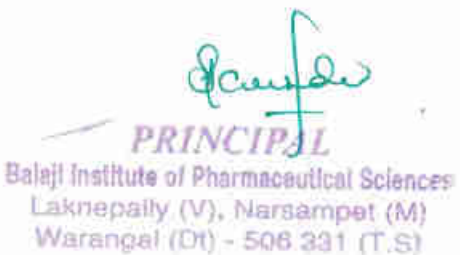
This effected babies are born in a collodion memberane a "shiny waxy" outer layer to the skin. This shed 10-14 days after birth. The main symptom of the disease is extensive scaling of the skin caused by Hyperkeratosis.[1]

Keratinization is a complex process in which the live nucleated basal cells of the epidermis are transformed in to dead, anucleated horny cells that form the outermost layer of epidermis.[3] Keratin, the fiberous protein forms of the cytoskeletal component of the horny cells, sometimes if there is a defect in gene or gene mutation takes place then there may be disorders of keratinization.[4]

The most impartant clinical data concerning collodion baby is characterized by dry skin, scaling, generalized erythoderma and hyperkeratosis, reminiscent of fish scales.[5] At birth the thick stratum corneum results in constructive deformation, with severe ectropian of eye lids and eclabium of lips.[6]

Collodion babies may encounter dehydration, electrolyte imbalance, temperature malfunction and increasing sepsis risk due to severe skin damage. Therefore morbidity and mortality rates are high in these types of cases. So, in order to avoid sepsis these newborns should be monitored carefully in intensive care unit (ICU) and appropriate support treatment must be given.[7]

CASE REPORT
A preterm (32 weeks) male child was born on 18th July 2016 at Khammam government hospital weighing 2.200 grams, length 48cm, head circumference 33.5cm. The mother age is 22 years and age at marriage is 19 years. No history of consanguinity marriage of parents. The baby was referred to Mahatma Gandhi Memorial Hospital, Warangal, Telangana State. The baby was present with complaints of parchment paper like skin all over the body, ectropian of upper eyelids, and eversion of lips (eclabian). The limbs movements were restricted due to taught skin.



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Study of Adverse Events following Pentavalent Vaccination in a Tertiary Care Hospital

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Abstsract: *Vaccines are given to the healthy individuals prophylactically, in order to prevent some serious diseases such as measles, diphtheria, polio, meningitis, etc., immunization is important for children from birth to 5 years of age. As vaccines are having some serious adverse events, there is a need of Pharmacovigilance program for immunization. To analyze all suspected adverse events in children reported for pentavalent vaccination and to detect increases in known adverse events. A 3 months prospective observational study was conducted on adverse events following pentavalent vaccine in Mahatma Gandhi Memorial Hospital, Warangal. 200 children were enrolled in our study and adverse events were reported through telephone enquiry after 48 hours of administration. Out of 200 children reported for pentavalent vaccination, 120 children are complained about adverse events following pentavalent vaccination. The most commonly observed adverse events are fever (36.8%), following swelling at site of injection (28.1%). No reactions are seen in 70 (35%) children. Total reactions observed among study population are 263.Most of the adverse events occurred were mild and non serious. The occurred adverse events may be due to pertusis component which is present in pentavalent vaccine.*

Keywords*: Immunization, Pentavalent Vaccine, Adverse events .*

I. Introduction

Pentavalent vaccine is a combination vaccine which protects against five killer diseases those are Diphtheria, Pertusis, Tetanus, Hepatitis B and Haemophilus influenza type B [1]. The global Alliance for Vaccines and Immunizations (GAVI) and WHO recommended the use of this pentavalent vaccine in developing countries to replace the DPT vaccine. Before being introduced in India, the pentavalent vaccine had been used in Bhutan, Sri Lanka and Pakisthan [2]. Vaccination is an essential component of the public health programs. Immunization constitutes one of the most effective modern public health measures for preventing serious diseases. Vaccines are given prophylactically to healthy individuals, often young children. So, expectation to the vaccine safety is much higher than the drugs. Immunization of the paediatric population prevents and protects the population from serious diseases; however administration of vaccines to healthy children also involves risks of adverse events. More than 3 million children in developing countries die each year from vaccine preventable diseases such as measles, diphtheria and polio [4]. Advantages to combining childhood vaccines include reducing the number of visits, injections and patient discomfort, increasing compliance, and optimizing prevention. The World Health Organization recommends that routine infant immunization programs include a pentavalent vaccine [5]. The immunogenicity and safety of pentavalent vaccine was assessed in four clinical trials and a large post marketing surveillance study. Pentavalent vaccination was found to be highly immunogenic in each of the primary vaccination studies and was also shown to be suitable as a booster with the advantage that it could be given concomitantly with measles vaccine [6]. Hemophilus influenza type B (Hib) is a leading cause of bacterial meningitis among infants and young children and the second leading cause of bacterial pneumonia deaths among children under 5 years.

The India Ministry of Health and Family Welfare introduced pentavalent DTP vaccines in the UIP with the aim of reducing the burden of Hib-related morbidity and mortality in April 2008. Subsequently liquid pentavalent vaccine (LPV) was launched in the Kerala and Tamil Nadu on a pilot basis in December 2011 [7,8]. Vaccines are given prophylactically to healthy individuals, often young children. Vaccines like other pharmaceutical product are not entirely risk free; while most side effects are mild and non-serious. So, the vaccine safety is much higher than the drugs [3]. As Pharmacovigilance on vaccines in India is still in cradle stage and only few Indian studies on adverse events on vaccines were done. We wished to collect data on adverse event following pentavalent in paediatric population [3]. The main aim of this study is to analyze all suspected adverse events in children reported for pentavalent vaccination and to detect increases in known adverse events.

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Therapeutic Drug Monitoring of 5-Fluorouracil In Teritiary Care Teaching Hospital

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Abstract: *5-Fluorouracil (5-FU) is the basis of most combination chemotherapies for gastrointestinal tumours and breast cancers. It is generally well tolerated, but side-effects might require dose-adjustment. As adverse events are not specific to the 5-FU component of the chemotherapy-combination, i.e. neutropenia, diarrhoea or cardiotoxicity, the knowledge of 5-FU plasma levels might help to attribute these side effects to the 5-FU compound. The optimal concentration-range (AUC, area under the curve) has been described to be within 20-25mgh/l. The aim of this study was to determine the concentrations of 5-FU in plasma for routine therapeutic drug monitoring. High performance liquid chromatography (HPLC) had been used for the determination of 5-FU in human plasma.*

Methods: *36 samples were collected and 28 samples from breast cancer patients and 8 samples from gastrointestinal patients. treated with 5-FU infusional regimes, Venous blood(3ml) was collected into heparinised tubes. The tubes was immediately centrifuged at 3000rpm for 10min at 4 ℃. Resulting plasma supernatants was transferred to individual 3 ml polypropylene tubes and was frozen in freeze. The frozen tubes was transferred to the laboratory once a day at -20 ℃. 5- fluorouracil plasma concentrations was analysed by high performance liquid chromatography using UV detection(wavelength=262nm).Methods which had been used for determination of 5-FU injection were HPLC. The method developed in this study is simple, rapid, economical, and accurate, and it is applied for rapid determination of 5-FU in injection and human plasma.*

Results: *Of the total, 14 were male patients (38.88%) and 22 (61.11%) were female patients. The mean age of male population was 56.13±10.20 years, and the mean age of female population was 53.43±12.01years and Among 36 patients,7 patients were diagnosed with breast cancer left,11 patients with breast cancer right and 18 patients were diagnosed with gastrointestinal cancer. The steady state plasma drug concentrations were measured and differentiated based on their weights. Patients with the weight between50-60 kgs the steady state plasma concentration measured were 161.9±9.828µg/dl and Patients with the weight between 61-80 kg the steady state concentration measured were109.77±8.485µg/dl.*

Conclusion*: Among 36 patients , those patients with low body weight (50-60 kgs) were found with elevated plasma drug concentration and those patients with increased body weight(61-70kgs) were found with reduced steady state concentration. Hence we conclude that dosing should be done based upon body weight.*

Keywords: *5-fluorouracil,Therapeutic Drug Monitoring, High Performance Liquid Chromatography.*

I. Introduction

Therapeutic drug monitoring (TDM) has contributed substantially in assisting patient management and has become an important tool in clinical medicine (1). Measurement of patient's serum or plasma taken at appropriate time after drug administration (2). Despite being one of the oldest anticancer drugs 5-FU is considered not only as the standard drug for the treatment of breast, head and neck cancers, gastrointestinal cancers and also used for colorectal cancers (3). The fluorouracil (5-FU) is an anticancer agent used in the treatment of solid tumours. This drug, an analogue of the natural pyramidine uracil, must be converted to the nucleotide to exert its effect. The drug is rapidly metabolized after administration, giving cytotoxic fluronucleotides with well-known antineoplastic properties (4). The mechanism of 5-FU cytotoxicity is complex because the drug is activated through different pathways leading to atleast three cytotoxic compounds: fluorodeoxyuridine monophosphate, which inhibits thymidylate synthase and subsequent DNA synthesis; fluorouridine triphosphate, which is directly incorporation into DNA(5). 5-FU injection is widely used and many products with the specification of 0.25gms/10ml. Although 5-FU is an active medicine against many cancers, it has some side effects. Some of the most common and important side effects include soreness of the mouth, difficulty in swallowing, diarrhoea, stomach pain, low white blood counts and anaemia (6).It has proven that if there were large amounts of 5-FU in human plasma after injecting for certain hours, 5-FU would not metabolise completely and would endanger health (7). 5-FU is known to have a narrow therapeutic index: High levels can lead to severe side effects, whilst low levels will miss a therapeutic effect. Side effects of 5-FU which

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Prescribing Patterns of Drugs in Pediatrics Outpatient Department in Tertiary Care Hospital

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Abstract: *Prescribing pattern studies are powerful exploratory tools to ascertain the role of drugs in society. In a tertiary care centre, prescribing is expected to be judicious, appropriate, safe, effective and economical. The ultimate goal is to achieve rational and effective medical care, particularly in the economically developing countries. An observational and prospective study was carried out for three months from June to August 2016. The study site was Paediatric out Patient Departments (OPD) of the Mahatma Gandhi Memorial Hospital, Warangal, Telangana. A total number of 18000 prescriptions were selected. The information such as age, sex and body weight was recorded. A total of 18000 prescriptions were analysed. The male patients were 9744 (54.13%) and female patients were 8256 (45.86%). Majority of the paediatric patients were suffering from respiratory tract infection followed by Diarrhea, Viral pyrexia, Epilepsy and Folliculitis. The number of drugs per counter was found to be with a minimum of 2 and maximum of 5 drugs. A total of 37468 drugs were prescribed and most frequently prescribed drug class was Paracetamol followed by Chlorphenaramine maleate, Oral rehydration salt, Amoxicillin, Sporolac, Zinc, Sodium valproate of total prescription.*

Keywords: *Pediatrics, respiratory tract infection, Paracetamol*

I. Introduction

Prescribing pattern studies are powerful exploratory tools to ascertain the role of drugs in society. In a tertiary care centre, prescribing is expected to be judicious, appropriate, safe, effective and economical [1]. The ultimate goal is to achieve rational and effective medical care, particularly in the economically developing countries. This study is planned to analyze the prescribing pattern in pediatric outpatients attending at a tertiary care hospital. Paediatrics is the branch of medicine dealing with the development, diseases and disorders of children below 12 years. Medical treatment of a paediatric patient is based upon provisional and final diagnosis and optimum course of therapy, which involves a medication regimen. [2] Infants and children are especially vulnerable to contact illnesses and to the harmful effect of drugs due to differences in pharmacodynamics and pharmacokinetics. [3] Drug use in pediatrics is not extensively researched and the range of licensed drug in appropriate dosage form is limited when compared to adult medicine. [4] Drug prescribing studies in pediatric patients have been limited when compared to Epidemiological evaluation of medicine use in elderly. The need for the safe and effective drugs for use in sick neonates, infants, children and adolescents requires the establishment of thoughtful drug therapy strategies.[5] The study of prescribing patterns seeks to monitor, evaluate and if necessary suggest modifications in prescribing practices to make medical care rational and effective.[6] The assessment of drug utilization is important for clinical, educational and economical reasons and study focuses on effective medical treatment of pediatric patients with accurate diagnosis and selecting the proper drug regimens, avoiding unnecessary use of antibiotics and minimizes the prescription errors.

II. Materials And Methods

An observational and prospective study was carried out for six months from June to August 2016. The study site was Paediatric out Patient Departments (OPD) of the Mahatma Gandhi Memorial Hospital, Warangal, Telangana. A total number of 18000 prescriptions were selected. The information such as age, sex and body weight was recorded. The drug data such as name of the drug, dosage form, dosing frequency, duration, route of administration and diagnosis data were also noted. The data obtained & the patient related parameters were computed using Graphpad Prism version 5. The results were presented as percentage and mean ± Standard deviation (SD).

