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RESEARCH PUBLICATIONS 2018

S.No	Faculty name	Title of the paper	Name of the journal	It is listed in UGC SCOPUS ,WEB Of Science	Link to abstract	Article count year wise
1.	Devala Rao G	Development And Validation Of Analytical Method For Standardisation Of Curcumin Using RP-HPLC Method In Prepared Extract	Research Journal of Pharmacy and Technology	Scopus preview - Scopus - Research Journal of Pharmacy and Technology	https://rjptonline.org/AbstractView.aspx?PID=2018-11-4-58	1
2.	Buchi N.Nalluri	Enantioselective Analysis Of Guaifensin In Bulk And Pharmaceutical Dosage Forms By Chiral Phase HPLC-PDA Method	Indian Drugs	Scopus preview - Scopus - Indian Drugs	https://doi.org/10.53879/id.55.02.11215	1
3.	Buchi N.Nalluri & M.Vijayalakshmi	Development Of Validation Of RP-HPLC PDA Method For The Estimation Of Sarpogrelate Hydrochloride In Bulk And Dosage Forms	Indian Drugs	Scopus preview - Scopus - Indian Drugs	https://www.researchgate.net/publication/326394784_Development_and_validation_of_RP-HPLC_PDA_method_for_the_estimation_of_Sarpogrelate_hydrochloride_in_bulk_and_dosage_forms	2
4.	Siva Reddy Challa, Anne Lakshmi Pavani, & Rajasree G	Ciprofloxacin Induced Stevens-Johnson Syndrome	Journal of Clinical and Diagnostic Research	Scopus preview - Scopus - Journal of Clinical and Diagnostic Research	DOI: 10.7860/JCDR/2018/32032.11063	3
5.	Buchi N.Nalluri	Novel Drug Delivery Approaches In Treating Pulmonary Fibrosis	Panminerva Medica	Scopus preview - Scopus - Panminerva Medica	DOI: 10.23736/S0031-0808.18.03428-6	1
6.	Lakshmi Sudeepthi	Naringin In A Combined Therapy With Phenytoin On Pentylenetetrazole-Induced Kindling In Rats	Epilepsy and Behavior	Scopus preview - Scopus - Epilepsy and Behavior	DOI:https://doi.org/10.1016/j.yebeh.2018.10.006	1
7.	Siva Reddy Challa & Krishna Sree N	Effect Of Pharmacist Mediated Counselling On Knowledge , Attitude And Practice (Kap), Health Related Quality Of Life(Hr-Qol) And Glycaemic Control In Diabetic Patients On Insulin Therapy	Journal of Clinical and Diagnostic Research	Scopus preview - Scopus - Journal of Clinical and Diagnostic Research	https://doi.org/10.7860/JCDR/2018/37334.12339	2

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8.	Siva Reddy Challa, Anne Lakshmi Pavani, Krishna Sree Nalla & Rajasree G	Practice Of Intra Venous (IV) To Oral Conversion Of Antibiotics And Its Impact On Length Of Stay In A Tertiary Care Hospital: A Prospective Study	Journal of Clinical & Diagnostic Research	Scopus preview - Scopus - Journal of Clinical and Diagnostic Research	DOI: 10.7860/JCDR/2018/31647.11246	4

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RJPT

RESEARCH ARTICLE

Development and Validation of Analytical Method for Standardisation of Curcumin Using RP-HPLC Method in Prepared Extract

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ABSTRACT:

Objective: The main objective of present work is to develop and validate simple, precise and accurate analytical method for identification of curcumin using RP-HPLC method in prepared extract.

