



# **SANTHIRAM COLLEGE OF PHARMACY**

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## **3.3.1**

Number of research papers per teacher  
in the journals notified on UGC care  
list during the last five years

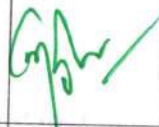
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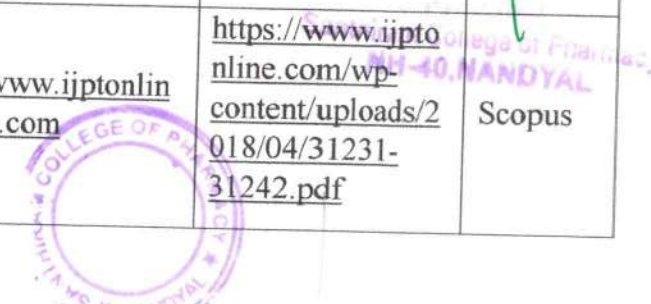


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### Research papers published per teacher in the Journals notified on UGC care list during AY 2017-18

S.No	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number		
							Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
1	Formulation And Optimization Of Extended Release Matrix Tablets Of Losartan Potassium Using Response Surface Methodology (RSM)	Y.Dastagiri Reddy	Pharmaceutics	Journal of Pharmaceutical Research International	2017	2456-9119	<a href="https://journaljpri.com/index.php/JPRI/index">https://journaljpri.com/index.php/JPRI/index</a>	<a href="https://journaljpri.com/index.php/JPRI/article/view/19512">https://journaljpri.com/index.php/JPRI/article/view/19512</a>	Web of science ESCI
2	A Validated Stability Indicating High Performance Liquid Chromatographic Method For Simultaneous Determination Of Aspirin And Omeprazole In Bulk And Tablet Dosage Form	N.Madana Gopal	Pharmaceutical Analysis	International Journal of Innovative Pharmaceutical Sciences and Research	2018	2347-2154	<a href="https://www.ijipr.com/index.php/IJIPSR">https://www.ijipr.com/index.php/IJIPSR</a>	DOI: 10.21276/IJIPSR.2018.06.11.746	No 
3	Formulation And In-Vitro Characterization Of Floating Microspheres Of Lamivudine	K. Samapath Kumar	Pharmaceutics	International Journal of Pharmacy and Technology	2018	0975-766X	<a href="http://www.ijptonline.com">www.ijptonline.com</a>	<a href="https://www.ijptonline.com/wp-content/uploads/2018/04/31231-31242.pdf">https://www.ijptonline.com/wp-content/uploads/2018/04/31231-31242.pdf</a>	Scopus





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4	A Prospective Observational Study On Prevalence And Risk Factors Of Anemia In A Tertiary Care Hospital	Dr.C.Bhrgava Reddy	Pharmacy Practice	International Journal of Research and Scientific Innovation	2018	2321-2705	<a href="http://www.rsisinternaional.org/">http://www.rsisinternaional.org/</a>	<a href="http://www.rsisinternaional.org/">http://www.rsisinternaional.org/</a>	web of science
5	A Case Study On Hydatid Cyst Of The Liver	Dr.C.Bhrgava Reddy	Pharmacy Practice	Inventi Journals	2018	0976-3848	<a href="https://www.inventi.in/journal/impact/139/InventiRapidPharmacyPractice">https://www.inventi.in/journal/impact/139/InventiRapidPharmacyPractice</a>	<a href="https://inventi.in/journal/article/139/25668">https://inventi.in/journal/article/139/25668</a>	UGC
6	A New Force Indicating RP-HPLC Method Development And Validation For The Simultaneous Estimation Of Pibrentasvir And Glecaprevir In Bulk And Its Tablet Dosage Form	D. Chinna Babu	Pharmaceutic al analysis	Pharmaceutic al Methods	2018	2229-4708 (print), 2229-4716 (Online)	<a href="https://www.phmethods.net">https://www.phmethods.net</a>	<a href="https://www.phmethods.net/articles/a-new-force-indicating-rphplc-method-development-and-validation-for-the-simultaneous-estimation-of-pibrentasvir-and-glec">https://www.phmethods.net/articles/a-new-force-indicating-rphplc-method-development-and-validation-for-the-simultaneous-estimation-of-pibrentasvir-and-glec</a>	Scopus
7	Novel Stress Indicating RP-HPLC Method Development And Validation For The Simultaneous Estimation Of Ertugliflozin And Sitagliptin In Bulk And Its Formulation	D. Chinna Babu	Pharmaceutic al analysis	ORIENTAL JOURNAL OF CHEMISTR Y	2018	0970-020 X	<a href="https://www.orientjchem.org/vol34no5/nove1">https://www.orientjchem.org/vol34no5/nove1</a>	<a href="http://dx.doi.org/10.13005/ojc/340543">http://dx.doi.org/10.13005/ojc/340543</a>	Scopus