III. Results

A total of 18000 prescriptions were analysed. The male patients were 9744 (54.13%) and female patients were 8256 (45.86%).The distributions and proportions are as shown in Figure 1. Majority of the paediatric patients were suffering from respiratory tract infection followed by Diarrhea, Viral pyrexia, Epilepsy

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Prevalence Of Types Of Anemia In Pediatric Population – An Observational Study

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Abstract: *Anemia is a very serious health problem in India and most common nutritional problems in many parts of the world. We estimated the different types of prevalence of anemia in children, an observational study. We collected data from 140 pediatric patients. The study had been conducted for six months and the required data was collected. We included 140 pediatric patients who are anemic irrespective of their gender and age. We documented the prevalence of different types of anemia, in which the iron deficiency is highly prevalent i.e., 37.85%.Our data shows that the mean age of the patients was 6.6±4.1 years (range 1-15 years). It was found that 53 (37.8%) patients have iron deficiency anemia which is highly prevalent, 15 (10.7%) patients have sickle cell anemia, 26 (18.5%) patients have severe anemia and hemolytic anemia, 18 (12.8%) patients have ß-Thalassemia minor and ß-Thalassemia major, 10 (7.14%) patients have sickle cell thalassemia, 8 (5.7%) patients have thrombocytopenia, 6 (4.2%) patients have nutritional anemia, 3 (2.1%) patients have vitamin B12 deficiency and 1 (0.71%) patients have hemophilia-VIII factor. The present investigation might help the clinicians to initiate good treatment to reach the treatment goals. Thus, it is recommended that children should be monitored regularly to avoid complications and mortality.*

Key Words: *Anemia, Pediatrics, Iron deficiency anemia*

I. Introduction

Anemia is a very serious health problem in India and most common nutritional problems in many parts of the world [1]. In this the iron deficiency anemia and nutritional anemia is highly prevalent and most common in children and pregnant women globally. This isaffecting the cognitive development, physical activity, immunity profile and growth mainly in children. Nutrition is the main underlying cause in recent years[2]. Children caretakers are also main reasons for these consequences due to poor knowledge, economical status, sanitation and health. Along with nutritional and iron deficiency anemia the prevalence of thalassemia and hemolytic anemia are high and most common in Telangana district. Similarly infections like malaria, hook worm also plays an important role in prevalence of anemia in children. Consanguinity is one of the etiologies for any type of anemia, but mainly for thalassemia [3].

Most possible causes of nutritional anemia and folate deficiency is due to neural tube defects, pregnancy adverse effects, cardiac problems, mental health. Vitamin B12 deficiency is caused by heart problems and neuropathy. Iron deficiency anemia is common among young children due to their diet which is less in iron. Other causes of anemia are gastric bleeding, chronic illness, decreased erythropoiesis, impaired bone health and unusual blood loss[4]. Obesity is also one of the common factors in children and elder people. Obese people are at high risk of getting iron deficiency anemia because they take unbalanced meals i.e., food rich in carbohydrates and fat. The prevalence of iron deficiency anemia and obesity is high in people who take low-cost fast foods which are less in nutrients and more in sugars, preservatives and fats[5].

The problem of getting anemia is more in less developed countries than the developed countries due to potential burden on people like their income, socio-economic status, less knowledge. Most female pediatric population will be more prone to get anemia compared to the males. Recent study on school children of rural Hyderabad has been concluded that children with better hemoglobin levels are more physically fit compared to the children with low hemoglobin levels. Nutritional status plays utmost important role in child development[6]. The main aim of our study is to find out the prevalence of anemia in pediatric population of MGM Hospital, Warangal. This study is an observational study, in which the data is collected from patient's case profiles and by interacting with their caretakers.

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4-Hydroxy-3-[(3-hydroxy-2-oxo-*1H*-indol-3-yl)acetyl)-1-methyl-3,4-dihydroquinoline-2-ones as anti-inflammatory and antioxidant agents

Sandeep Thaida, Arunadevi Parlapalli, J. Ravi and Sarangapani Manda

ABSTRACT

4-Hydroxy- 1-methyl-3-[(2-oxo-1,2-dihydro- 3H-Indol-3-ylidine) acetyl-3,4-dihydroquinolin-2(1H)-ones were characterized by means of Chromatographic and IR, ^{1}H NMR and Mass spectral analysis. These compounds were evaluated for anti-inflammatory activity. Compounds ***IVC (R=5-Br), IVD (R=5-Cl), IVE (R=7-Br) and IVG*** *(**R_1=7-Cl**) were found to be the more active compounds towards carrageen induced rat paw edema model, and antioxidant activity by DPPH method. Compounds* ***IVA (5-H), IVB (5-CH_3), IVC (5-Br) and IVD (5-Cl)*** *were found to be the less potent antioxidant compounds when compared to the standard drug ascorbic acid.*

Keywords: Isatin, quinoline, synthesis, anti-inflammatory, antioxidant.

INTRODUCTION

Indole 2, 3-dione (Isatin) has occupied a unique position in medicinal chemistry and is also an interesting moiety because of its use in many pharmaceutical, biological and analytical applications . Isatin has been known for about 150 years to exhibit biological activity in mammals. The synthetic versatility of isatin analogs at C-2, C-3 and *N* position has lead to a wide variety of pharmacological response including anti-bacterial ,antifungal , antiviral , antitubercular , anticancer , anti-inflammatory, anticonvulsant, anxiolytics and antidepressants[1-35]. Isatin and its analogs act on a vast number of biological targets including proteases, caspases, kinases, reverse transcriptase, extracellular signal regulated protein kinase. The 2-oxoindole derivatives SU-5416(semaxanib) and SU- 11248 (sunitinib) reportedly possess tyrosine kinase inhibitory and antiangiogenic properties. Based on the versatility of the isatin moiety and its importance in the development of antimicrobials, it was thought worthwhile to design and synthesize some new isatin analogs to be screened for potential antibacterial and antifungal activities.

In view of the biological prominence of the Isatin derivatives as well as Quinolone derivatives [36-42], it was planned to synthesize some new4-Hydroxy -1-methyl-3-[(2-oxo-1,2 -dihydro-3H-indol-3-ylidine)acetyl-3,4-dihydroquinolin-2(1H)-oneas such reports were not available in the literature and were screened for anti-inflammatory, antioxidant activity. The compounds have been synthesized as per the scheme presented. Seven new compounds were synthesized. For this purpose seven different isatins were synthesized. The isatins were utilized for condensing with 3-Acetyl-4-hydroxy-1-methylquinolin-2(1H)-one as depicted in scheme.

EXPERIMENTAL SECTION

Synthesis of Indole-2, 3-diones (Isatins) through Sandmeyer method

Indole-2, 3-diones (I)

In a 5 L R.B. Flask were placed 90g (0.54mol) of chloral hydrate and 1200 ml of water. To this solution, were then added crystallized sodium sulphate (1300 g) followed by a solution of appropriate aniline (0.5mol) in 300 ml of

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A Prospective Observational Study of Zinc As Adjunct Therapy In Pediatric Population With Severe Pneumonia

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Abstract: *Worldwide, Pneumonia is the leading infectious cause of death in children, accounting for 15% of all deaths of children under 5 years old. Pneumonia killed an estimated 9, 35,000 children under the age of five in 2013 and can be prevented by immunization, adequate nutrition and by addressing environmental factors. The aim of study was to determine the role of Zinc as an adjunct therapy in paediatrics with severe pneumonia. This study is a randomized, double blinded, placebo-controlled clinical trial conducted between March 2014 to September 2014 at Department of Paediatrics. Children aged 1month-6years who were diagnosed with severe pneumonia are randomly assigned with zinc and placebo supplementation in 1:1 ratio. 20mg of zinc syrup/day was received by subjects along with antimicrobial therapy. All clinical signs and symptoms of severe pneumonia were assessed and recorded on standard forms, entered into computer, and edited with the use of GRAPH PAD PRISM, version 6. The time until cessation of severe pneumonia and duration of hospitalization was slightly shorter among the zinc recipients. We explored whether the effect of zinc was different in subgroups on the basis of duration of fever, presence of wheezing, creptations, and endpoint consolidation on chest x-ray. This trial yielded a moderate but not statistically significant efficacy estimate for zinc in the resolution of severe pneumonia in hospitalized 1month-6year old children with the standard antibiotic therapy. However, large trials are required to clarify the role of zinc in treatment of severe pneumonia*

Keywords: *Adjunct therapy, Pneumonia, Zinc*

I. Introduction

Death from pneumonia is the leading single contributor to under-5 mortality globally, which presents a major challenge for the achievement of the fourth millennium development goal to reduce under-5 mortality two-thirds by 2015[1]. In southern Asia, macronutrient malnutrition and micronutrient deficiencies, especially deficiencies of zinc, iron and vitamin A are common in young children [2]. Pneumonia management, which relies on the early diagnosis and prompt antibiotic therapy, has been effective, reducing pneumonia-related deaths by 47%, but may be diminished by poor nutritional status [3-5]. Under nutrition is known to be associated with greater severity of pneumonia and of the micronutrients, zinc plays a crucial role in immunomodulation [6-9].

Zinc deficiency, a likely risk factor of pneumonia is a global problem affecting populations of low economic status [10]. It is estimated that zinc deficiency in association with diarrhoea, pneumonia and malaria contributed to 44% of deaths and 3.8% of loss disability adjusted life years among children aged 6-59 months in Africa, Latin America and Asia. Two distinctive roles of zinc in modulating pneumonia burden exist: firstly as a preventive element when administered prior to pneumonia disease; secondly, zinc may change the course of pre-existing pneumonia when added as an adjunct to conventional antibiotic treatment potentially to reduce the severity and duration of pneumonia in sufferers [11].

Proposed model of how zinc may influence T-cell immunity during severe pneumonia to alleviate lung damage: (Figure-1)

Case Report

Falciparum Malaria with Multiple Neurological Complications – A Case Report

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ABSTRACT

Malaria remains the common cause of childhood infections. A 2 year-old female child from a malaria endemic area was admitted to our hospital with high grade fever for 3 days, multiple episodes of generalized tonic clonic seizures (GTCS) for 1 day and altered sensorium on day 4. We report a case of falciparum malaria in a 2 year old girl presenting with seizures and other neurological deficits like hemiplegic, aphasia and cortical blindness.

Keywords:

Falciparum malaria, neurological complications, plasmodium falciparum (PF) hemiplegia

INTRODUCTION

Malaria is one of the most common infectious childhood illness, affecting more than 300-500 million reported children globally every year, of which more than one million cases result in death. Malaria parasites infect about 650 million people worldwide and P. falciparum alone leads to almost one million deaths per year making it the most virulent parasite causing malaria. It is pertinent to develop efficient means of controlling plasmodium falciparum (PF) in areas to which malaria infections are highly endemic. The most severe complications of the disease are primarily due to infection with plasmodium falciparum (PF).

Most malarial deaths occur among infants and young children.[1] Four species of plasmodium, P. vivax, P. falciparum, P. ovale and P. malariae cause nearly all the malarial infections in humans. Of the four species, falciparum is the most dangerous, since it causes more severe manifestations which culminate in multi system failure. Several neurological complications are associated with complicated and severe falciparum malaria, which is rarer than other forms of malaria.[2] The common central nervous complications of acute malaria are febrile convulsions and cerebral malaria.

We report a case of falciparum malaria in a 2 year old girl presenting with seizures and other neurological deficits like hemiplegic, aphasia and cortical blindness.

CASE REPORT

A 2 year-old female child from a malaria endemic area was admitted to our hospital with high grade fever for 3 days, multiple episodes of generalized tonic clonic seizures (GTCS) for 1 day and altered sensorium on day 4. She was born of non-consanguineous marriage with normal birth history, normal development and was fully immunized. There was no past history of measles, febrile

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NEONATAL PYOTHORAX WITH ANTERIOR THORACIC MENINGOMYELOCELE

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ABSTRACT
Empyema, a serious complication of pneumonia, fortunately remains a less common cause of respiratory distress in neonates. Only few cases have been described in the world literature. We describe a case of empyema in a 12 day female child.

KEY WORDS: Empyema; neonate.

INTRODUCTION
Pyothorax is defined as pyogenic infection of the pleural cavity with purulent effusion. Majority of children who are affected are under two years. Though excellent reviews and studies are available regarding childhood empyema,[1] yet reports are scanty as far as neonatal pyothorax is concerned. We are presenting a case of pyothorax that occurred in our Sick Neonatal Care Unit (SCNU).

CASE REPORT
A full term female breastfed second in birth order child weighing 3.5 kg, born by elective caesarean section was admitted in the SNCU on 12th day of life with complaints of breathlessness since 9 days, refusal to feed and decreased activity two days prior to admission. Breathlessness started on 3rd day of life which was insidious in onset progressed slowly over period of 6 days. No antenatal and perinatal risk factors were noted. On clinical examination baby was lethargic, diaphoretic and dyspnoeic with respiratory rate 88/min along with moderate to severe subcostal and intercostal retractions and oxygen saturation at room air was 60%, that improved to 92 % with 8 L/min of oxygen.

Examination of respiratory system revealed dull note on percussion all over the right side of chest with decreased air entry. A chest radiograph revealed right pleural effusion with collapse consolidation of right lung and mild degree of scoliosis of dorsal spine due to hemivertebra(D3,D6) & spina bifida at C6 ,C7(fig 1). Intravenous fluids, oxygen and antibiotics were instituted. CT chest with contrast revealed massive right pleural effusion with partial collapse of right lung, minimal consolidation of left lower lobe and large anterior thoracic meningocele (fig 2). MRI chest showed a large anterior thoracic meningomyelocele with no evidence of rupture. Multiple butterfly and hemivertebra in dorsal spine along with right lower lobe collapse and moderate fluid collection in right pleural cavity.

Ultrasound guided pleural tap revealed thick pus which showed loaded WBC, 80% were neutrophils with culture being sterile. Pleural fluid triglyceride and cholesterol were not elevated. Thoracostomy was done and pediatric size 10 Fr portex radio opaque thoracic canula was inserted in 6th intercostal space (fig 3). About 120 mL of pus was drained in the following 72 hrs. Blood culture was sterile. CSF analysis was within normal limits and there was no evidence of hydrocephalus on cranial ultrasound.

Child was treated with antibiotics for three weeks. Child responded well to the treatment and chest tube removed after 5 days. On subsequent follow up, the child was found to have a good expanding lung (fig 4).