Methods: Spectrophotometric determination was performed on a Perkin-Elmer UV-VIS Double Beam Spectrophotometer to know the maximum absorbance of the compounds. Chromatographic separation was achieved using merck C18 analytical column (5 µm, 250 mm x 4.6 mm, i.d). The optimized solvent system consisted of methanol, acetonitrile in the ratio of 30:70 v/v. The effluents were detected by means of UV detector at 415nm. The proposed method was validated in accordance with International Conference on Harmonisation (ICH) guidelines. **Results:** Linearity was observed at a concentration range of 2.5-15µg/ml with a regression equation of y = 77703x – 586.13 and correlation coefficient of 0.9993. The retention time was found to be at 1.72min by means of the proposed method. The method was validated according to ICH guidelines and was found to contain the %RSD values below 2% which shows that the method was precise, accurate and specific. **Conclusion:** The developed method was validated as per the ICH guidelines which show that the method is sensitive, simple, precise and accurate. Thus the method is applied for the identification of curcumin in prepared extracts.

KEYWORDS: Curcumin, Method Validation, Spectrophotometric method, RP-HPLC method.

INTRODUCTION:

Curcumin is a natural component of the rhizome of turmeric (Curcuma longa) and one of the most powerful chemo preventive and anticancer agents [1-6]. Its biological effects range from antioxidant, anti-inflammatory to inhibition of angiogenesis and is also shown to possess specific antitumor activity. The chemical name of curcumin is (1E,6E)-1,7-bis (4-hydroxy-3-methoxyphenyl)hepta-1,6-diene-3,5-dione with a molecular formula $C_{21}H_{20}O_6$ and molecular weight is 368.385 g/mol. It's highly soluble in methanol, ethanol and acetic acid but poorly soluble in water.

A detailed study on literature revealed that there is a need to develop a simple, precise and economic RP-HPLC method for the identification of curcumin. In the present study a novel, precise and accurate method has been developed to obtain reliable as well as reproducible results with less Relative Standard Deviation (RSD) than all other existing methods [7,8] and validated as per ICH guidelines.

MATERIALS AND METHODS:

Chemicals and reagent:

Curcumin (95%) was obtained from local market. Methanol and acetonitrile (HPLC grade) were purchased from E. Merck (India) Ltd., Worli, Mumbai, India.

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ENANTIOSELECTIVE ANALYSIS OF GUAIFENSEIN IN BULK AND PHARMACEUTICAL DOSAGE FORMS BY CHIRAL REVERSE PHASE HPLC-PDA METHOD

correct guaifenseir Guaifenesi

B Tharunkumar[a], P Kalyani[a], M Lakshmiprasanna[a] and Buchi N Nalluri[a]*

(Received 27 October 2017) (Accepted 18 December 2017)

ABSTRACT

A novel, accurate and precise chiral reverse-phase high pressure liquid chromatographic method was developed for enantioselective analysis of guaifenesin (GFN) in bulk and tablet dosage forms. Chiral separation was achieved on phenomenex Lux Cellulose-4 column (250×4.6mm, 5µ) using 0.02% Formic acid: Acetonitrile (90:10 v/v) as the mobile phase at a flow rate of 1mL/min at 230nm. The retention times of GFN enantiomers A and B was 15 and 16minutes respectively with good peak resolutions and showed good linearity in the concentration range of 10-50µg/mL ($R^2 > 0.999$). The developed method was validated as per the International Conference on Harmonization guidelines and the results were well within the acceptable limits. The percentage assay in tablet dosage form was found to be 98.8 and 98.2 respectively for enantiomers A and B and was with in the compendial specifications demonstrating the suitability of developed method for enantioselective analysis of guaifenesin racemic mixture.

correct guaife as Guaifenesi

Keywords: Enantioselective analysis, Guaifenesin, RP-HPLC, PDA Detector.

INTRODUCTION

The enatiomeric separation had become an area of interest in recent years as more than half of the drugs currently in use are chiral molecules and 88% of molecules that are recently marketed are as racemates[1-3]. Although these enantiomers are chemically identical molecular species, most of them exhibit marked variations in pharmacological and toxicological profiles[4]. In many case, one enantiomer will be the molecule with desired activity while the other can be the passive or some time can even be toxic[5]. Therefore, enantiomeric separation and analysis is important to eliminate the unwanted enantiomer, provide better therapeutic control and optimum treatment[6].