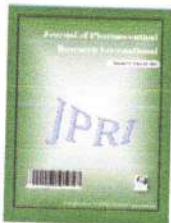
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8	A Case Study On Hydatid Cyst Of The Liver	Dr.C.Bhrgava Reddy	Pharmacy Practice	Inventi Journals	2018	0976-3848	<u>Inventi Rapid: Pharmacy Practice</u>	<u>Inventi Rapid: Pharmacy Practice</u>	UGC
9	A Prospective Observational Study On Prevalence Of Hypothyroidism In A Tertiary Care Teaching Hospital	V. Vijay Kumar	Pharmacy Practice	International Journal of Pharmacy and Pharmaceutical Science	2018	2656-0097	<u><a href="https://innovareacademics.in/journals/index.php/ijpps/article/view/24958/14861">https://innovareacademics.in/journals/index.php/ijpps/article/view/24958/14861</a></u>	<u><a href="http://dx.doi.org/10.22159/ijpps.2018v10i6.24958">http://dx.doi.org/10.22159/ijpps.2018v10i6.24958</a></u>	NO



## Formulation and Optimization of Extended Release Matrix Tablets of Losartan Potassium Using Response Surface Methodology (RSM)

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### Authors' contributions

This work was carried out in collaboration between all authors. Author YDR designed the formulation and RSM. Authors CMC and KRK supervised the evaluation of designed formulations. Author DD proposed the plan and supervised all the work. All authors read and approved the final manuscript.

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### ABSTRACT

The aim of this research work was to formulate and systematically evaluate *in vitro* performance of extended release matrix tablets of Losartan potassium. Tablets were prepared by direct compression method, applying Response Surface Methodology (RSM) by incorporating a 3-factor, 2-level Box-Behnken statistical design. Independent variables are the release retardant polymers such as HPMC K4M (X1), ethyl cellulose (X2), and sodium carboxy methyl cellulose (X3) and dependent variables are the percentage drug release in 0.1N HCL for 2 hours (Y1) and in 6.8 Phosphate buffer up to 24 hours (Y2) were studied. The Validation and optimization of study with 17 confirmatory runs indicated high degree of prophetic ability of response surface methodology with mean percentage error ( $\pm$  SD) as  $1.54 \pm 2.87\%$  and  $2.27 \pm 1.36\%$  drug release in 0.1N HCL

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## A VALIDATED STABILITY INDICATING HIGH PERFORMANCE LIQUID CHROMATOGRAPHIC METHOD FOR SIMULTANEOUS DETERMINATION OF ASPIRIN AND OMEPRAZOLE IN BULK AND TABLET DOSAGE FORM

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### Abstract

To develop and validate a novel reverse phase high performance liquid chromatography determination of Aspirin and Omeprazole in its Bulk and Pharmaceutical Dosage Forms. Examination of simultaneous determination is centered around the advancement of novel RP-HPLC systematic technique for the assurance of medication substance in strong oral dose shapes and their approval. Optimized chromatographic condition was established for the estimation of Aspirin and Omeprazole by using Xterra (4.6\*150mm 5 $\mu$ ) column, phosphate buffer (pH 3) and methanol (70:30% v/v) as mobile phase at a flow rate of 1.0 ml/min sustain a ambient temperature. The total analysis time was 8 minutes and retention of Aspirin and Omeprazole was found to be 2.254 and 3.059 min with an injection volume of 20  $\mu$ l. The system suitability parameters proved for optimized chromatographic conditions for Aspirin and Omeprazole were within limits. The developed method was showing good resolution and separation factors.