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Epidemiology and Vaticination of Breast Cancer in Young Women

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HUMAN

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Keywords: Breast cancer, Epidemiology, Vaticination, Young Age, and Women

ABSTRACT

The risk of developing breast cancer increases with age. But in India, the average age at which breast cancer is detected is about 10 years lesser compared to other developed countries. Almost 6.6% of cases diagnosed in young women with breast cancer are below the age of 40. Review of modifiable risk factors shows that long-term use of oral contraceptives, low body mass index (BMI) and high animal fat diet consumption are associated with increased risk of premenopausal breast cancer. Decreased physical activity and obesity increase risks of breast cancer in postmenopausal women, Non-modifiable risk factors such as family history and genetic mutations do account for increased risks of breast cancer in premenopausal women. Breast cancer in young women is associated with adverse pathological factors, including high grade tumors, hormone receptor negativity, and HER2 over expression. Moreover, younger women often tend to present with breast cancer at a later stage than their older counterparts, which further explains worse outcome. Despite these factors, age per se is still being advocated as an independent role player in the prognosis. This entails more aggressive treatment modalities and the need for closer monitoring and follow-up.

Case Report

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A CASE OF YUNIS-VARON SYNDROME

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ABSTRACT

A rare autosomal recessive disorder, Yunis Varon syndrome is reported. A male child had microcephaly, large fontanella with wide sutures, protruding eyes, absent /sparse scalp hair, eyebrows and eye lashes, bilateral absent great toes, and rudimentary thumbs (no phalanges) hypoplasia of bilateral first metatarsal and metacarpals, absent distal phalanx of bilateral toes and fingers. Additional features are micropenis, single palmar crease, with hypo densities involving grey and white matter of bilateral temporo occipital lobes and right partial lobe, and congenital heart disease Atrial septal defect (ostium secundum).

KEY WORDS: Microcephaly, absent great toes and rudimentary thumbs, atrial septal defect, Yunis Varon Syndrome.

INTRODUCTION

Yunis Varon Syndrome is an extremely rare autosomal recessive disorder. It was first reported by Yunis and Varon in 1980. The striking characteristics are prenatal and postnatal growth deficiency.[1] Till now 22 cases were reported in the literature.[2] It appears to be a generalized disorder effecting growth and development of the skeletal, ectodermal, central nervous and cardiovascular systems.[3] We report a male child with phenotypic features of Yunis Varon Syndrome with additional findings of micropenis and atrial septal defect.

CASE REPORT

A 2 days old male child, product of consanguineous marriage, born to a 19 years old primi para came to the hospital with history of shortness of breath. The antenatal history was uneventful except history of fever with cough for 3 days in the last month of pregnancy. There is no history of polyhydramnias, rash or unknown drug exposure. The child was delivered by Cesarean section and no resuscitation done. No similar complaints in the family or near relatives.

At admission, the child was dull and respiratory distress was present with respiratory rate of 78/min. There were sub costal retractions, intercostals retractions and nasal flaring. The heart rate was 128/min; SpO2 was 95% with oxygen supplementation. Child developed neonatal Jaundice on 5th day and was treated accordingly. On examination the birth weight was 1.9 kgs (< 5th percentiles), and gestational age was 37 weeks (full term small for gestation) with new Ballards score. The length of the child was 46 cms (5th percentiles) and the head circumference was 30 cms (< 5th percentiles). The child had microcephaly, enlarged anterior fontanella (4.5cm x 4.5cm), posterior fontanella (1cm x 1cm), and widely placed sutural lines. The eyes were protruding, absent supra orbital ridges, spares hair on the scalp and eye lashes, absent eyebrows, low set and dysplastic ears, thin lips, short philtrum, labiogingival retractions, cupid bow like upper lip, high arched palate and micrognathia were noted [Fig: 1].

There were rudimentary thumbs and absent bilateral great toes. The fingers and toes are short and tapering, absent nails in both the fingers and toes were noted. There was Single palmar crease bilaterally. Stretched penile length measured from penile base to pubic symphisis was 1.7 cms, with both the testis in scrotum. Radiologically, the child showed hypoplasia of the medial end of right clavicle, periosteal reactions at shaft of femur, bilaterally (with left more than right). There was hypoplasia of middle phalanx of index finger and the 1st metacarpal bone. In the foot there was absent great toe with hypoplasia of 1st metatarsal bones bilaterally. There was bilateral absence of distal phalanx of all the fingers and toes [Fig: 2].

CT scan of the head and brain showed hypo densities involving grey and white matter of bilateral temporo occipital lobes and right parietal lob. The 2D ECHO showed ostium secundum Atrial septal defect with right

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Research Paper

Development and Validation of a Spectrophotometric Method for Determination of Zaltoprofen in Bulk Drug and Pharmaceutical Formulation

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ABSTRACT: A simple, sensitive and accurate spectrophotometric method has been developed for the determination of Zaltoprofen in bulk and pharmaceutical formulation. The λ max of the Zaltoprofen was found to be 335nm in ACN: 0.1N HCL [PH 1.2]. The method shows high sensitivity with linearity 10 to 80µg/ml (regression equation: Y=0.013X + 0.002; r^2 = 0.999). The apparent molar absorptivity was found to be $0.369x10^4$lmol−1 cm−1 in ACN: 0.1N HCL (PH 1.2). This method was tested and validated for various parameters according to ICH guidelines and USP. The Detection limit and quantitation limit were found to be 0.150 µg ml−1 and 0.158 µg ml−1 in ACN: 0.1 HCL (pH 1.2) respectively. The results demonstrated that the procedure is accurate, precise and reproducible (relative standard deviation < 1%), while being simple, cheap and less time consuming and can be suitably applied for the estimation of Zaltoprofen in bulk and pharmaceutical formulation.

Keywords: Zaltoprofen, ACN: 0.1 N HCL, Spectrophotometry.

I. INTRODUCTION

Zaltoprofen (ZLT), 2-(10, 11dihydro-10-oxodibenzo [b,f]thiepin-2-yl) propionic acid is a potent non-steroidal anti-inflammatory drugs (NSAIDs).[1-2] It has been used clinically for treatment of post-operative pain and low back pain for more than ten years, and has recently been reported to cause potent inhibition ofcyclooxygenase-2 with fewer side effects on the gastro-intestinal tract and to induce apoptosis in a variety of cell lines.[3-4] Zaltoprofen is a unique compound that also has anti-bradykinin activity. Its analgesic effects may be a result of inhibition of bradykinin B2 receptor-mediated bradykinin responses not only of cyclooxygenases but also of bradykinin-induced 12-lipoxygenase inhibitors[5-6]. Literature survey reveals that a simple, rapid, reproducible, selective and sensitive HPLC method was developed and validated for the determination of zaltoprofen from human plasma [7], A simple and rapid RP-HPLC analysis method for direct determination of (+) and (-) zaltoprofen glucuronide in rat hepatic microsomes and from pharmaceutical bulk dosage forms were developed and validated[8-9]. A Lc-ms/ms method for the determination of zaltoprofen in human plasma.[10-11] The pharmacokinetic parameters of zalatoprofen in rat plasma were predicted using a validated column-switching HPLC method.[12]So far to our present knowledge there is no economical method for estimation of zaltoprofen by simple, sensitive and accurate spectrophotometric method in bulk and pharmaceutical formulation. It is felt necessary to develop a simple, sensitive and accurate spectrophotometric method for zaltoprofen. The method was validated as per ICH guidelines.

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ANTI MICROBIAL EVALUATION OF NEW OXADIAZOLE DERIVATIVES

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ABSTRACT

5-(2-(2-(arylideneamino) oxazol-5-ylamino) benzoxazol-5-yl)-3-((dialkylamino) methyl)-1, 3, 4-oxadiazol-2(3H)-thiones (XI) derivatives were evaluated for antimicrobial activity by using disc fusion method.The synthesized derivatives were evaluated for antibacterial activity and antifungal by using Ampicillin sodium and Clotrimoxazole as a standards. Among all compound XIa, XIb and XIh are more effective against bacteria. Among the series compound XIb is exhibited more inhibition against *A.niger* and *C.albicans*.

Key words: Bezoxazole, Oxadiazole, antimicrobial, antifungal, antibacterial.

INTRODUCTION

It is interesting to note from the literature that the various derivatives with benzoxazole moiety have got various biological activities like anti-inflammatory[2],antiviral[3],antifungal[4], antibacterial[5], anticancer[6], anti-tubercular[7] and anticonvulsant[8] .There are several drugs which contain benzoxazole moiety Like calcimycin, is a carboxylic polyether antibiotic from a strain of *Streptomyces chartreusis* (NRRL3882). It was found to be very active against Gram-positive bacteria including some *Bacillus* and *Micrococcus* strains.[9, 10, 11]. Two calcimycin analogues, routiennocin and cezomycin which are 3-hydroxy- 11, 15-desmethyl and 3-demetylamino derivatives of it respectively, were found to be highly active against *Bacillus cereus*, *Bacillus negaterium*,*Micrococcus luteus* and *Streptomyces rimosus* [12,13].Therefore,it was thought worthwhile to synthesize 5-(2-(2-Aminoxazol-5-ylamino)

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SYNTHESIS AND ANTIMICROBIAL EVALUATION OF 2-(DIALKYLAMINO)-N-(5-(5-(ALKYLTHIO)-1, 3,4-OXADIAZOL-2-YL)BENZOXAZOL-2-YL) ACETAMIDES

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ABSTRACT

A series of 2-(dialkylamino)-n-(5-(5-(alkylthio)-1, 3, 4-oxadiazol-2-yl) benzoxazol-2-yl) acetamides were synthesized by taking 4-carbomethoxyphenol a starting material.The final resultant compounds were evaluated for antimicrobial activity by using disc fusion method. All E.coli and S.typhi ,B.subtilis and S.aureaus and A.niger and C.albicans were adopted as Gram negative, Gram positive and fungal organisms. Among all the compounds of 2-(dialkylamino)-N-(5-(5-(alkylthio)-1, 3, 4-oxadiazol-2-yl) benzoxazol-2-yl) acetamides (XV),compound XVd was active against both Gram positive B.subtilis and S.aureaus and Gram negative bacteria E.coli and S.typhi. Compound XVd, XVk and XVp were active against the organisms A.niger and C.albicans.

KEY WORDS: Oxadiazole, Benzoxazole, antibacterial, antifungal.

INTRODUCTION

Oxadiazole, a heterocyclic nucleus has attracted a wide attention of the chemist in search for the new therapeutic molecules. Out of its four possible isomers, 1, 3, 4-oxadiazole is widely exploited for various applications. A numbers of therapeutic agents such as HIV-integraseinhibitor raltagravir, a nitrofuran antibacterial furamizole, a potent PDF inhibitor BB-83698,antihypertensive agents tiodazosin and nesapidil are based on 1,3,4-oxadiazole moiety. The1,3,4-oxadiazole undergoes number of reactions including electrophillic substitution,nucleophilic substitution, thermal and photochemical.The present study is an attempt to synthesise new oxadiazoles coupled with benzoxazoles microbial evaluation of

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Research Article

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Formulation and Evaluation of Floating Matrix Tablets of Telmisartan

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Abstract

Floating drug delivery systems (FDDS) have a bulk density less than gastric fluids and so remain buoyant in the stomach without affecting the gastric emptying rate for a prolonged period of time. While the system is floating on the gastric contents, the drug is released slowly at the desired rate from the system. After release of drug, the residual system is emptied from the stomach. This results in an increased GRT and a better control of the fluctuations in plasma drug concentration. Telmisartan antagonizes the effect of angiotensin II (vasoconstriction and aldosterone secretion) by blocking the angiotensin II (AT_1 receptor) in vascular smooth muscle and the adrenal gland, producing decreased BP. In the present investigation telmisartan floating tablets were prepared by using different grades of polymers such as HPMC K4M, PEO WSR 303, and XANTHUM GUM. Formulated tablets showed satisfactory results for various Post compression evaluation parameters like: tablet thickness, hardness, weight variation, floating lag time,total floating time, content uniformity and *in vitro* drug release.the Physical parameters & floating characterstics were not good with the PEO AND XANTHUM GUM as CR polymers. HPMC K4M at Drug: Polymer ratio of 1:1.5 respectively showed better Sustained drug release of model drug. Formulation F6 gave better-controlled drug release and floating properties in comparison to the other formulations. The release pattern of the F6 formulations was best fitted to Korsmeyer-Peppas model, Higuchi and ZERO-order model and the release pattern from the formulation was non-Fickian diffusion or anomalous diffusion.

Keywords: Telmisartan. HPMC K4M. floating drug delivery. non-Fickian diffusion

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Formulation and Evaluation of Metaprolol Succinate Floating Matrix Tablets

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Abstract

Floating drug delivery systems (FDDS) have a bulk density less than gastric fluids and so remain buoyant in the stomach without affecting the gastric emptying rate for a prolonged period of time. While the system is floating on the gastric contents, the drug is released slowly at the desired rate from the system. Metoprolol is a $beta_1$-selective (cardioselective) adrenergic receptor blocking agent. This preferential effect is not absolute, however, and at higher plasma concentrations, metoprolol also inhibits beta2-adrenoreceptors, chiefly located in the bronchial and vascular musculature. In this investigation metaprolol succinate floating tablets were prepared by using different grades of HPMC Polymers and xanthum gum by direct compression method. The tablets were evaluated for Precompression and post compression parameters indicating that the formulations made considered being satisfactory. *In vitro* drug release profiles for all formulations were carried out by using 0.1 n Hcl buffer as dissolution medium for about 12 hrs. From the results it was found that the release of drug from f4 formulation (HPMC k 100M as polymer) gave the better release than other formulations.