Several analytical techniques including both chromatographic (HPLC and Gas chromatography) and non-chromatographic techniques (like polarimetry, isotopic dilution, calorimetry, and enzyme techniques) were developed in recent years for enantiomeric analysis. Among them, the chromatographic techniques were widely insert the word "widely used" as they does not require pure samples for quantification and separation of enantiomers can be achieved unlike the non-chromatographic methods. Chiral HPLC coupled with variety of detectors is an attractive method for the enantiomeric analysis as it provides quick and precise quantifications and chiral separations compared to GC which is limited to only volatile compounds[7].

Guaifenesin (GFN) is an antitussive agent available in racemic form is widely used as expectorant in many cough suppressive formulations. It is chemically (RS)-3-(2-methoxyphenoxy) propane-1, 2-diol, with a molecular formula $C_{10}H_{14}O_4$ and of mass 198.2g/mol[8]. The structures of GFN and its enantiomers are shown in Figure I. Recent

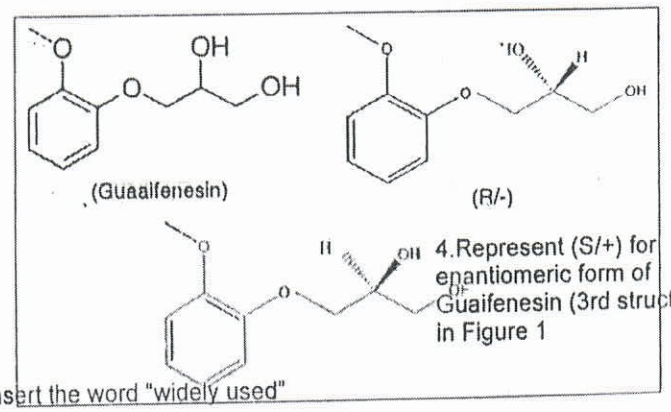

Figure I: Chemical structure of Guaifenesin and its enantiomeric forms (R,S)

correct guaaifenesin as Guaifenesin in Figure 1

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DEVELOPMENT AND VALIDATION OF RP-HPLC-PDA METHOD FOR THE ESTIMATION OF SARPOGRELATE HYDROCHLORIDE IN BULK AND DOSAGE FORMS

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https://doi.org/10.53879/id.55.04.10915

ABSTRACT

A simple and precise RP-HPLC method has been developed and validated for the estimation of sarpogrelate hydrochloride, an anti-platelet drug in bulk and pharmaceutical dosage forms. Sarpogrelate is an antagonist at 5HT2A and 5HT2B receptors which blocks serotonin induced platelet aggregation and has application in the treatment of diseases including diabetes mellitus, Raynaud's disease, angina pectoris and atherosclerosis. Chromatography was carried out on a Phenomenex C18 (250 x 4.6mm, 5µm) column with a mobile phase of 10mM ammonium acetate and acetonitrile (45:55% v/v). The flow rate was 1.2mL/min. The detection wavelength was carried out at 220nm. The retention time is 3.356 minutes for sarpogrelate hydrochloride. The linearity was found in the range of 10-50 µg/ml (R = 0.999) and % RSD is less than 2%. The mean recoveries obtained for sarpogrelate hydrochloride were in the range of 98.73-100.67%. The method is validated as per ICH guidelines and can be applied for the estimation of percentage purity in Sarpogrelate hydrochloride for quality control analysis in bulk and its dosage forms.

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DOI: 10.7860/JCDR/2018/32032.11063

Ciprofloxacin Induced Stevens-Johnson Syndrome

RAMACHANDRA R ANNAPUREDDY[1], T NAVYASREE[2], SIVA REDDY CHALLA[3], G RAJA SREE[4], A LAKSHMI PAVANI[5]