**Keywords:** High Performance Liquid Chromatographic, Aspirin, Omeprazole.

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## FORMULATION AND IN-VITRO CHARACTERIZATION OF FLOATING MICROSPHERES OF LAMIVUDINE

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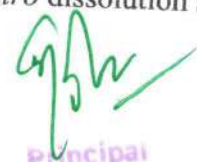
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### Abstract:

**Objective:** The investigation was concerned with the formulation and In-vitro characterization of floating microspheres of lamivudine by employing different concentrations of HPMC K100M in order to increase the gastric residence time of lamivudine and reduced dosage frequency. The drug exceptant compatibility studies were performed by FTIR &DSC. The gastro retentive floating microspheres were prepared by ionotropic gelation method. The prepared microspheres were evaluated for SEM analysis, in-vitro buoyancy studies and *in-vitro* dissolution studies. The compatibility of the drug with exceptant was confirmed by FTIR &DSC study. The *in-vitro* drug release studies revealed that the drug release was sustained up to 14hrs for formulation F5 containing HPMC K100M as release retardant polymer at a concentration of 1:2 to the drug. Using Higuchi's model and the Korsmeyer equation, the drug release mechanism from the floating microspheres was found to be Anomalous (non-Fickian) diffusion. The gastro retentive floating microspheres of lamivudine were successfully formulated and evaluated employing HPMC K100M as release retardant polymer. A slow and spread over drug release up to 14 hrs was observed with the formulation F5 with HPMC K100M at 1:2 concentrations to the drug. Thus current investigation was successful in extending the drug release and reducing the dosing frequency.

**Keywords:** Lamivudine, Floating microspheres, HPMC K100M, Floating lag time & *in-vitro* dissolution studies.





# A Prospective Observational Study on Prevalence and Risk Factors of Anemia in a Tertiary Care Hospital

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## Abstract:

**Back ground-** Anemia is a condition where hemoglobin levels in blood falls below the normal levels. RBC and their oxygen carrying capacity are insufficient to meet physiological needs. However for detecting anemia the WHO has recommended certain cutoff levels of hemoglobin for different ages below which the individual is consideration is anemic.

**Objectives:** To access the prevalence and risk factors of anemia in a tertiary care hospital.

**Materials and methods:** A Prospective observational study was conducted in Santhiram medical college and general hospital, Nandyal from July 2017 to December 2017, to study the prevalence of anemia and risk factors among population, where clinical data are collected by using case sheets to study anemic conditions were diagnosed based on complete blood picture (HB, MCV) levels, past medical history and dietary habits.

**Study design:** A total of 84 patients were evaluated for their anemia condition, out of which 69 patients showed positive results, to anemia. The prevalence and risk factors of anemia was summarized as count and percentage. A chi-square test was used to asses, the prevalence among different age groups-gender and risk factor identification based on diet, age group, past medical history.

**Results:** out of all the subjects 72.6% (n=61) are anemic, in this female subjects showed 78%,male subjects showed 28% and Risk factor assessment was done.

**Discussion:** In the current study we assessed the prevalence and risk factors of anemia in population residing in Santhiram general hospital, Nandyal. In our study prevalence of anemia is alarmingly high. Microcytic type is highly observed. Female subjects are more prone to anemia compared to male subjects. Anemia condition is common in the age group of 55-65 years. Chronic kidney disorder is the major risk factor for causing anemia. This was compared to World Health Organization criteria.

**Conclusion:** Our study proves that prevalence of anemia is more in female with age group 55-65 years in that Microcytic anemia is commonly observed. Our study advises that, age, traditional eating habits, past medical history of the subjects are main reason for arising anemia. Providing health and nutrition education will be the key involvements to prevent and control this huge health problem.

**Key words:** Anemia, prevalence and risk factors.

## I. INTRODUCTION

**B**lood is made up of fluid called plasma which contains RBC, WBC, Platelets, and proteins. Red blood cells are made up in bone marrow and release into blood stream every day. Hemoglobin binds to oxygen and takes oxygen from lungs to all parts of the body. To make red blood cells and hemoglobin constantly require a healthy bone marrow and nutrients such as iron and certain vitamins that obtain from food.

Iron deficiency is thought to be the most common reason for anaemia, although other conditions, such as folate, vitamin B12 and vitamin A deficiencies, chronic inflammation, parasitic infections, and inherited disorders can all cause anaemia.

Normal Hb levels:

AGE	g/dl
6 months to 6 years	11
6 years to 12 years	12
Above 12 years in male	13
Above 12 years in female	12
Pregnant women	11

Anemia is caused by blood loss, decreased or faulty red cell production and destruction of red blood cells.