Keywords: metaprolol succinate, HPMC K100M, floating drug delivery

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1. Introduction

The oral route is considered as the most promising route of drug delivery. Effective oral drug delivery may depend upon the factors such as gastric emptying process, gastrointestinal transit time of dosage form, drug release from the dosage form and site of absorption of drugs. Most of the oral dosage forms possess several physiological limitations such as variable gastrointestinal transit, because of variable gastric emptying leading to non-uniform absorption profiles, incomplete drug release and shorter residence time of the dosage form in the stomach. This leads to incomplete absorption of drugs having absorption window especially in the upper part of the small intestine, as once

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A PROSPECTIVE STUDY ON PREVALENCE, DIALYSIS, AND DRUG UTILIZATION OF CHRONIC RENAL FAILURE PATIENTS

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ABSTRACT

Most researchers have raised awareness of the problem of undiagnosed chronic kidney disease (CKD) and suggest that early identification and treatment will reduce the global burden of patients requiring dialysis. Due to the high cost of dialysis, and transplantation the mortality rate in developing countries increasing day by day. The causes and risk factors for the development of diseases vary worldwide. The objective of study to investigate that, prevalence, dialysis, and drug utilization of chronic renal failure patients. The study period was six months. Data abstraction was approved by the local ethical committee for Ethics & Human Research. Written informed consent was obtained from either patients or his next of kin. Patients were excluded from the study only for age < 18 years, infectious disease, stroke and HIV patients. The result of present study shows that a total of 72 hemodialysis patients were enrolled in the study. The majority of the participants were male i.e., 50 (70%) and 22 (30%) were female. The mean age of both gender were 42.68 years for male and 42.5 years. However, the greater number of patients were in age group was found to be 41-50 years is 26 (52%). Our article suggests that prevalence of CRF in Warangal increasing day by day. Hence awareness program should be conduct in the community to reduce incidence about disease and further, a large multicentre study to perform reduce morbidity and mortality. In this study, the use of antihypertensives in these particular patients does not deviate from the guidelines laid down by the Joint National Committee. Further large scale studies carried out at other tertiary care centres would help to compare, analyze and rationalize prescribing trends in chronic renal failure, giving a broader perspective to these findings.

Keywords: Drugs, Gender, Indicators Hospital, Prescription and Rational.

INTRODUCTION

There are numerous studies reporting the end stage of renal disease, is strongly associated with hypertension and diabetes. With this insufficient recent study in human subjects, the kidney plays a role in body metabolism and it has been reported that kidney produce glucose even after overnight fast; although the magnitude from conversion from kidney to endogenous glucose production remains somewhat contra version [1-5]. Kidney failure not only results in altered amino acid metabolism, but also has remote effects in other organs. The effect on skeletal muscle has been extensively studied.

Now-a-days chronic renal disease (CRF) is a major health problem in India. Although, the precise figures are not well known. Growing number of patients suffering from CRF plays a great demand on the health care resources of the country. Due to the high cost of dialysis, and transplantation the mortality rate in developing countries increasing day by day. The causes and risk factors for the development of CRF vary worldwide. Diabetes, hypertension and renovascular disease are the common causes of CRF in developing countries. Whereas glomerular disease related to infection are common in

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METHOD DEVELOPMENT AND VALIDATION OF DULOXETINE HYDROCHLORIDE IN BULK AND FORMULATION USING UV SPECTROPHOTOMETRIC METHOD

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ABSTRACT
New, simple and cost effective UV-spectrophotometric method was developed for the estimation of Duloxetine hydrochloride in bulk formulations. Duloxetine hydrochloride was estimated at 290 nm in 20% Acetonitrile. Linearity range was found to be 10–50 µg ml^{-1} (regression equation: 0.017 + 0.016; r^2 = 0.999). The apparent molar absorptivity was found to be 5.922×10^{3} mol^{-1} cm^{-1} in 20% Acetonitrile. These methods were tested and validated for various parameters according to ICH guidelines and USP. The quantitation limits were found to be 0.2405 µg ml^{-1} and 0.7289 µg ml^{-1} in 20% Acetonitrile respectively. The results demonstrated that the procedure is accurate, precise and reproducible (relative standard deviation < 2%), while being simple, cheap and less time consuming and can be suitably applied for the estimation of Duloxetine hydrochloride in different dosage forms and dissolution studies.
KEYWORDS: Duloxetine hydrochloride, Acetonitrile Spectrophotometry; Validation

INTRODUCTION

Duloxetine hydrochloride (+)-(s)-N-methyl-3-(1-napthyloxy) -3-(thiophen-2-yl)-propan-1-amine[1] is a potential dual inhibitor of the reuptake of serotonin and nor epinephrine. It has been approved by the US Food and Drug administration for the treatment of major depressive disorder and for the diabetic peripheral neuropathy pain. It belongs to the class narcolepties. Literature survey reveals that only a few methods based on RP-HPLC method were developed and validated for the determination of duloxetine hydrochloride in pharmaceutical dosage forms[2]. Few others are: LC-tandem mass spectrometry method for the determination of duloxetine hydrochloride in human plasma[3], stability indicating RP-HPLC method for the duloxetine hydrochloride[4], metabolism, excretion and pharmacokinetics of duloxetine hydrochloride in healthy human subjects[5], duloxetine hydrochloride in Pharmaceutical formulation by HPLC with UV detection[6], spectrophotometric method in ultraviolet region for the determination of duloxetine hydrochloride in bulk and in pharmaceutical formulations[7], spectrophotometric method for quantification of duloxetine hydrochloride in capsule dosage form[8], liquid chromatography-mass spectrometric (LC/MS) method for the determination of duloxetine hydrochloride in human plasma using flupentixol as the internal standard[9], determination of duloxetine hydrochloride in human plasma by HPLC with column switching and ultraviolet spectroscopy[10], analysis of the duloxetine hydrochloride in human plasma after solid-phase extraction procedure (SPE)[11], HPTLC method for its estimation as bulk drug and its tablet dosage form[12] etc. Duloxetine hydrochloride is being marketed in both domestic and international market. No official method has been found in any of the pharmacopoeia. The present investigation by the author describes a rapid, accurate and precise UV-spectrophotometric method for the determination of the drug from bulk sample and pharmaceutical dosage form. The responses were linear in the concentration range of 20- 120 µg ml^{-1} of drug. The method was validated as per ICH guideline

MATERIALS AND METHODS

Instrument

UV-Visible SpectrophotometerT60 (model), Analytical technologies Limited, connected to the digital system loaded with UVWin software ver.5.1.1 have an wavelength accuracy of ±5.0nm with quartz cells of 1cm path length.

Absorption Maximum

In order to ascertain the wavelength of maximum absorbance (λ_{max}) the solution with particular concentration of drug 10 µg ml^{-1} in 20% acetonitrile was scanned within the wavelength range of 200-400nm against a corresponding reagent blank. The resulting spectrum shows absorption curve with unique characteristic absorption maximum at 290nm. The absorption spectrum of Duloxetine hydrochloride is given in (**Fig-2**)

Preparation of Stock Solutions

10 mg of Duloxetine hydrochloride was accurately weighed and dissolved in 100 ml of 20% acetonitrile in 100 ml volumetric flask to get the concentration about100 µg ml^{-1} stock solution.

Preparation of Calibration curve

From the above stock solution prepare serial dilutions from 1 ml to 5 ml and transfer it to 10ml volumetric flasks. Dilute it with 20% acetonitrile to get the concentrations ranging from 10 µg ml^{-1} to 50 µg ml^{-1} respectively. The absorbances were measured at λ_{max} 290 nm against 20% acetonitrile as a blank. Results are shown in (**Table-1**). The calibration curve was shown in (**Fig-2**)

Method validation

Specificity

Duloxetine hydrochloride solutions (10 µg ml^{-1}) were prepared in both the selected media along with and without common excipients (starch, dextrose, benzalkonium chloride, magnesium stearate) separately. All the solutions were

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Method development and validation of asenapine in bulk by RP-HPLC method

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ABSTRACT

A simple, sensitive, precise and specific reverse phase high performance liquid chromatographic method was developed and validated for the determination of Asenapine in bulk and tablet dosage forms. It was found that the excipient in the tablet dosage forms does not interfere in the quantification of active drug by proposed method. The HPLC separation was carried out by reverse phase chromatography on Shimadzu HPLC, 10-At detector with hypersil ODS C_{18} Column 250 X 4.6 mm (particle size of 5µ) and constant flow pump. Rheodyne injector with 20µl loop with a mobile phase composed pure methanol at flow rate 1.0 ml/min. The detection was monitored at 270nm. The calibration curve for Tamsulosin was linear from 2-10mg/ml. The interday and intraday precision was found to be within limits. The proposed method has adequate sensitivity, reproducibility and specificity for the determination of Asenapine in bulk and its tablet dosage forms. LOD and LOQ for Asenapine were found to be 0.4329 and 0.1311.Accuracy (recoveries: 98.07-101.28%) and reproducibility were found to satisfactory.

Keywords: Asenapine, RP-HPLC Method, Reverse phase chromatography, Methanol, Validation.

INTRODUCTION

Asenapine (Org 5222, ASP) is a novel di benzoxepinopyrrole [Trans - 5 - chloro -2, 3, 3a, 12b – tetra hydro – 2 – methyl - 1H - dibenz (2, 3:6, 7) oxepino - (4, 5 -c) pyrrole (Z) - 2 - butenedioate (1:1)] (Figure 1) with unique receptor pharmacology and is available as a fast-dissolving tablet for sublingual administration. It has potent dopaminergic (D1–D4), serotonergic (5 - HT_{2A}, 5 -HT_{2C}, 5- HT_6 and 5 - HT_7), adrenergic (α_1 and α_2) and histaminergic (H_1) activity, but it lacks significant anti muscarinic activity [1]. ASP is an atypical antipsychotic approved in the USA in adults for the treatment of schizophrenia and for the acute treatment, as mono therapy or adjunctive therapy to lithium or valproate, ofmanic or mixed episodes associated with bipolar I disorder [2]. ASP is indicated in the European Union for the treatment of moderate to severe manic episodes associated with bipolar I disorder in adults [3] (European Medicines Agency,2010). In short - term trials, ASP has demonstrated superiority over placebo in the treatment of schizophrenia [4, 5] and acute manic episodes associated with bipolar I disorder [6, 8]. The proposed metabolism of ASP and the excretion profiles were recently published [9].

Literature survey revealed that asenapine and three metabolites were estimated in human plasma by LC/MS method [10]. Literature survey revealed that no method has been reported for the estimation of ASP in pharmaceutical dosage form. Forced degradation studies are important way to know the possible route of degradation of pharmaceutical drug. HPLC is the preferred method for the analysis of stability samples compared to UV and

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BUCCAL MUCOADHESIVE BASED DRUG DELIVERY DEVICES

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ABSTRACT

Among the various routes of drug delivery, oral route is the most suitable, convenient and most widely accepted. However, after oral drug administration many drugs are subjected to presystemic clearance in liver, which often leads to a lack of correlation between membrane permeability, absorption and bioavailability. Here the oral cavity is an attractive site for drug delivery due to ease of administration and avoids possible drug degradation in the gastrointestinal tract as well as first pass hepatic metabolism. This is due to direct access of the drug into the systemic circulation through the internal jugular vein bypasses drugs from the hepatic first pass metabolism leading to higher bioavailability. This paper gives a concise review of buccal dosage forms and their formulation accepts in this type of drug delivery technology.

Keywords: Bio-adhesion, Penetration enhancer, Buccal devices, Mucoadhesive polymers.

INTRODUCTION

Bioadhesion may be defined as the state in which two materials, at least one of which is of biological nature, are held together for extended periods of time by interfacial forces and the American Society of Testing and Materials has defined it as the state in which interfacial forces, which may consist of valence forces, interlocking action, or both, hold two surfaces together.[1] For drug delivery systems, the term *bioadhesion* implies attachment of a drug carrier system to a specific biological location. The biological surface can be epithelial tissue, or the mucous coat on the surface of a tissue. If adhesive attachment is to mucous coat, the phenomenon is referred to as mucoadhesion.[2,3] Adhesion is a process, simply defined as the "fixing" of two surfaces to one another or can be defined as the bond produced by contact

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Method development and validation of nicardipine hydrochloride in bulk and formulation using UV spectrophotometric method

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ABSTRACT

The present study describes a simple, accurate, precise, specific and highly sensitive method for the determination of Nicardipine Hydrochloride present in pharmaceutical dosage forms. The method is validated for the determination of Nicardipine Hydrochloride in bulk and tablet dosage form. The solvent used was acetonitrile: water (50:50) and the λmax or the absorption maxima of the drug was found to be 235nm. A linear response was observed in the range of 5-25µg/ml with a regression coefficient of 0.999. The linear regression equation obtained by least square regression method were y=0.249X+0.008, where y is the absorbance and x is the concentration of the pure drug solution. The. The method was validated for several parameters like accuracy, precision as per ICH guidelines. The values of relative standard deviation and % recovery were found to be satisfactory, indicating that the proposed method is precise and accurate and hence can be used for the routine analysis of Nicardipine Hydrochloride in bulk and pharmaceutical formulation.

Keywords: Nicardipine hydrochloride, λmax, ICH, UV-VIS spectroscopy

INTRODUCTION

Nicardipine hydrochloride, 2-(N-benzyl-N-methylamino)ethyl methyl 1,4-dihydro- 2,6-dimethyl-4-(m-nitrophenyl)-3,5-pyridinedicarboxylate monohydrochloride, is a calcium antagonist with highly potent vasodilating activity and has been widely used for the treatment of hypertension and cerebrovascular disease[1]. Although nicardipine is rapidly and completely absorbed from the gastro-intestinal tract after oral administration to humans and laboratory animals, its plasma concentrations are relatively low due to extensive first-pass metabolism in the liver [1,2].

Several analytical methods for nicardipine were reported including spectrophotometry[3- 6], voltammetry[7-9], high performance liquid chromatography[10-14], liquid chromatography-mass spectrometry[15-18], and capillary electrophoresis[19]. A study on forced degradation, degradation kinetics and photo stability of nicardipine were also reported in literature[20-22]. Most of these methods were used for quantitative determination of nicardipine hydrochloride in biological fluids.Hence the objective of proposed study was to develop simple, accurate, precise and rapid this UV spectrophotometric method for the estimation of nicardipine hydrochloride in acetonitrile with water system. Hence, it can be employed for routine analysis in Quality Control Laboratories

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Determination of Tamsulosin in bulk and pharmaceutical dosage forms by UV spectrophotometric method

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ABSTRACT

A Simple, rapid, accurate and economical UV Spectrophotometric method is developed for determination of tamsulosin in bulk and pharmaceutical dosage forms. In methanol, the λmax of the drug was found to be 224 nm. Using UV instrument (analytical), in this proposed method tamsulosin follows linearity in the concentration range 1 – 5µg/ml with a correlation coefficient of 0.9989. Assay results were in good agreement with label claim. The methods were validated statistically and by recovery studies. The relative standard deviation was found to be 0.23516 with excellent precision and accuracy.