Keywords: Adverse drug reaction, Skin, Toxic epidermal necrolysis

A 65-year-old man was admitted to the hospital with high grade fever, loose stools and exfoliated hyperpigmented skin. His past history revealed that he had consulted a Registered Medical Practitioner (RMP) with the chief complaints of loose stools, vomiting and fever. He was then prescribed Ciprofloxacin 500 mg and Tinidazole 600 mg. Later, he observed hyper pigmented areas and some blebs over the skin, half an hour following administration of the same drug. Gradually, by the next morning, the pigmentation spread all over the body and the blebs increased in size. Then, he was rushed to a government hospital where he was administered Ringer Lactate (RL), Dextrose Normal Saline (DNS), IV CIFRAN (Ciprofloxacin), injection RANTAC (ranitidine), injection Diclofenac, injection Paracetamol, injection PIPTAZ (Pipercillin+Tazobactam) IV BD. Following administration of these drugs, he experienced painful exfoliation of skin [Table/Fig-1,2]. Due to administration of IV CIFRAN, the problem further aggravated. The causality assessment was carried out using Naranjo scale. The obtained causality score was 10. Causal relationship was found to be "Definite" as per Naranjo scale [Table/Fig-3]. Laboratory findings indicated that urine myoglobin was positive, LDH and SGOT were abnormally elevated whereas, serum creatinine and urea levels were moderately elevated [Table/Fig-4].

Hyperpigmented patches with exfoliated skin in the involved areas were left arm (9%), right arm (1%), right lower limb (2%), left lower limb (4%), back (1%), scrotum (1%), buttock (1%). Ulcer with serum discharge was positive, lips were dry and chapped, oral cavity white plaque positive on hard palate and glossitis positive. The total percentage of the skin involved was 19%. Nikolsky's sign was positive. The medical history and dermatological picture allowed us to make an initial diagnosis of SJS, likely triggered by the administration of ciprofloxacin.

[Table/Fig-1]: Hyperpigmented patches on chest.

[Table/Fig-2]: Exfoliated skin over lower limbs.

	Question	Yes	No	Do Not Know	Score
1.	Are there previous conclusive reports on this reaction?	+1	0	0	1
2.	Did the adverse event appear after the suspected drug was administered?	+2	0	0	2
3.	Did the adverse event improve when the drug was discontinued or a specific antagonist was administered?	+1	0	0	1
4.	Did the adverse event reappear when the drug was readministered?	+2	0	0	2
5.	Are there alternative causes that could on their own have caused the reaction?	0	+2	0	2
6.	Did the reaction reappear when a placebo was given?	0	0	0	0
7.	Was the drug detected in blood or other fluids in concentrations known to be toxic?	0	0	0	0
8.	Was the reaction more severe when the dose was increased or less severe when the dose was decreased?	+1	0	0	1
9.	Did the patient have a similar reaction to the same or similar drugs in any previous exposure?	+1	0	0	1
10.	Was the adverse event confirmed by any objective evidence?	0	0	0	0
		Total Score: 10			
	Causality of ADR is Definite as the total score exceeded 9				

[Table/Fig-3]: Causality assessment of adverse drug reaction as per Naranjo scale.
If total score is ≥9, ADR considered as Definite; if total score is between 5 to 8, ADR considered as probable; if total score is between 1 to 4, it is considered as possible; if total score is ≤0, it is considered as doubtful.

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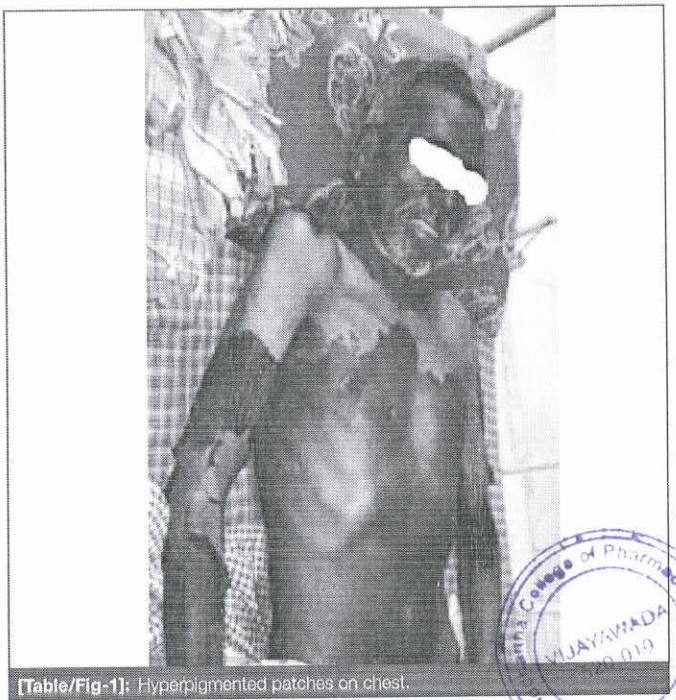