In general, there are three types of anemia classified according to the size of the red blood cells. They are Microcytic anemia, normocytic anemia and macrocytic anemia.

**Dietary sources of iron:**

**Rich** : Liver, egg yolk, oyster, dry beans, dry fruits, wheat germ, yeast etc.

**Medium** : Meat, chicken, fish, spinach, banana, apple etc.

**Poor** : Milk and its products, root vegetables etc.

## II. METHODOLOGY

**Study design:** It is a prospective observational study

**Study site:** The present study was conducted in Santhiram medical college and general hospital, Nandyal.



# A Case Study on Hydatid Cyst of the Liver

D Neelufur<sup>1</sup>, T V Harsha Varun<sup>1\*</sup>, Bhargav Reddy<sup>1</sup>

**Abstract:** It is a cosmopolitan disease due to the embryonic shape of *Taenia* of the dog *Echinococcus granulosus*. It is the disease which puts a real problem of public health in our country. We reported a case of hydatid cyst of the liver in a 32-year-old man who originally lived in India and had migrated to Andhra Pradesh 2 years earlier. He presented with right upper quadrant pain and intermittent low-grade fever. Both sonography and computed tomography (CT) demonstrated a cystic lesion with vesicles at its periphery in segments 6 and 7 of the liver. A hydatid cyst was diagnosed. The patient underwent radical excision of the cyst with total removal without opening the wall. He also received pre- and postoperative oral mebendazole. Pathology showed a hydatid cyst consisting of three layers: the inner single nucleated germinal layer, the middle acellular laminated layer and the outer pericyst originating from inflammatory and hepatic cells. This case highlights that accurate preoperative diagnosis of hydatid disease can be made from personal history; typical sonography and CT study in non-endemic areas. A laparoscopic approach is safe in some situations. Percutaneous drainage with albendazole therapy is a safe and effective alternative treatment for hydatid cysts of the liver. Radical surgery with pre- and post-operative administration of albendazole is the best treatment option for liver hydatid cysts due to low recurrence and complication rates.

## INTRODUCTION

Hydatid cyst is a global parasitic zoonosis [1] that is endemic to countries in the Mediterranean, Turkey, Australia, North Africa, Australia, especially dogs, are the definitive hosts; ruminants may also host the organism. Sheep and goats are intermediate hosts, although *E. granulosus* can also be hosted by a wide range of vertebrates. The diagnosis of non-complicated HC of the liver is based on clinical suspicion. Ultrasonography and computed tomography are the most important diagnostic tools and are helpful for identifying any associated complications and for planning treatment. [2]

Treatment of HC of the liver can include medical therapy, percutaneous drainage or surgical intervention (via a conventional or laparoscopic approach).

## CASE PRESENTATION

A 32-year-old man was healthy until he experienced intermittent pain in the right upper abdomen, with low grade fever and headache for about 2 years prior to admission. When he visited our outpatient department, his body temperature was 36.5°C and he had mild right upper abdominal tenderness without evidence of liver enlargement on vertical span. His cardiovascular system and respiratory parameters were unremarkable. No other symptoms, such as nausea, vomiting, diarrhea, or skin rash, were noted.

## Patient Demographic Details

Santhiram Medical College and Santhiram General Hospital.

Patient name: Kiran. V, Age: 32 years, Sex: M.

IP.NO: 17/13326.

Date of admission: 14/11/2017.

Name of the consultant doctor: Dr. Lokendranath.

Admitted diagnosis: Hydatid cyst of the liver.

Date of discharge: 20/11/2017 (patient was relaxed with symptoms after surgery).

Area: Panyam, Occupation: Farmer.

## X-Ray Examination

Plain chest X-ray examination showed no abnormal findings. Due to the abnormal liver function test and right upper abdominal pain, abdominal sonography was performed. A cystic mass in the right lobe of the liver was revealed. The mass measured 6.1 × 5.5 cm, with multiple cystic components presenting a honeycombed appearance. Some echogenic material was seen in the center of the mass.

## MANAGEMENT

### Mebendazole - 200 mg

Preoperative oral mebendazole 200 mg four times daily was administered for 4 days. Right posterior segmentectomy (S6 and S7) of the liver revealed a cystic lesion measuring about 7 cm. Incisions in the lesion allowed visualization of an encapsulated unilocular cystic space containing daughter cysts filled with gel-like fluid.