Keywords: Tamsulosin, U.V. Spectrometry, Methanol.

INTRODUCTION

Tamsulosin, 5- [(2R)-2[[2-(2-Ethoxy Phenoxy) ethyl] amino] Propyl} - 2-methoxy benzene sulfonamide. Tamsulosin is a selective alpha 1 adrenoceptor blocking agent. Smooth muscle tone is mediated by the sympathetic nervous stimulation of alpha1 adrenoceptors, which are abundant in the prostate, prostatic capsule, prostatic urethra, and bladder neck. Blockade of these adrenoceptors can cause smooth muscles in the bladder, neck and prostate to relax, resulting in an improvement in urine flow rate and a reduction in symptoms of BPH. According to the literature survey it was found that few analytical methods such as Visible, UV, polarographic analysis, HPLC other methods were reported for Tamsulosin, Matsushima H.., Takanuki K.let al.,2004[1], O'Neil MJ, Smith A, Heckelman PE, Budavari et al.,2001[2], ICH Q2 R11995[3], Nanda R K, Gaikwad J and Prakashet al.,2009[4], Chandorkar JG, Kotwal VB, Dhande et

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Antimicrobial screening of some novel Tetramethylene thiophene derivatives synthesized using various aryl acid chlorides

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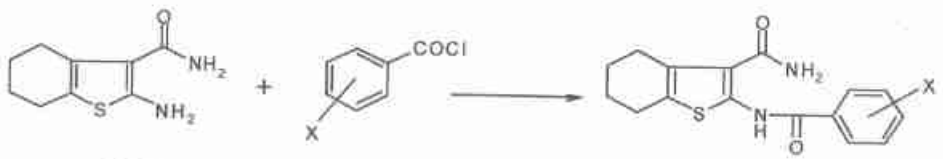
ABSTRACT

The conventional methodology was adopted to synthesize the titled compounds. The synthesis of titled compounds from starting compound i.e 2-amino-3-carboxamido-4,5,6,7 tetramethylene thiophene (SRP-2) was prepared from cyanoacetamide (SRP-1) by condensation with cyclohexanone in the presence elemental sulphur and a basic catalyst diethyl amine in ethanol to form (SRP-2). Then the (SRP-2) was further derivatised in to amides (SRP-2n-q) by reacting with various substituted acid chlorides respectively. The synthesized new compounds were characterized by MP, TLC, UV, IR, NMR and Mass spectra. The title compounds (SRP-2n-q) were screened for their antibacterial activity against two Gram-positive bacteria i.e. *Staphylococcus aureus & Bacillus subtilus* and two Gram-negative bacteria i.e. *Escherichia coli & Klebsiella pneumoniae* using ampicillin as standard, each at a concentration of 50µg/0.1ml, adapting agar diffusion method. The compounds were also screened for their antifungal activity against two pathogenic fungi i.e. *Candida albicans* and *Aspergillus niger* using miconazole nitrate as standard at a concentration of 50µg/0.1ml, adapting agar diffusion method.



SRP-2 | Various substituted aryl acid chloride (n-q) whereas X= H, Cl, Br | SRP-2n-q

Key words: 2-amino-3-carboxamido-4,5,6,7 tetramethylene thiophene ,cyanoacetamide, aryl acid chlorides

INTRODUCTION

Thiophene has exhibited an array of biological activities ranging from antimicrobial[1-2], anti-tumour[3] and anti-inflammatory activity[4]. Among the antimicrobial agents thiophene derivatives are known to have a promising activity. Few to name are Cephalothin, Cephalorodine and Cefoxitin. In Pharmaceutical field new drugs are discovered by molecular modification of the lead compound of established pharmacological activity. In the current literature survey, it has been observed that drug designed by molecular modification is more rational and productive foundation of new drug, consequently the need to synthesize new molecule as potential medicinal agent is more relevant today. So far various new thiophenes have been synthesized and screened in our laboratories for antimicrobial activity. The enthusiastic results prompted us to continue the investigation. So, an attempt was made to synthesize new substituted thiophenes as anti-bacterial agents adapting Gewald reaction.[5-7] Hence the synthesis of 2-amino-3-carboxamido-4,5,6,7-tetra methylene thiophene (SRP-2) was carried out. The different derivatives of the parent compound SRP-2 was achieved by using different aryl aldehyde to obtain a series of Schiff Bases (SRP-2a-m).

MATERIAL AND METHODS:

Experimental:

Melting points were determined by using Precision melting point apparatus in open capillaries and are uncorrected. The purity of the compounds was checked by TLC on silica gel G plates using benzene and ethanol (9:1) solvent system and Ultraviolet lamp and iodine chambers used as a visualizing agent. IR-spectra were recorded using KBr pellets on a SHEMADZU 8000 series spectrophotometer. ^{1}H-NMR spectra on BRUKER 400 MHz Spectrophotometer using DMSO as solvent and TMS as internal standard (chemical shift values expressed in ppm).

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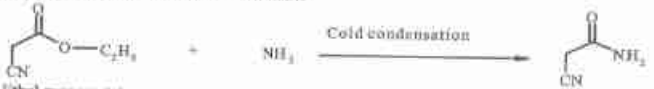
Procedure:

Step-1:Synthesis of Cyanoacetamide (SRP-1):

A mixture of concentrated Aq. Ammonia (150ml, *d* 0.88 Mol) and Ethylcyano acetate (200gm, 1.77 Mol) was taken in 250ml Iodine flask. The mixture was exothermic and cloudy Later it turns to clear mixture and was kept on the ice bath for 1 hour. White Cyanoacetamide was filtered rapidly, dried in air and recrystallized with 95% of Ethanol.



Synthesis of 2-amino-3-carboxamido-4,5,6,7-tetramethylene thiophene (SRP-2):

A mixture of Cyanoacetamide (3.2gm, 0.04 Mol), (4.0ml, 0.04 Mol) of Cyclohexanone , Sulphur (1.28gm, 0.04 Mol) and 30 ml of Ethanol was taken in conical flask and stirred at 45-50 °C. Once the temperature was attained, 4ml of Diethylamine was added dropwise until Sulphur completely went in. The reaction mixture was kept overnight in refrigerator. The obtained crystals was filtered, dried and recrystsllized with Ethanol.

Cyanoacetamide (SRP-1) | Cyclohexanone | SRP-2

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Review Article

ROLE OF COMMUNITY PHARMACIST IN PATIENT'S HEALTHCARE - A GROWING NEED IN CHRONIC DISEASES

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ABSTRACT

Community pharmacist is only healthcare professional who will interact with several individuals each day and can make successful efforts to educate the patients and guide him about the disease, drugs and life style modification. Patient understanding regarding the diseases plays a very important role in management of chronic diseases. Since chronic diseases move through different phases and these phases of diseases require different kinds of managing strategies these patients are primarily concerned with quality of life. In this article the authors make an attempt to emphasize some of the commonly seen chronic diseases where community pharmacists can play an active role through patient's healthcare.

Keywords: Patient Care, Chronic Diseases, Community Pharmacist.

INTRODUCTION

It is well known that the most prevalent chronic diseases are strongly linked to specific behaviors such as smoking, diet, sedentary lifestyle, intravenous drug abuse etc. Prevention and effective treatment of these diseases require behavior changes[1]. Community Pharmacists familiarize themselves with recent developments in the scientific study of the behavior change. Moreover, chronic diseases in many cases are life-long. It damages the patients' "biography" and self-image and usually has a more severe impact than acute diseases on quality of life. When providing medication counseling to patients with chronic diseases, pharmacists must be sensitive to the broad array of challenges the patients face. For the patients with chronic diseases, home is the central site of managing diseases and these patients also require more knowledge on the management of their diseases. Since chronic diseases move through different phases and these phases of diseases require different kinds of managing strategies these patients are primarily concerned with quality of life [2,3]. In this article the authors make an attempt to emphasize some of the commonly seen chronic diseases where community pharmacists can play an active role through patient's healthcare.

1. Diabetes

Diabetes is a group of metabolic disorder in which a person has high blood sugar, either because the body does not produce enough insulin, or because cells do not respond to the insulin that is produced. This high blood sugar produces the classical symptoms of increased

Review Article

A critical and comprehensive review on toxicovigilance

Abstract

Toxicovigilance is the active process of identifying and evaluating the toxic risks existing in a community and evaluating the measures taken to reduce or eliminate them. It should be viewed as a useful complement to prevent poisoning. The section serves to enhance epidemiological surveillance for identification of poisoning/risk of poisoning in the community, the substances, circumstances, and the population involved in and to strengthen investigation of poisoning incidences of public health significance so as to implement control measures in a timely manner. Data mining of large databases, such as those of poison centers, can be extremely helpful by triggering signals for health authorities. So far, very few countries have set up structured toxicovigilance systems and it is anticipated that in future, national and international initiatives will help bridging this gap in our knowledge of the toxicity of many chemicals and commercial products to human beings.

Key words:
Poisoning, toxic effect, toxicovigilance

Toxicovigilance

The general approach of toxicovigilance comprehends the effective exposure, authentication, and follow-up of clinical adverse events associated with poison exposure in human beings by means of house-hold, intentional or unintentional, occupational or environmental chemicals, and products.[1]

Scope of Toxicovigilance

Distinct case reports are beneficial and important sources of data. It acknowledges medical history, circumstances from being exposed, and consequences of adverse event. It evolves from general physicians, clinical toxicologists, poison information center, or any other healthcare professionals. An attentive validation of data is absolutely necessary. It provides the motivation for education of medical toxicologists. It provides the foundation for the environmental medicine and toxicology in the programming of medical and clinical pharmacy students.

Toxicovigilance is considered likely to examine series of standardized clinical case reports for the determination of hazard recognition and risk assessment. It allows particular follow-up of sub-groups (e.g., children, cultural, life-style factors) of the general population. The toxicovigilance approach is used for the detection, identification, and validation of clinical adverse events occurring in more susceptible sub-groups. It serves as a movement for epidemiologic studies. Diagnosis is consistent with toxicological plausibility. Toxicovigilance is able to generate signals that can be used to elabolarate pathogenic hypothesis.[2]

Need of Toxicovigilance

Toxicovigilance plays a main role in order to decrease both mortality and morbidity from poisoning. It improves in the diagnosis, prevention, and management of poisoning. It illustrates the recognition of toxic etiology either from the environment or unexplained pathological conditions. It consists of providing the emergency services with the means

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Research Article

COMMUNITY BASED SURVEY OF SELF-MEDICATION USAGE IN ANDHRA PRADESH

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ABSTRACT
The objective of the study is to evaluate usage of self-medication in the community setup. A total of 100 self-medication prescriptions were analyzed during the study period in retail pharmacy and it was found that males 71% purchased self-medication from the pharmacy then female. We found that the highest incidence of self-mediation was in the age group (26-35) 39 cases, followed by other age group, and most of the patients who had purchased single medication were 69, in between (2-4) medications were 26 followed by others. We found that the 21 patients had social habits like smoking, alcoholic and tobacco that had purchased self-medication in the pharmacy. The most frequent complaints from the patients were fever (18), pain (16), headache (15), acidity (14), vomiting (11), infection (11) cough (9), and others. The most frequently purchased drugs were the Nonsteroidal Anti-Inflammatory Drugs (NSAIDs), Anti-ulcer agents like H2-receptor blocker and proton pump inhibitors (PPIs), Antibiotics, Antihistamines, Antiemetics and others. This survey shows that the majority of the people had a poor knowledge about appropriate self-medication while the knowledge of the benefits and risks was not adequate.
KEYWORDS: Community, Self-Mediation, Antibiotics

INTRODUCTION

Self medication is defined as the use of medication by a Patient on his own initiative or on the advice of a Pharmacist or a lay person instead of consulting a medical practitioner.[1] The reasons for self medication mentioned in the literature are mild illness, previous experience of treating similar illness, economic considerations and lack of availability of healthcare personnel. The most common medications used for self medication are analgesics and antimicrobials.[2,3] Potential risks of self-medication practices include: incorrect self-diagnosis, delays in seeking medical advice when needed, infrequent but severe adverse reactions, dangerous drug interactions, incorrect manner of administration, incorrect dosage, incorrect choice of therapy, masking of a severe disease and risk of dependence and abuse. Study on self medication shows that it is influenced by many factors such as education, family, society, availability of drugs and exposure to advertisements.[4,5] A high level of education and professional status has been mentioned as predictive factor for self medication.[6] Self medication involves the use of drugs, and drugs have the potential to do good as well as cause harm.

MATERIALS AND METHODS

A community based systematic plan of work which was carried out:-

Step 1: Collecting literature based evidences from books, journals and the internet.

Step 2: Fixing or preparation of standardized team for collecting patient data, with priority assigned to age, gender, social status, present complaints, past and current medication.

Step 3: Collection of patient data from all the patients who purchased drugs without prescription (self-medication). This work was done for period of 3 months

Step 4: Analysis of all the data obtained, comparison with, and observing the trends with existing literature.

Study Subjects: Any customer/patients purchasing medications without a prescription, with the sole intention of self-medicating.

Setting: Retail pharmacy in Warangal (Andhra Pradesh)

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Original Research Manuscript

Free Radical Scavenging Activity of Methanolic whole plant extract of *Trianthema portulacastrum* Linn (Aizoaceae)

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ABSTRACT

Free radical scavenging potential of the methanolic whole plant extract of *Trianthema portulacastrum* Linn, was evaluated by 1,1-Diphenyl-2 picryl hydrazyl (DPPH) and hydrogen peroxide assay. The results suggest that the methanolic extract showed a concentration dependent free radical scavenging activity against DPPH and hydrogen peroxide radicals and the IC_{50} values were found to be as 4.5 ±0.6 and 3.7 ± 0.5 mg/ml, which were comparable with standard ascorbic acid.