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Pharmacology Section

Ciprofloxacin Induced Stevens-Johnson Syndrome

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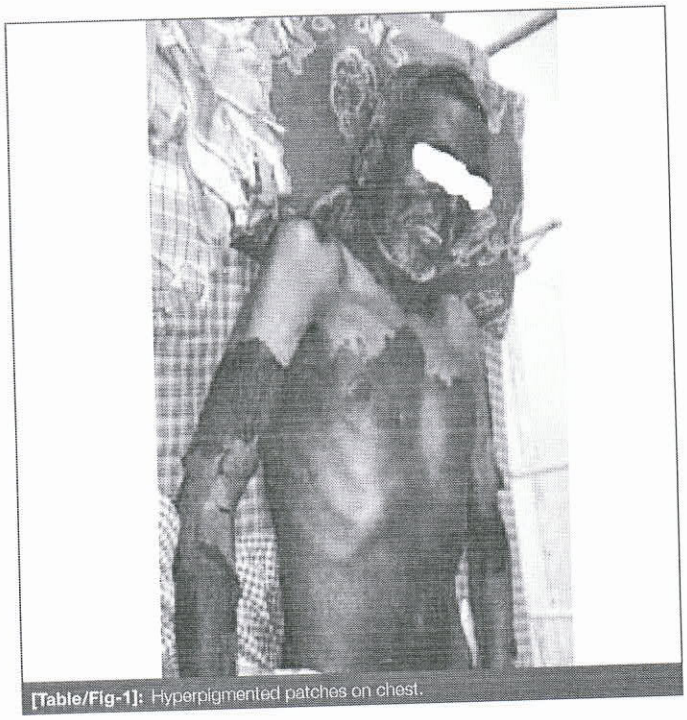

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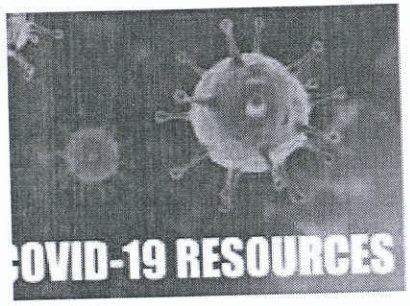

LETTERS TO THE EDITOR

Panminerva Medica 2018 December;60(4):238-40

DOI: 10.23736/S0031-0808.18.03428-6

language: English

Novel drug delivery approaches in treating pulmonary fibrosis

Kamal DUA [1, 2, 3] ✉, Rajendra AWASTHI [4], Jyotsana R. MADAN [5], Dinesh K. CHELLAPPAN [6], Buchi N. NALLURI [7], Gaurav GUPTA [8], Mary BEBAWY [1], Philip M. HANSBRO [1, 2, 3]

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Naringin in a combined therapy with phenytoin on pentylenetetrazole-induced kindling in rats

Phani Kumar Kola [a,*], Annapurna Akula [b], Lakshmi Sudeepthi Nissankara Rao [c], Ravi Chandra Sekhara Reddy Danduga [a], Abutalaha Mohammad [a], Srikanth Ineedi [d]