The patient recovered uneventfully and there were no postoperative complications except for wound pain, which was treated conservatively. The patient was discharged in good health 2 weeks later. Long-term postoperative mebendazole 200 mg four times daily was prescribed. The patient was still well without imaging or clinical evidence of recurrent hydatid cysts 4 months after surgery.

## DISCUSSION

MBZ was the first drug used to treat hydatid disease. Later, ALB was introduced because of its superior absorption properties.

Hydatid disease is a parasitic tapeworm disease caused by the larval stage of *Echinococcus granulosus* or *Echinococcus multilocularis*. [3, 4] The liver is the most frequently involved organ in both forms, followed in frequency by the lung. [5, 6] However, these two species of *Echinococcus* are quite different, with different endemic regions and clinical manifestations. *E. granulosus* tends to produce a typical large, single, round or ovoid, well-defined hydatid cyst and is the more prevalent species. [7] It causes an irregular, small, fluid-filled cavity or an invasive spongy mass resembling an infiltrating malignant hepatic tumor, rather than a well-defined expansile cyst. [7, 8] There have been three sporadic reported cases of hepatic hydatid cysts

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# A New Force Indicating RP-HPLC Method Development and Validation for the Simultaneous Estimation of Pibrentasvir and Glecaprevir in Bulk and its Tablet Dosage Form

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## ABSTRACT

**Background:** A simple reversed phase high performance liquid chromatographic method was developed for the simultaneous estimation of the Pibrentasvir and Glecaprevir in bulk and its solid dosage form. **Materials and Methods:** The method was developed on water's C<sub>18</sub> column capitate 250X4.6 mm, 5 µm particle size, wavelength was fixed at 225 nm with photo diode array detection. The mobile phase was consisted mixture of 0.5 mM Ortho phosphoric acid buffer: Acetonitrile in the ratio of 75:25 v/v, pH 4.3 was adjusted with hydrochloric acid and flow of mobile phase through the column was maintained 1mL/min. **Results:** The retention times of Pibrentasvir and Glecaprevir were found to be 3.04 and 4.45 min respectively. The method was statistically validated with concern of precision, linearity, range and robustness of method was found for Pibrentasvir and Glecaprevir. The above method was afforded excellent percentage recovery was found to be 99.87-100.22% and 99.68-100.17% for Pibrentasvir and Glecaprevir respectively. The Limit of detection and Limit of quantification

were found 0.12 and 0.43µg/mL and 0.008 and 0.027µg/mL for Pibrentasvir and Glecaprevir. The forced degradation studies were performed. **Conclusion:** The method was developed and validated for the estimation of Pibrentasvir and Glecaprevir. The method was sensitive, precise, accurate, and robust, showed good linearity with different concentrations. The method is used for the routine analysis of Pibrentasvir and Glecaprevir in its bulk and pharmaceutical dosage form.

**Key words:** Pibrentasvir, Glecaprevir, RP-HPLC, Ortho phosphoric acid buffer.

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## INTRODUCTION

The combination of Glecaprevir and Pibrentasvir was highly efficacious and well tolerated in patients with HCV genotype 1 infection and prior failure of directly acting antiviral containing therapy; RBVco administration did not improve efficacy.<sup>1</sup> Although direct acting antiviral therapies for chronic HCV infection have demonstrated high rates of sustained virologic response, virologic failure may still occur, potentially leading to the emergence of viral resistance, which can decrease the effectiveness of subsequent treatment.<sup>2,3</sup> Glecaprevir is a next-generation HCV NS3/4A with potent pangenotypic activity. In enzymatic assays, Glecaprevir exhibited a high level of selectivity for HCV NS3/4A protease over human proteases. Glecaprevir is an HCV NS3/4A protease inhibitor, and Pibrentasvir is an NS5A inhibitor. They have been co formulated Glecaprevir and Pibrentasvir in clinical trials for the treatment of all six major HCV genotypes.<sup>4-6</sup> The treatment of HCV with glecaprevir/pibrentasvir leading to first global approval in the European Union and subsequent approval in the United States of America for chronic Hepatitis C Virus infection.<sup>7</sup> The chemical structures of Glecaprevir and Pibrentasvir were showed in Figures 1 and 2.