Key words: *Trianthema portulacastrum*, DPPH assay, hydrogen peroxide assay, free radical scavenging activity

INTRODUCTION

Free radicals are atomic or molecular chemical species with unpaired electrons. These free radicals are highly unstable and can react with other molecules by giving out or accepting single electron (Crastes., 1990). Antioxidant agents of natural origin have attracted special interest because they can protect human body from free radicals (Osawa., 1990). In view of this, we selected *Trianthema portulacastrum* Linn, which is plant of the family Aizoaceae, to assess the *in vitro* antioxidant activity. The plant is found almost throughout India as a weed in cultivated and wastelands. It has a remarkable protection against the induction of hepatotoxicity (Sarkar., 1999) and hepatocarcinogenesis (Bhattacharya et al., 1998). The present study was aimed at evaluating the *in vitro* free radical scavenging activity of methanolic whole plant extract of *T. portulacastrum* Linn.

MATERIALS AND METHODS

Extraction of plant material

The plant *Trianthema portulacastrum*, was obtained from the Government of Siddha Medical College, Chennai (TN), India. The plant was taxonomically identified and authenticated as *Trianthema portulacastrum Linn.* by Prof. Chelladurai, Research Botanist, Palayamkottai, Tamil Nadu, India. The whole plant was dried under shade and ground to a fine powder in a

RESEARCH ARTICLE

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Formulation and Evaluation of Bilayered Sustained Releases Matrix Tablets of Salbutamol Sulphate and Theophylline

V Mallikarjun[1], V Rajesh babu[2], P Ravi[1], B Raja Narender[1], B Rajkamal[3]

Abstract: The purpose of the study was to develop the sustained release of bilayered tablets. Bilayered tablets are preferred when the release profile of the drugs are different from one another. In this studies combination of Salbutamol sulphate and Theophylline are used which shows synergistic effect in producing bronchodilation. The formulations were prepared by using HPMC-P, Ethyl cellulose and $HPMCK_{100}M$ as polymers at various concentrations. The bilayered matrix tablets were prepared by wet granulation method. The prepared tablets were evaluated for hardness, drug content and invitro dissolution studies. All the formulations showed good matrix integrity and sustained release of drug for 8hrs. In F13 formulation theophylline release was 13.20% in the 1st hour and in 8th hour 99.62% and Salbutamol sulphate release was 46.6%in the 1st hour and only 96.26% in the 8th hour. So it can be concluded that the formulation (F13) which containing HPMC-P polymer is suited for the sustained release matrix tablets of Salbutamol sulphate and Theophylline.

Keywords: Bi-layered tablets, salbutamol, theophylline, synergistic effect.

INTRODUCTION

Sustained release dosage forms are proffered than conventional dosage form, because the therapeutic effective concentration can be maintained for longer time. Both local and systemic adverse effects can be reduced and multi dosage can be eliminated. This combination dosage form is very much useful in the relief of nocturnal asthma, when given in the evening times. Bilayered tablets [1] are preferred when the release profile of the drugs are different from one another.

Salbutamol [2] sulphate and theophylline [3] are used which shows synergistic effect in producing bronchodilation. The half – lives of salbutamol and theophylline are 4 and 7 respectively, hence are suitable candidates for the design of sustained release drug delivery system. The combined use of salbutamol and theophylline in a dosage form produces prolonged bronchodilation effect; that is synergistic effect and also reduces the use of large amount of drug and frequency of dosing for the bronchodilation effect. The formulations were prepared by using HPMC-P, ethyl cellulose and $HPMCK_{100}M$ as polymers [4, 5, 6, 7] at various concentrations and prepared tablets were evaluated for hardness, drug content and *in vitro* dissolution studies.

Bi-layered tablets are preferred when the release profiles of the drugs are different from one another that is in the present case 2 mg of salbutamol has to be released immediately and the remaining 2 mg has to be released sustained, so that therapeutic concentration can be maintained effectively and the theophylline release should be controlled in such a way that release of theophylline should be less in stomach and further release should be increased in the intestine and complete within 8 hours.

MATERIALS AND METHODS

Materials

Salbutamol Sulphate was obtained as a gift sample from Nacto Pharma, India and Theophylline 'was a kind gift from Square Pharmaceuticals. Ethylcellulose (7cps) was procured from Geninune chemicals, $HPMCK_4M$(4000cps), $HPMCK_{100}M$ (100cps). Xanthan gum, was obtained as a gift sample from Aurobindo Pharmaceuticals, India. All other reagents and chemicals used were of analytical grade.

Methods

Wet granulation

The granules were prepared in Bi-layered design and two different granules are prepared for two different layers. The granules are differentiated by adding colour to one of the granules i.e. blue colour used for theophylline 300 mg and indigo caramine lake used for salbutamol 2 mg. Generally the blue colour used for formulations containing bronchodilator medicine. The total weight of the tablet limited 590 mg, of which blue part up to 400 mg and white part to 190 mg.

Preparation of blue part granules

Blue part granules –

$FB_1 – FB_5$ – $HPMCK_4M$

$FB_6 – FB_7$ – $HPMCK_{100}M$

$FB_8 – FB_{10}$ – Ethyl cellulose (7CP_S)

FB_{11}-FB_{14} – HPMC-P

For all formulation procedure was same but the polymer was changed.

The drugs Theophylline, Salbutamol, Croscarmellose sodium, Mccp and Lactose anhydrous were weighed and passed through sieve no. # 40 and polymers like $HPMCK_4M$, $PMCK_{100}M$, Xanthan gum, ethyl cellulose and HPMC-P and colour indigo caramine lake were passed through sieve no. # 80.Then this blend is mixed with granulating agent like PVPK 30 in Isopropanol in 2% concentration for all batches and passed through sieve no # 10. The wet granules are air dried for 2-3 hours.The dried granules are passed through sieve no. # 18 and the remaining excipients like talc, aerosol, are added to the granules. Then these lubricating granules were compressed using 11.00 mm flat punches (Table 1, 2).

Preparation of white part granules (FW_1 - FW_3)

Salbutamol was mixed to the other ingredients in geometric dilution to prevent non-uniform mixing. The Salbutamol sulphate, $HPMCK_4M$, Starch and Dicafos is mixed with granulating fluid PVPK 30 in Isopropanol in 2 % concentration and it is slowly added to screened and weighed ingredients and made as wet mass and passed through sieve no. # 10.The wet granules were air dried for 2-3 hours. The dried granules are passed through sieve no. # 18 and the remaining excipients

Table 1. Formulation with HPMCK4M, HPMCK100M

Ingredients	Layer 1							Layer 2		
	FB1	FB2	FB3	FB4	FB5	FB6	FB7	FW1	FW2	FW3
Theophylline anhydrous	300	300	300	300	300	300	300	----	----	----
Salbutamol sulphate	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.40
HPMC K_4 M	85	85	55	45	15	---	---	90	95	174
HPMC K_{100} M	---	---	---	---	---	50	35	---	---	---
PVP K_{30}	8	8	8	8	8	8	8	8	8	8
Lactose anhydrous	---	---	---	20	---	---	---	---	---	---
Croscarmellose sodium	---	5	---	12	---	---	---	---	---	---
MCC	---	---	---	---	50	16	31	---	---	---
Starch	---	---	---	---	---	---	---	40	90	---
Dicafos	---	---	---	---	---	---	---	40	---	---
Talc	6	6	6	6	6	6	6	5	5	5
Aerosil	2	2	2	2	2	2	2	---	---	---
Indigo caramine lake	2	2	2	2	2	2	2	---	---	---

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PRELIMINARY STUDIES ON ANTI-INFLAMMATORY AND ANALGESIC ACTIVITIES OF *BALIOSPERMUM MONTANUM.*

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Summary

The methanolic extract of root of *Baliospermum montanum* was screened for anti-inflammatory and analgesic activity. Anti-inflammatory activity was studied in wister rats using carrageenan induced paw edema model and analgesic was studied in albino mice using Hot plate and writhing model at the doses of 100.200,300 mg/kg. The extract produced dose dependent and significant inhibition for paw edema, hot plate and writhings and was compared with standard drugs.

Keywords: Anti-inflammtory, Analgesic, Hot Plate, Writhing.

Introduction

Baliospermum montanum plant is locally known as Danti, and its roots have long been used as Ayurvedic remedy for jaundice[1]. It is distributed throughout India, Burma, and Malaya[2]. In India,it is distributed from Kashmir eastwards to Arunachal Pradesh, up to an elevation of 1,000 m and southwards into peninsular India, ascending to an altitude of 1,800 m in the hills of Kerala[3]. Almost all the parts of Danti are of medicinal importance and used traditionally for the treatment of various ailments. The roots of the plant are considered as purgative, anthelmintic, diuretic, diaphoretic, rubefacient, febrifuge and tonic[4]. They are also reported to be useful in dropsy, constipation, jaundice, leprosy and skin diseases. The leaves are found to be good for asthma and bronchitis[5]. The tribals of Madhya Pradesh and Karimnagar district, Andhra Pradesh, India using leaves of danti for the treatment of asthma[6,7], and in headache[8].Decoction of stem is used to get relief from toothache[9, 10]. The roots of the plant are practiced as laxative[10, 11], in dropsy,jaundice, anasarca[6, 12], in rheumatism, anemia[13], and also in the treatment of jaundice, skin diseases, helminthic infections, leucoderma and piles.

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Antihyperglycemic Activity of *Trianthema Portulacastrum* Plant in Streptozotocin Induced Diabetic Rats

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Summary

The objective of the present study was to evaluate the antihyperglycemic activity of methanolic extract of *Trianthema portulacastrum* whole plant in streptozotocin-induced diabetic rats. The STZ induced diabetic rats are divided into four groups of six animals each. Group I served as diabetic control, Group II diabetic rats were treated with a standard oral hypoglycaemic agent, glibenclamide (1mg/kg) while Group III and IV diabetic rats received 100 mg/kg and 200 mg/kg suspension of methanolic extract of *Trianthema portulacastrum*. The methanolic extract (METP) produced a significant antihyperglycemic effect ($p<0.05$) after 1 hr following administration and this antihyperglycemic effect was more pronounced after 4 hrs of treatment in streptozotocin-induced diabetic rats. The findings of the present study suggest that the methanolic extract of *Trianthema portulacastrum* produced significant antihyperglycemic activity in STZ induced diabetic rat which is comparable to Glibenclamide (a standard oral hypoglycaemic agent).

Keywords: *Trianthema portulacastrum*, streptozotocin-induced diabetes, oral hypoglycaemic agent, antihyperglycemic effect.

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ANTI-INFLAMMATORY AND ANTIMICROBIAL ACTIVITIES OF METHANOLIC EXTRACT OF *TRIBULUS TERRESTRIS* LINN PLANT

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ABSTRACT

Tribulus terrestris Linn is a herb of the family Zygophyllaceae, whose parts are known to be used as traditional herbal medicine to treat various aliments such as kidney infections. The methanol extract of *Tribulus terrestris* plant was screened for anti-inflammatory and antimicrobial activity. The methanolic extract showed a significant inhibition on the growth of Gram (+) and Gram (-) bacteria at concentrations of 200 µg/mL and 400 µg/mL, respectively. A dose dependent inhibition of rat paw volume by methanolic extract of *T. terrestris* in Carrageenan induced inflammation in rats was observed, which is comparable with standard drug, diclofenac sodium.

Key words : Tribulus terrestris, Antimicrobiol, Antiinflammatroy.

INTRODUCTION

Many of the drugs isolated and characterized from plants and extensively used in modern medicine have a folklore origin and are traditionally employed in systems of medicine in curing many aliments[1-3]. Several drugs and chemotherapeutics have been obtained from naturally occurring products of medicinal plants[4,5]. *Tribulus terrestris* Linn is a herb, which belongs to the family Zygophyllaceae and is found in waste places and dry habitats throughout the warmer regions of India. The parts of the plant are known to be used as traditional herbal medicine to treat various aliments such as kidney infection,

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Free Radical Scavenging Activity of Some Isatin-5-Sulphonamide Derivatives

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Summary

The present study was aimed at evaluating the *In vitro* free radical scavenging activity of some new isatin-5-sulphonamide derivatives using DPPH and H_2O_2 methods. The free radical scavenging activity of test compounds was determined by DPPH, H_2O_2 and nitric oxide radical scavenging methods. All the five test compounds showed dose dependent scavenging activity.

Key words: Antioxidant activity, Isatin-5-Sulphonamide derivatives, free radical scavenging activity

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Research Article

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Design and evaluation of Glipizide floating tablets

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ABSTRACT

The purpose of this investigation was to prepare a gastro retentive drug delivery system of Glipizide. Floating tablets of Glipizide were prepared employing two different grades of HPMCK$_4$ and HPMC K$_{15}$ polymers by effervescent technique; these grades of polymers were evaluated for their gel forming properties. Sodium bicarbonate was incorporated as a gas-generating agent. The Floating tablets were evaluated for uniformity of weight, hardness, friability, drug content, *in vitro* buoyancy and dissolution studies. The drug release profile and floating properties was investigated. The prepared tablets exhibited satisfactory physico-chemical characteristics. All the prepared batches showed good in vitro buoyancy. The tablet swelled radially and axially during in vitro buoyancy studies. It was observed that the tablet remained buoyant for 12-20 hours. The tablets with HPMCK$_{15}$M were found to float for longer duration as compared with formulations containing HPMCK$_4$M.