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ABSTRACT

Phenytoin (Dilantin) is an orally active, use-dependent voltage-gated sodium channel inhibitor and is a potent, economical, and widely used anticonvulsant agent. The objective of the present study was to investigate the effect of the combined treatment of naringin (40 mg/kg and 80 mg/kg) and phenytoin on prevention of seizure attacks, development of kindling, oxidative stress, cognitive impairment, and neurochemicals in the frontal cortex, temporal cortex, and hippocampus, and morphological changes in the hippocampus. Treatment with the high dose of naringin (80 mg/kg) along with phenytoin has shown to offer protection against seizures, development of kindling, and cognition enhancement through Y-maze test and improved % conditioned avoidance response (% CAR) through pole climbing test in pentylenetetrazole (PTZ)-induced kindling model. It has also been shown to improve neurochemical balance by elevating levels of Gamma amino butyric acid (GABA) and dopamine, decreasing levels of glutamate, oxidative biomarker (malondialdehyde (MDA)), and increasing levels of antioxidants (glutathione (GSH), superoxide dismutase (SOD), catalase (CAT), and total thiol and offered neuroprotection in the hippocampus. So, coadministration of naringin with phenytoin offers a potential treatment option for drug-resistant epilepsy and associated comorbidities. Interpretable research on flavonoids will support the clinical evidence for the recommendation of flavonoids as supplements with antiepileptic drugs (AEDs) for curtailing pharmacoresistant epilepsy and AED-associated comorbidities.

1. Introduction

Epilepsy is a common neurological disorder with spontaneous recurrent seizures, and the patients with frequent seizures are prone to injuries and psychosocial disabilities [1]. The ultimate goal in the therapy of epilepsy is to offer freedom from seizure without any adverse event. However, a number of antiepileptic drugs (AEDs) are available; the treatment of refractory epilepsy requires neuromodulation or surgical therapy, but practically, these two therapies cannot be recommended for the management of drug-resistant epilepsy [2–4]. Patients with epilepsy (20 to 40% of patients) experienced intractable epilepsy and are more prone to comorbid illness like psychiatric and cognitive because of chronic mono- or combinational therapy, unmanageable seizures, and underlying disease pathology of epilepsy [5]. Mechanisms intricated in refractory epilepsy were seizure-induced oxidative stress, neurodegeneration, and alteration in neurochemicals (GABA and glutamate) that are linked to epilepsy generation, propagation, and inhibition [6]. Singh et al. [7] and Rumia et al. [8] highlighted the role of free radicals in intractable epilepsy. Gamma amino butyric acid (GABA) and glutamate ratio alterations can exacerbate the neuronal excitability and excitotoxicity [9].

Phenytoin remains the highly used AEDs in the low and middle income countries across the world. Phenytoin is a cheap and widely used AEDs effective in the management of generalized tonic–clonic and partial seizures by limiting the spread of seizure activity and reducing propagation of seizure by acts on voltage-gated neuronal sodium channels. Phenytoin has long been indicated for its adverse events [10]. Preclinical and clinical reports of phenytoin acting against seizures indicated the negative effect on the control of seizures and development of drug-resistant epilepsy (kindling) due to its reactive metabolite-induced oxidative stress, and chronic administration of phenytoin further worsened the neurological comorbidities such as memory loss, depression, anxiety, and psychosis etc. [11,12]. Therefore, there is a need for the development of therapies that can ameliorate the epileptic condition, the development of drug-resistant epilepsy, and memory enhancement.

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Original Article

Pharmacology Section

Effect of Pharmacist Mediated Counselling on Knowledge, Attitude and Practice (KAP), Health Related Quality of Life (HR-QoL) and Glycaemic Control in Diabetic Patients on Insulin Therapy

CHARISHMA LAVU[1], MEHER PRIYANKA GONNABATHULA[2], SAI KUMAR MURAKONDA[3], SIVA REDDY CHALLA[4], C ANJANI KUMAR[5], SRAVYAGEETHIKA DUMMALAPATI[6], SUGUNA SAJJA[7], KRISHNA SRI NALLA[8]

ABSTRACT

Introduction: Education of the patients regarding KAP management has shown to improve patient outcomes in various health care settings across the world.

Aim: To assess the impact of patient counselling by the pharmacist on KAP, Health related Quality of life and glycaemic control.

Materials and Methods: A prospective observational study was conducted in hospitalised patients of various departments of the tertiary care hospital during the period of November 2016 to April 2017. Patient counselling was given by pharmacist at baseline visit and first follow-up (after three months). Patients were followed for six months with first follow-up at third month and with second follow-up at sixth month and KAP and HR-QoL were assessed using WHO-BREF QoL and KAP questionnaire respectively in all visits. Similarly, glycaemic control (HbA1C) values were noted at each visit.