## MATERIALS AND METHODS

All the chemicals and reagents were of analytical grade. Water was double distilled and filtered with a membrane filter. Acetonitrile – Hihg Performance Liquid Chromatography grade (Merck, India), hydrochloric acid and ortho phosphoric acid (SD fine chem, India) were used to prepare mobile phase. Pharmaceutical grade standard drugs viz., Pibrentasvir and Glecaprevir were kindly gifted by Ajanta Pharma Limited, Mumbai, India. The combined tablet formulation contains 40 mg of Pibrentasvir

and Glecaprevir 100 mg of (Mavyret) purchased from local market of Kurmool.

### Preparation of standard solution

10 mg of Pibrentasvir and Glecaprevir were weighed and transferred to individual 10ml volumetric flasks with small quantity of mobile phase. The solutions were sonicated for 10 min and volume was made with mobile phase to give concentration 1000 µg/mL. This solution was further diluted with the mobile phase to get final concentrations of 80 µg/mL and 200 µg/mL working standard solutions for Pibrentasvir and Glecaprevir respectively.

### Preparation of sample solution

Twenty tablets were weighed and finely powdered. The average weight of tablets was determined. The powder equivalent to 10 mg of Pibrentasvir was weighed and transferred to a 10 mL volumetric flask. 10 mL of diluent was added to dissolve contents of tablets completely by using ultra sonicator for 10 min. The aliquot portion of the filtrate was further diluted to get final concentrations of 80 µg/mL of Pibrentasvir and 200 µg/mL of Glecaprevir. This solution was filtered through membrane filter. The 20 µL of this solution was injected in to High Performance Liquid Chromatographic system.

### Chromatographic Conditions

The mobile phase was consisted of 0.5 mM Ortho Phosphoric acid buffer: Acetonitrile in the ratio of 75:25 v/v and pH 4.3 was adjusted with hydrochloric acid. The mobile was filtered through 0.45µ membrane.



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## Novel Stress Indicating RP-HPLC Method Development and Validation for the Simultaneous Estimation of Ertugliflozin and Sitagliptin in Bulk and its Formulation

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### ABSTRACT

A selective, sensitive RP-HPLC method was developed for the simultaneous estimation of the Ertugliflozin (ETR) and Sitagliptin (SGT) in bulk and its dosage form. The separation and determination was carried on water's C18 column (250X4.6 mm, 5 µm particle size), retention times of Ertugliflozin and Sitagliptin were found to be 2.39 and 4.60 min. respectively. The wavelength was fixed at 215 nm with PDA detection. The mobile phase was consisted mixture of 0.5 mM potassium dihydrogen ortho phosphate buffer: Methanol in the ratio of 55:45 v/v, pH 5.3 was adjusted with HCl and flow of mobile phase was maintained 1mL/min. The calibration curve was linear and regression co-efficient (R<sup>2</sup>) value found to be 0.999 and concentration ranging from 37.5-112.5 and 250-750 µg/mL for Ertugliflozin and Sitagliptin respectively. The quantization limit and detection limit of the method were found 0.1 & 0.3 µg/ml and 0.4 and 1µg/ml for Ertugliflozin and Sitagliptin.

**Keywords:** Ertugliflozin, Sitagliptin, Reversed Phase High Performance Liquid Chromatography, Methanol.

### INTRODUCTION

A novel class of anti-diabetic drugs, which are inhibitors of dipeptidyl-peptidase IV (DPP4), which included sitagliptin, vildagliptin and saxagliptin<sup>1,2,3,4,5</sup>. Type 2 diabetes mellitus (T2DM)

is a progressive disease, for the treatment of many patients they require combination therapy to maintain over time glycemic levels<sup>6,7</sup>. Efficacy and safety of the addition of Ertugliflozin in patients with Type 2 diabetes mellitus inadequately controlled with metformin and Sitagliptin<sup>8,9,10</sup>. Ertugliflozin is an oral



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## A PROSPECTIVE OBSERVATIONAL STUDY ON PREVALENCE OF HYPOTHYROIDISM IN A TERTIARY CARE TEACHING HOSPITAL

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### ABSTRACT

**Objective:** To determine the prevalence of hypothyroidism in a rural population of Nandyal.

**Methods:** A prospective study was conducted in Santhiram medical college and general hospital, Nandyal from July 2017 to December 2017, to study the prevalence of hypothyroidism among the population.