Key words: Glipizide, Floating tablets, *in vitro* buoyancy and polymers

INTRODUCTION

Glipizide[1, 2, 3] is an anti-diabetic drug[4] which cures the type-II diabetes and with narrow therapeutic index. The recommended adult dose is 5mg twice daily (or) 10mg once daily, due to the low bioavailability and short biological half-life (4 hours) of Glipizide following oral administration favors development of a controlled release formulation. It also leads to reduction in frequency of dosing & drug toxicity which in turn improve patient compliance.

The gastro retentive drug delivery systems[5] can be retained in the stomach and assist in improving the oral sustained delivery of drugs that have an absorption window in a particular region of the gastrointestinal tract. These systems help in continuously releasing the drug before it reaches the absorption window, thus ensuring optimal bioavailability. Glipizide is taken because the absorption of drug is in the stomach[6]. In the present investigation floating tablets of Glipizide were prepared by effervescent approach using two different grades of hydroxyl propyl methyl cellulose polymers[7,8] (K$_4$M and K$_{15}$M). The aim of the work was to evaluate the effect of polymers on floating properties and release characteristics of Glipizide tablets.

MATERIALS AND METHODS

Floating matrix tablets containing Glipizide were prepared by direct compression technique using varying concentrations of different grades of polymers with sodium bicarbonate. The drug and polymer ratio is 1:3 in all formulations.

Glipizide was mixed with the required quantities of Lactose, HPMCK$_4$M, HPMCK$_{15}$M and Sodium bicarbonate by geometric mixing after that the mixture was blended with magnesium- stearate and further mixed for additional 2-3 minutes. Then the powder was compressed on tablet punch machine (10x3). Compression force of the machine was adjusted to obtain the hardness in the range of 5 kg/cm^2. The weight of the tablets was kept constant for formulations F$_1$ to F$_9$. The composition of all formulations was given in (table.1).The compressed tablets were evaluated for hardness, friability, uniformity of drug content, buoyancy Lag time[9,10], total floating time[11], swelling index[12,13] & in-vitro drug release characteristics. In- Vitro drug release studies [14] carried out in USP XXII tablet dissolution apparatus in 900mL of dissolution medium, maintaining at 37^{0}c ± 0.5^{0}c. Aliquot samples were with drawn with every one hour up to a period of 12hrs. The aliquots were diluted suitably, analyzed at 275nm & in-vitro release from the tablets was determined.

RESULTS AND DISCUSSION

The floating tablets of Glipizide were prepared by effervescent technique using HPMCK$_4$ and HPMCK$_{15}$, sodium bi carbonate. The magnesium stearate and lactose were used as lubricant and glidant, respectively. The weight of the tablet was 10mg for all formulations with low standard deviation values, indicating uniformity of weight. The variation in weight was within the range of ±5% complying with pharmacopoeial specifications [5]. The hardness for different formulations was found to be between 4-5 kg/cm2 indicating satisfactory mechanical strength. The friability was below 1% for all the formulations, which is an indication of good mechanical resistance of the

Antihyperglycemic Activity of *Trianthema Portulacastrum* Plant in Streptozotocin Induced Diabetic Rats

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Summary

The objective of the present study was to evaluate the antihyperglycemic activity of methanolic extract of *Trianthema portulacastrum* whole plant in streptozotocin-induced diabetic rats. The STZ induced diabetic rats are divided into four groups of six animals each. Group I served as diabetic control, Group II diabetic rats were treated with a standard oral hypoglycaemic agent, glibenclamide (1mg/kg) while Group III and IV diabetic rats received 100 mg/kg and 200 mg/kg suspension of methanolic extract of *Trianthema portulacastrum*. The methanolic extract (METP) produced a significant antihyperglycemic effect ($p<0.05$) after 1 hr following administration and this antihyperglycemic effect was more pronounced after 4 hrs of treatment in streptozotocin-induced diabetic rats. The findings of the present study suggest that the methanolic extract of *Trianthema portulacastrum* produced significant antihyperglycemic activity in STZ induced diabetic rat which is comparable to Glibenclamide (a standard oral hypoglycaemic agent).

Keywords: *Trianthema portulacastrum*, streptozotocin-induced diabetes, oral hypoglycaemic agent, antihyperglycemic effect.

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RESEARCH ARTICLE

In Vitro Lipid Peroxidation Inhibitory and Antimicrobial Activity of *Phyllanthus niruri* (Euphorbiaceae) Extract

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ABSTRACT

The present work was designed to evaluate the in vitro lipid peroxidation inhibitory and antimicrobial activities of the methanol extract of Phyllanthus niruri (MEPN) (Family: Euphorbiaceae). Lipid peroxidation was measured by the optical density of the prepared solutions (10-320 µg/ml) and then the percent inhibition was calculated. Ascorbate/FeSO4-induced peroxidation was inhibited by standard antioxidants such as L-ascorbic acid, quercetin and MEPN. Moreover, the percent inhibition of the methanol extract was increased in a concentration-dependent manner. IC50 value for the MEPN, L-ascorbic acid and quercetin for lipid peroxidation was found to be 62.5 µg/ml, 41 µg/ml and 19.75 µg/ml respectively. The antimicrobial activity of MEPN was determined by disc diffusion method with various gram-positive and gram-negative microorganisms. The MEPN showed strong antimicrobial activity against Bacillus pumillus 8241, Bacillus cereus, Escherichia Coli 54B and Vibrae Cholera at a concentration of 750 µg/ml/disc. However, its activity against Staphylococcus aureus ML 152 and Vibrae cholera 14035 was less significant. The antimicrobial activity of the extract was compared with the standard drug, chloramphenicol at a concentration of 10µg/ml/disc. The results obtained in the present investigation clearly suggest that MEPN can be a potential source of natural antioxidant and antimicrobial agent.

Keywords: *Phyllanthus niruri, In vitro lipid peroxidation inhibitory activity, Antimicrobial activity*

There has been growing interest in the investigation of the natural products from plants for the discovery of new antimicrobial and antioxidant agents as well as an alternative route for the substitution of synthetic chemicals, side effects of which are always in question. For this, the essential oils and the extracts of many plants have been prepared and screened for their antimicrobial and antioxidant activities leading to the accumulation of a large number of reports in the literature concerning the above-mentioned properties of plants [1-5]. Much attention has been paid to the plant extracts and the isolated compounds because of their less side effects and the strong resistance towards various microorganisms [6]. Plant-based antimicrobials represent a vast untapped source for medicines and further exploration of plant antimicrobials is needed as antimicrobials of plant origin have enormous therapeutic potential. They are effective in the treatment of infectious diseases while simultaneously mitigating many of the side effects that are often associated with synthetic antimicrobials [7].

PN (family: Euphorbiaceae) is a perennial herb distributed throughout the tropical and subtropical regions of both hemispheres. In India, it is widespread in drier tropical areas of Andhra Pradesh, Tamil Nadu, Kerala and Karnataka states of South India. It is named the 'stone breaker' by the indigenous people. Whole plant, fresh leaves and fruits are used to treat various ailments like dysentery, influenza, vaginitis, tumors, diabetes, diuretics, jaundice, kidney stones, dyspepsia, antihepatotoxic, antihapatitis-B, antihyperglycemic and also as antiviral and antibacterial [8]. Antitumor and anticarcinogenic activities of *Phyllanthus amarus* have also been reported [9]. Other medicinal properties such as hypolipidemic [10] and antiviral [11, 12] activities of *Phyllanthus niruri* have also been shown. Several bioactive molecules, such as lignans, phyllanthin, hypophyllanthin, flavonoids, glycosides and tannins, have been shown to be present in the extracts of PN [9]. The phytochemicals from PN and their pharmacological properties were studied by Bagalkotkar *et al* [13]. Using a rat

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Formulation and Evaluation of Metaprolol Succinate Floating Matrix Tablets

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Abstract

Floating drug delivery systems (FDDS) have a bulk density less than gastric fluids and so remain buoyant in the stomach without affecting the gastric emptying rate for a prolonged period of time. While the system is floating on the gastric contents, the drug is released slowly at the desired rate from the system. Metoprolol is a beta$_1$-selective (cardioselective) adrenergic receptor blocking agent. This preferential effect is not absolute, however, and at higher plasma concentrations, metoprolol also inhibits beta2-adrenoreceptors, chiefly located in the bronchial and vascular musculature. In this investigation metaprolol succinate floating tablets were prepared by using different grades of HPMC Polymers and xanthum gum by direct compression method. The tablets were evaluated for Precompression and post compression parameters indicating that the formulations made considered being satisfactory. *In vitro* drug release profiles for all formulations were carried out by using 0.1 n Hcl buffer as dissolution medium for about 12 hrs. From the results it was found that the release of drug from f4 formulation (HPMC k 100M as polymer) gave the better release than other formulations.

Keywords: metaprolol succinate, HPMC K100M, floating drug delivery

Contents

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PAPER-QR CODE

1. Introduction

The oral route is considered as the most promising route of drug delivery. Effective oral drug delivery may depend upon the factors such as gastric emptying process, gastrointestinal transit time of dosage form, drug release from the dosage form and site of absorption of drugs. Most of the oral dosage forms possess several physiological limitations such as variable gastrointestinal transit, because of variable gastric emptying leading to non-uniform absorption profiles, incomplete drug release and shorter residence time of the dosage form in the stomach. This leads to incomplete absorption of drugs having absorption window especially in the upper part of the small intestine, as once

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DRUG UTILIZATION PATTERN OF METABOLIC AND NON METABOLIC SYNDROME OF TYPE 2 DIABETIC PATIENTS AT OUTPATIENT WARD

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★★★★★★★★★★

ABSTRACT

Drug utilization is defined as the marketing, distribution, prescription, and use of drugs in society with emphasis on the resulting medical and social consequences. WHO specifies drug use indicators for adoption in drug utilization studies. The objective of this study was to analyse and evaluate the medical, social and economic outcomes of the drug therapy and observe the prescribing attitude of physician in diabetic patients. The study was conducted using WHO-based prescription auditing performa. Data was recorded from the patients attending the hospital outpatient department. (OPD) of endocrinology. The results of the present study shows that anti-diabetics of metformin and glibenclamide was more prescribed in non-metabolic syndrome patients (35.09%) compared to metabolic syndrome patients (33.19%). Average drugs prescribed were 4.38 in metabolic syndrome patients compared to 3.62 in non-metabolic syndrome patients. Percentage of generics prescribed were 90.73 in metabolic syndrome patients compared to 93.5 in non-metabolic syndrome patients. Our article suggest that the incidence of polypharmacy in Type 2 diabetic patients was low and generics and essential drug prescription is high in our clinical set up and therefore drug used in our hospital is quite rational. In future, improving the patient knowledge regarding the drug therapy, dose and frequency will perhaps improves the quality of life in Type 2 diabetic patients.

Key words: Diabetes; Drugs; WHO Indicators, Metabolic Syndrome and Prescription.

★★★★★★★★★★

INTRODUCTION

Drug utilization is defined as the marketing, distribution, prescription, and use of drugs in society with emphasis on the resulting medical and social consequences [1]. WHO specifies drug use indicators for adoption in drug utilization studies [2,3]. In 1985, World Health Organization (WHO) defined that rational use of drugs requires that patients receive medication appropriate to their clinical needs, in doses that meet their own individual requirement for an adequate period of time and at the lowest cost to them and their community [4]. Drug utilization studies create a sound sociomedical and health economic basis for healthcare decision making [5]. A survey depicts that 4% of the adults in India suffer from diabetes in the year 2000 and is expected to increase to 8% by the year 2025 [6]. Since 1995, a dozen orally administered diabetes medications or combination of medications for the management of type 2 diabetes mellitus have been approved by FDA [7]. They play a primary defense function against hyperglycemic events in comparison to insulin therapy [8]. Several problems in drug use patterns have been reported. These include use of irrational combinations, excessive prescription of multivitamins, use of antibiotics in viral infections etc [9]. Often the chronically ill patients like the diabetic patients

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Formulation and Evaluation of Guar gum microspheres of Aceclofenac for colon targeted drug delivery

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ABSTRACT

Guargum microspheres were prepared by the emulsification method using glutaraldehyde as a cross linking agent. Characteristics of microspheres were greatly affected by varying guar gum concentration, glutaraldehyde concentration with 5% v/v span 80, at 4000 rpm stirring rate, for a period of 4 h stirring time at 50°C. Aceclofenac loaded microspheres demonstrated high entrapment efficiency of 79.99%. The *in vitro* release was investigated in gastro intestinal medium of different pH and phosphate buffer saline with and without rat ceacal contents, which was found to be affected by changing the concentration of guar gum and glutaraldehyde. The drug release in phosphate buffer solution (pH 7.0) and simulated gastric fluids followed a similar pattern and had a similar release rate, while a significant increase in drug release (83.23%) was observed in the medium containing 4 % rat ceacal content. *In vivo* anti-inflamunatory activity for the optimized formulation confirms after a lag time, drug released from the formulation, upon enzyme action after reaching to the colon. Thus concluded, guar gum microspheres showed adequate potential in targeting to colon for treating rheumatoid arthritis and to maximize the drug release upon enzymatic action of drug in *in vitro* release studies, and this finding was further endorsed with other *in vivo* studies.

Key words: Aceclofenac, Guar Gum, Microspheres, Glutaraldehyde Cross Linking, Colon Targeting.