Results: A total of 50 patients were recruited in the study. KAP score at baseline visit, follow up-1 and follow up-2 were found to be 87.92±7.82, 117.47±6.98 and 119.9±5.30 respectively. Data analysis indicated that KAP score was improved at follow up-1 ($p<0.001$) and follow up-2 ($p<0.001$). HR-QoL has been significantly improved in all the domains during follow-ups. However, more degree of significance was observed in Domain 2 (psychological) and Domain 4 (environmental). HbA1C levels at baseline visit, follow up-1 and follow up-2 were found to be 9.1±1.65, 8.27±2.79 and 7.66±1.719 respectively. HbA1C levels were significantly decreased at follow up-1 ($p<0.05$) and follow up-2 ($p<0.001$).

Conclusion: The study results support that pharmacist mediated patient counselling could remarkably influence on knowledge, attitude and practice and in turn patient's quality of life and glycaemic control.

Keywords: Diabetes Mellitus (DM), Glycaemic control, HbA1C, Insulin therapy, Patient counselling

INTRODUCTION

Diabetes mellitus is an important global health issue as the number of people with diabetes is rising every year, particularly of type 2 diabetes [1]. Diabetes mellitus would be the seventh leading cause of death in 2030 as per WHO projections [2]. The recent evidence from literature indicates that pharmacists are increasingly considered as a part of the health care system [3]. Pharmacist is considered as an integral part of multidisciplinary diabetes care team and pharmacists have a paramount role in providing care and education for patients [4]. The results of Iran based study had shown beneficial outcomes by pharmacist intervention in diabetes management [5]. Moreover, an Indian community based study demonstrated the positive impact of pharmacists counselling on clinical outcomes of glycaemic control and quality of life in Indian diabetic population [6]. A meta-analysis evaluating the effect of pharmacist intervention on glycaemic control in diabetic patients revealed that there was statistical and clinical significant association between pharmacist intervention and improvement in glycaemic control [7].

The aim of this study was to evaluate the impact of a pharmacist mediated patient counselling on KAP, Quality Of Life (QOL) and glycaemic control in diabetic patients on insulin therapy.

MATERIALS AND METHODS

Study Site and Duration

A prospective observational study was carried out for a period of six months (November 2016 to April 2017) in patients admitted to Dr. Pinnamaneni Siddhartha Institute of Medical Sciences and Research Foundation, a tertiary care teaching hospital at Chinaoutpalli, Gannavaram Mandal, Krishna district, Andhra Pradesh (India).

Ethical Consideration

The study protocol (Number: PG/160/2017) was approved by Institutional Ethics Committee of Dr. Pinnamaneni Siddhartha Institute of Medical Sciences and Research Foundation (Dr. PSIMS and RF) which was registered with CDSCO (Reg. No: ECR/804/Inst/AP/2016). All the participants were informed about the study details and informed consent was obtained before the initiation of study.

Experimental Design

A total of 66 patients were assessed for eligibility. A total of 50 patients who met the inclusion criteria were recruited into the study (recruited patients who visited to our hospital in first one week of initiation of the study). Experimental design is shown in a flow chart as per STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines [Table/Fig-1].

Study Procedure

Patient counselling: Counseling was provided to the patients regarding the disease and its potential complications, different options of treatment which include oral hypoglycaemics/tablets and insulin, about insulin and types of insulin, mixing technique of insulin before administration, administration of insulin, rotation of site of injection, educating about injecting technique, storage of vials, hypoglycaemia and its effects, preventive measures for

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Original Article

Pharmacology Section

Practice of Intravenous to Oral Conversion of Antibiotics and its Influence on Length of Stay at a Tertiary Care Hospital: A Prospective Study

YANNAMANI SATYA TEJASWINI[1], SIVA REDDY CHALLA[2], KRISHNA SRI NALLA[3], RAJA SREE GADDE[4], ANNE LAKSHMI PAVANI[5], VISWANADHAPALLI NEERISHA[6]

ABSTRACT

Introduction: Several studies have demonstrated the efficacy and safety of switching from intravenous to oral antibiotics in clinically stable patients. Early switch from Intravenous (IV) to Per Oral (PO) could be one of the factors that influence the Length of Hospital Stay (LOHS).