**Results:** In this study, 1000 patients were evaluated for the thyroid functioning, among them n=104(10.4%) showing positive results in hypothyroidism. The positive 104 patients showed that n=63 (60.57%) of the population are in the age limit of 21-40. Out of the same population are n=11 (10.6%) are male and female are n=93 (89.43%). In age group distribution more prevalence was observed in 21-30 y of age group n=36 (34.61%). In this study, sub-clinical hypothyroidism was prevalent in females n=80 (76.92%) than males n=10 (9.61%).

**Conclusion:** Our study demonstrates that hypothyroidism was higher in a female with age group as 21-40 y and there is a significant prevalence of hypothyroidism in the study population.

**Keywords:** Hypothyroidism, Prevalence study, Chi-square test

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### INTRODUCTION

Worldwide about 1 billion people are estimated to be iodine deficient however, it is unknown how often this results in hypothyroidism [1].

The Prevalence of hypothyroidism in the world is about 4-8% [1].

Thyroid diseases are the commonest endocrine disorders worldwide, India too is no exception. It has been estimated that about 42 million people in India suffer from thyroid disease. Hypothyroidism is characterized by an overt state of myxedema, multisystem failure to an asymptomatic or sub-clinical condition with normal levels of thyroxine (T<sub>4</sub>) and triiodothyronine (T<sub>3</sub>) and mildly elevated levels of serum thyrotropin [2-4].

Serum TSH measurement is the most convenient and sensitive method for screening of hypothyroidism because there is a linear relationship with serum TSH and circulating thyroid hormone level. Hypothyroidism can occur if the thyroid gland fails to work properly or if the thyroid gland is not stimulated properly by the hypothalamus or pituitary gland [5-8].

The risk of hypothyroidism is higher in people with a family history of thyroid disease and those aged over 60 y. Hypothyroidism is most commonly affects women, from middle age onwards, but it can occur at any age [9, 10]. There are no national wide studies on the prevalence of hypothyroidism from India either in the pre or post iodization periods. Hence a large cross-sectional, comprehensive and prospective study was required to provide a clear picture of the evolving profile of thyroid disorders across the whole country, especially as the country is in the post iodization era [11]. The main aim of this study was to find out the prevalence of thyroid disorder among the population of Nandyal and to create awareness among the population about the disorder so that adequate management is possible which will prevent developing of further systemic complications related to abnormal thyroid status [12].

### MATERIALS AND METHODS

#### Study design

This was prospective, an epidemiological study conducted in Santhiram medical college and general hospital, this study was carried out from July 2017 to December 2017.

The study was reviewed and approved by Institutional Ethical committee (Registration No: IECR/05/SRMC.GH/AP/2017. A total of 104 cases of thyroid abnormality were found during this study period. The data was collected from the patients that referred to a central laboratory, of our hospital for thyroid function test, which includes T<sub>3</sub>, T<sub>4</sub> and TSH.

#### Enrollment criteria

All male or female subjects referred to a central lab for the thyroid function test were included. Participants were excluded if they were thyroid ablation persons and the subjects having the chronic systemic illness or if they were receiving drugs that could interfere with thyroid function test [13].

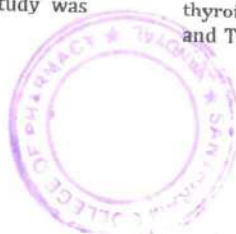
#### Study procedure

All the subjects underwent medical history assessment, general clinical examination, before enrollment including examination of thyroid glands. Evaluation of thyroid profile was done in the central clinical laboratory of our hospital.

Assess for thyroid hormone T<sub>3</sub>, T<sub>4</sub>, and TSH was performed by ECL technology. Based on previous thyroid history and current thyroid function test results participants were classified using following definitions like Sub-clinical hypothyroidism and overt hypothyroidism. The Prevalence of different thyroid function disorders was summarized as count and percentage. A chi-square test was used to determine the trends in the Prevalence of the disorder among different age group and genders.

### RESULTS

Hypothyroidism is a lifelong chronic condition particularly prevalent in women and the elders. The present study was initiated from July 2017 to December 2017; in this study, we assessed the prevalence of hypothyroidism in all age group of patients in Santhiram general hospital. There are several important findings from this prospective analysis of 1000, subjects who underwent screening for abnormal thyroid function. Based on T<sub>3</sub> (80-220ng/dl), T<sub>4</sub> (4.5-11.5µg/dl) and TSH (0.5-5mIU/l) observational levels, subjects with abnormal



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