INTRODUCTION

The goal in drug delivery research is to develop formulations to meet therapeutic needs relating to particular pathological conditions. Colon as a site offers distinct advantages on account of a near neutral pH, a much longer transit time, reduced digestive enzymatic activity, and a much greater responsiveness to absorption enhancers[1].Various pharmaceutical approaches that can be exploited for the development of colon targeted drug delivery systems are microbially triggered drug release, pH controlled drug release, time controlled drug release and intestinal pressure controlled drug delivery systems. A large number of polysaccharides such as amylose, guar gum, pectin, chitosan, inulin, cyclodextrins, chondroitin sulphate, dextrans and locust bean gum have been investigated for their use in colon targeted drug delivery systems. As these polysaccharides are usually soluble in water, they must be made water insoluble by cross linking or hydrophobic derivatisation[2]. Rheumatoid arthritis is traditionally considered a chronic, inflammatory, autoimmune disorder that causes the immune system to attack the joints. Circadian rhythm of levels of interleukin- 6 might correspond to the rhythm of symptoms of rheumatoid arthritis[3].Non steroidal anti inflammatory drugs are considered to be the first line drugs in the symptomatic treatment of rheumatoid arthritis. Aceclofenac has been selected as a model drug, because it is well absorbed from the colon, avoiding hepatic metabolism and eliminating the upper gastro intestinal side effects[4]. A generally accepted view is that multiparticulate systems perform better *in vivo* than single unit systems, as they spread out throughout the length of the intestine causing less irritation, enjoy a slower transit through the colon and give a more reproducible drug release[5].The basic idea behind the dosage form development of multiparticulate drug delivery system for providing maximum drug concentration after 6 to 8 h of lag time after a dose taken at bed time until it reached to colon by using inexpensive and naturally occurring polymers that specifically digested by the colonic microbial flora and enables a more specific targeting and independent of pH variations along the gastro intestinal tract.

MATERIALS AND METHODS

Aceclofenac (98.5-102 % pure) was gift sample from Micro labs, Bangalore. Guar gum (viscosity of 1% aqueous dispersion 1500-2000 cps) was procured from Indian Research Products, Chennai. Glutaraldehyde was purchased from Praxmy Specialty Chemicals, Chennai. All the chemicals were of analytical grade.

Preparation of guar gum microspheres

Drug loaded guar gum microspheres were prepared by the emulsification method[6].Various formulation variables that could affect the preparation and properties of the microspheres were identified and optimized by keeping process parameters such as stirring speed 4000 rpm, temperature of the system at 50°C and stirring time for 4hrs constant. Different polymer concentrations of guar gum (1%, 1.5%, 2.0% and 2.5% w/v) were investigated to prepare the microsphere formulations were FP1, FP2, FP3 and FP4 respectively. In each formulation, 0.5% w/v polymer concentration and 1.5 ml glutaraldehyde concentration were kept constant. Different drug concentrations of Aceclofenac (0%, 0.5%, 1.0%, 1.5% and 2.0% w/v) were investigated to prepare the microsphere formulations FD0, FD1, FD2, FD3 and FD4 respectively. In each formulation, 2% w/v polymer concentration and 1.5 ml glutaraldehyde concentration were kept constant. Different concentrations of cross linking agent glutaraldehyde (1 ml, 1.5 ml and 2.0 ml) were investigated to prepare the microsphere formulations FC1, FC2 and FC3 respectively. In each formulation, 2% w/v polymer concentration, 1.5% w/v drug concentration were kept constant.

Characterization of microspheres

Particle size analysis of unloaded and drug loaded guar gum microspheres was performed by optical microscopy using a compound microscope.Surface and shape characteristics of microspheres were

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UV SPECTROPHOTOMETRIC METHOD FOR DETERMINATION OF FINASTERIDE IN BULK AND PHARMACEUTICAL DOSAGE FORM

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ABSTRACT

A Simple, rapid, accurate and economical UV Spectrophotometric method is developed for determination of finasteride in bulk and tablets. In chloroform, the λmax of the drug was found to be 245 nm. Using UV instrument (analytical), in this proposed method finasteride follows linearity in the concentration range 10 – 120 µg/ml with a correlation coefficient of 0.9993. Assay results were in good agreement with label claim. The methods were validated statistically and by recovery studies. The relative standard deviation was found to be 0.2319 with excellent precision and accuracy.

KEYWORDS: Finasteride, U.V.Spectrometry, chloroform.

Introduction

Finasteride , N- (1,1-dimethylethyl) –3-oxo-4-aza-5K-androst-1-ene-172-carboxamide. Finasteride, a type II 5 alpha reductase inhibitor, slowly reduces prostatic volume, Prostate growth and function is influenced by dihydrotestosterone.5alpha-reductase enzyme converts testosterone to dihydrotestosterone. Inhibition of 5 alpha reductase results in decreased level of dihydrotestosterone leading to reduction of prostate size. Finasteride has higher affinity for 5-R type II versus type I. According to the literature survey it was found that few analytical methods such as Visible, UV ,polarographic analysis, HPLC other methods were reported for Finasteride (Amer SM 2003, Amshumalli ,M.K et al., 2001 Constanzer ML et al., 1991 Carlucci G et al., 1997 ,Carlin JR et al.,1998,K.Ilango et al., 2002).

The objective of the proposed methods to develop simple and accurate method for the determination of Finasteride by UV spectrophotometric method in Pharmaceutical dosages forms.

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Research Article

Anti-hyperglycemic activity of methanolic extract of *Salacia fruticosa* leaves in alloxan induced diabetic rats

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ABSTRACT

The aim of the present study was to evaluate the anti hyperglycemic activity of methanolic extract of leaves of *Salacia fruticosa* (Family:Hippocrataceae) in alloxan induced diabetic rats. The hyperglycemic rats were divided into different groups and were treated with methanolic extract of *S. fruticosa* at a dose of 125 & 250mg/kg. Treatment with extract produced a significant dose dependent reduction in blood glucose levels and this anti hyperglycemic activity was comparable with the reference standard, metformin. The results of the present study revealed the anti-diabetic activity of methanolic extract of leaves of *Salacia fruticosa* in alloxan induced diabetic rats.

Keywords: *Salacia fruticosa;* diabetic; antihyperglycemic; alloxan

INTRODUCTION

Diabetis mellitus is a heterogeneous metabolic disorder characterized by hyperglycemia resulting from defective insulin secretion, resistance to insulin action or both [1]. Type 2 diabetes usually occurs in obese individuals and is associated with hypertension and dyslipidemia. Thus, the treatment aims to reduce insulin resistance and to stimulate insulin secretion. Herbal medicines have been used for the treatment of diabetic patients since long and they are currently accepted as an alternative therapy for diabetic treatment [1, 2]. However, in the indigenous Indian system of medicine good number of plants was mentioned for the cure of diabetes and some of them have been experimentally evaluated and active principle were isolated [3]. WHO (1980) has also recommended the evaluation of the effective of plants in conditions where there are no safe modern drugs. The ethnobotanical information reports state that about 800 plants may possess antidiabetic potential [5]. Recently the medicinal values of various plants extracts have been studied by many scientists in the field of diabetic research [6, 7]. The plant *Salacia fruticosa* (family:Hippocrataceae) is widely distributed throughout the India. The family Hippocretacea has number of species with Medicinal and commercial value, they have been used in Ayurvedic, Siddha and Folklore for various diseases.

EXPERIMENTAL

Extraction of plant material

The fresh leaves of *Salacia fruticosa*, were collected from Kanyakumari District of Tamil Nadu and the plant was taxonomically identified and authenticated as *Salacia fruticosa Heyne ex Lawson* by Dr. V. Chelladurai (Research Officer of Botany) Government Siddha Medical College, Palayamkottai, Tamil Nadu. The leaves were dried under shade and ground to a fine powder in a mechanical blender. The powder of the plant was initially extracted in a *Soxhlet apparatus* using methanol as a solvent for about 18hrs to get the methanol extract of *S. fruticosa* (MESF).

Phytochemical screening

The methanolic extract of *S.fruticosa* was screened for the presence of various phyto-constituents like steroids, alkaloids, terpenoinds, glycosides, flavonoids, phenolic compounds and carbohydrates [8,9].

Preparation of test samples

The test samples were suspended in 25% Tween 20 in distilled water. Metformin (0.5mg/kg) was used as reference control during the study. All the test samples were administered through oral

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New, simple and validated UV-spectrophotometric methods for the estimation of drotaverine hydrochloride in bulk and formulations

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ABSTRACT

New, simple and cost effective, accurate and reproducible UV-spectrophotometric methods were developed for the estimation of drotaverine hydrochloride (DHC) in bulk and pharmaceutical formulations. The drug was estimated at 242 nm in 100 mM hydrochloric acid (pH 1.2), 242 nm in methanol: 100 mM phosphate buffer pH 7.4 (25:75), and 243 nm in ethanol: 100 mM phosphate buffer pH 7.4 (25:75). Linearity range was found to be 2-18 μg mL^{-1} (regression equation: absorbance = 0.052 × concentration in μg mL^{-1} + 0.0163; r^2 = 0.9999) in the hydrochloric acid medium (pH 1.2), 5-25 μg mL^{-1} (regression equation: absorbance = 0.0347× concentraion in μg mL^{-1} + 0.0058; r^2 = 0.9999) in methanol: 100 mM phosphate buffer, pH 7.4 (25:75) and 7-25 μg mL^{-1} (regression equation: absorbance = 0.0435 × concentraion in μg mL^{-1} + 0.0002; r^2 = 0.9998) in ethanol: 100 mM phosphate buffer, pH 7.4 (25:75). The apparent molar absorptivity was found to be 2.22 × 10^4 l mol^{-1} cm^{-1}, 1.48 ×10^4 l mol^{-1} cm^{-1} and 1.88 × 10^4 l mol^{-1} cm^{-1}. The quantitation limits were found to be 0.23, 0.31 and 3.56 μg mL^{-1} in the respective media. These methods were tested and validated for various parameters according to ICH guidelines and USP.

Key words: Drotaverine hydrochloride, spectrophotometry, method validation, uv-method, ICH

INTRODUCTION

Drotaverine Hydrochloride (DHC) [1-(3,4-diethoxybenzylidene)-6,7-diethoxy-1,2,3,4-tetrahydroiso-quinoline] Figure 1, a hydrated derivative of papaverine, is an effective spasmolytic agent [1].

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In Vitro Antioxidant Activity of Some Novel Synthetic Mononuclear Ruthenium (II) Compounds

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Abstract: The present work was aimed that *in vitro* antioxidant activity of some novel synthetic mononuclear Ruthenium (II) compounds namely, Ru (1, 10-phenanthroline)$_2$(2-nitro Phenyl thiosemicarbazone)Cl_2 (compound R_1) and Ru (1, 10-phenanthroline)$_2$(2-hydroxy-phenyl thiosemicarbazone)Cl_2 (compound R_2) using [2, 29-azinobis-(3-ethylbenzothiazoline-6-sulfonic acid)] (ABTS), Ferric reducing antioxidant power (FRAP), *N, N*-dimethyl-*p*-phenylenediamine (DMPD), 1, 1-diphenyl-2-picryl hydrazine (DPPH) and Nitro blue tetrazolium (NBT) assays. The results concluded that both the compounds (R_1&R_2) exhibited a significant antioxidant activity. But compared to reference standards, R_1 was found to be better free radical scavenging activity than R_2.

Keywords: Antioxidant, ABTS, DMPD, DPPH, FRAP, NBT, Ruthenium compounds.

INTRODUCTION

Free radicals are atomic or molecular chemical species with unpaired electrons. These are highly unstable and can react with other molecules by giving out or accepting single electron [1] and involved in causing oxidative stress. Antioxidant compounds can deactivate and scavenge the free radicals by donating hydrogen atom or chelating metals [2].

Reactive oxygen species (ROS), like hydroxyl ($OH^·$), superoxide anion ($O2^{·-}$), nitric oxide ($NO^·$) and peroxyl ($RO_2^·$) are highly reactive molecules continuously produced during normal physiological events/ aerobic metabolism and are inactivated & removed by antioxidant defense mechanisms [3]. Under pathological conditions, ROS are overproduced and disturb the homeostasis of the intracellular milieu by reacting unfavorably with cellular macromolecules including DNA, proteins and lipids [4]. The imbalance between ROS and antioxidant defense mechanism leads to oxidative modifications in cellular membrane or intracellular molecules leads to oxidative stress, associated with many of the age related degenerative diseases including atherosclerosis, cancers, trauma, stroke, asthma, emphysema, arthritis, heart attack, dermatitis, retinal damage, hepatitis and liver cirrhosis [5, 6]. ROS are particularly involved in age related diseases of brain, for example Alzheimers disease(AD) and Parkinson's disease(PD), where the neuronal degeneration may occurs due to the aging brain's increased vulnerability to metabolic and extra metabolic sources of ROS, resulting in an increased rate of apoptotic cell death, as well as damage to the proteins, cell membrane lipids and nucleic acids [7].

Free radicals are identified as any molecule containing an odd number of electrons. Dietary antioxidants, such as the vitamins A, C & E act as free radical scavengers by "donating" an electron to provide chemical balance. Sometimes these protective mechanisms are found not to be sufficient when compared to the damage occurred to the body. Hence, the search for exogenous antioxidants is continuing [8]. Therefore much attention has been focused on the use of synthetic antioxidants to inhibit lipid peroxidation and to protect from damage due to free radicals. In view of searching for synthetic antioxidants, ruthenium complexes are attracting attention as potential chemotherapeutic agents against a variety of diseases. Several properties have been attributed to the ruthenium complexes like antitumor activity [9, 10], antioxidant activity [11-13], antinociceptive [14] and interference in the nitric oxide (NO) pathway [15]. They have also been studied for leishmanistatic [16] and antimicrobial activity [17]. The inclusion/ exchange of biologically-active ligands into organometallic complexes offer much scope for the design of novel therapeutic drugs with enhanced, targeted activity.

The main objective of present study was to evaluate antioxidant activity of novel synthetic ruthenium compounds *in vitro* using [2, 29-azinobis-(3-ethylbenzothiazoline- 6-sulfonic acid)] (ABTS), Ferric reducing antioxidant power (FRAP), *N, N*-dimethyl-*p*-phenylenediamine (DMPD), 1, 1-diphenyl-2-picryl hydrazine (DPPH) and Nitro blue tetrazolium (NBT) assays. These are common spectrophotometric procedures for determining the free radical scavenging activities of components. These chemical assays are based on the ability to scavenge synthetic free radicals ($DMPD^{·+}$, $ABTS^{·+}$, $DPPH^·$ etc.) using a variety of radical generating systems and methods for detection of the oxidation end point [18].

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