Aim: To evaluate the practice of switch from intravenous to oral antibiotics and its impact on the LOHS at a tertiary care hospital.

Materials and Methods: A prospective observational study was conducted over a period of six months from November 2015 to April 2016. The practice of conversion from IV to PO antibiotic therapy was assessed according to predefined criteria for clinical stability. Clinical end points such as day of IV to PO switch, LOHS and duration of antibiotic therapy were assessed.

Results: Results reveal that 43.68% of antibiotics were converted from IV to oral formulation while 56.32% of antibiotic courses were not converted from IV to oral. Out of all IV to oral conversions, sequential therapy was more commonly used than switch and step-down therapy. LOHS for patients had significantly ($p<0.05$) decreased following IV to oral conversion of antibiotics in comparison to LOHS for patients with non conversion of antibiotics from IV to oral formulation. Day of conversion was more delayed in switch therapy than two other modes of conversion.

Conclusion: Timely switching of antibiotics from IV to oral therapy could reduce the length of hospitalisation for patients.

Keywords: Intravenous to oral switch, Sequential therapy, Step-down therapy

INTRODUCTION

Infectious diseases are more likely to affect the population all over the world. Hence, antibiotic therapy has become crucial in the effective management of infectious diseases. Antibiotic therapy yield good results when they are administered by IV route. At times, one has to consider the concept of IV to PO conversion of antibiotic therapy. Antibiotics are considered suitable for IV to oral conversion if they have appropriate spectrum, high degree of activity against the presumed or known pathogen, and have good bioavailability. Many patients remain on expensive IV medications, even after they become able to take bioequivalent oral alternatives. Several studies have demonstrated the efficacy and safety of switching from IV to oral antibiotics in clinically stable patients [1,2]. One way of optimising antibiotic use is to switch earlier from IV to oral therapy, with the following advantages: i) benefits to the patient; ii) lower costs and; iii) reduced workload, e.g., reduced incidence of catheter-related infections, a shorter LOHS, a reduction in costs and an associated reduction in workload without sacrificing patient safety [3,4]. Multidisciplinary medical team shall consider the three important factors like proper patient selection, an appropriate therapeutic approach and patient health education for the successful conversion of IV to oral antimicrobial agents [2,5]. Infectious disease specialist shall evaluate the patient and explore the suitability of the patient for IV to oral switch. This eventually may lead to early discharge and reduce cost burden on the patient [6]. Earlier study results report that implementation of pharmacist mediated IV-PO dosage form conversion service found to be more effective in declining the proportion of inappropriate IV doses and associated costs [7].

The IV conversion to PO therapy can reduce length of hospital stay, healthcare costs and risk of complications related to IV access [8,9]. This conversion may be a "switch therapy", "sequential therapy" or "step-down" therapy. IV to PO switch programs are highly appropriate and more applicable to antibiotics such as fluoroquinolones (levofloxacin, moxifloxacin), tetracyclines (doxycycline, minocycline), macrolides (clindamycin), co-trimoxazole (sulfamethoxazole-trimethoprim), chloramphenicol, linezolid, metronidazole and antifungal drugs such as fluconazole, itraconazole and voriconazole [10]. According to some authorities, approximately 40% of patients starting on IV antibiotics are candidates for a switch to oral antibiotics after 2-3 days of therapy.

There are very few studies on the practice of IV to oral switch in clinical settings of Indian population [11]. Hence, present study aimed to evaluate practice of IV to oral conversion of antibiotics and its impact on length of stay in a tertiary care hospital.

MATERIALS AND METHODS

Study Design and Ethical Aspects

A prospective observational study was carried out for a period of six months (November 2015 to April 2016) in Dr. Pinnamaneni Siddhartha Institute of Medical Sciences and Research Foundation at Chinaoutpalli, Gannavaram Mandal, Krishna district, Andhra

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Original Article

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