

ASSESSMENT OF PRESCRIBING TRENDS IN GERD PATIENTS AND PATIENT COMPLIANCE IN VARIOUS HOSPITALS OF PAKISTANSaima Shahid^{1*}, Nafeesa Kanwal¹, Farwa Hameed¹ and Munaza Riaz²¹Pharm-D Lahore College for Women University.²Lecturer at Institute of Pharmacy, Lahore College for Women University.***Corresponding Author: Saima Shahid**

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ABSTRACT

Objective: The aim of the study was to assess the prescribing trends of PPI's and concomitant drugs in the Gastro esophageal reflux disease (GERD) patients and evaluation of success rate of drugs and patient compliance in hospitals of Punjab, Pakistan. **Material and methods:** Indiscriminate selection was made to select 300 patients diagnosed with GERD from various hospitals of Punjab, Pakistan. Patients and care takers were interviewed in very appropriate and agreeable manner to fetch the data on Questionnaire. The data was analyzed using statistical tools. Results were displayed in form of tables and graphs. **Results:** A total of 300 patients were observed in the outdoor and indoor departments of different tertiary care hospitals. Of the numbers of patients seen 10% patients had concurrent disease with GERD. 50% patients self-medicated themselves. Common symptoms associated with GERD were acid brash, dysphagia, heartburn and regurgitation. Most of the people (almost 55%) were using esomeprazole. Major side effect was GIT (Gastro Intestinal Tract) problems others include headache, allergy, pneumonia and osteoporosis. 19% patients have no effect on their quality of life, 37% feel better after treatment while 42% were curing from disease. 90% patients were following medication therapy and advice of physician. Only 10% patients were receiving pharmacist's consultation. **Conclusion:** Esomeprazole, Omeprazole and Pantoprazole with some concomitant drugs were frequently prescribing medicines to treat GERD. Highly prescribed PPI was Esomeprazole with some of these medicines like Domperidone, Itopride, Mucaine, Gaviscon and Becefol to the patients. Some patients were not following the prescription accordingly. Lack of consultation, drug-drug interaction, underuse of drugs, in-appropriate use of drugs were some factors which leads to explore the risks of PPI's. Appropriate treatment with PPI's and concomitant medicines is a need to treat this effectively as it could become fatal disease and may lead to ulcer and cancer.

KEYWORDS: GERD, Concomitant medicines with PPI's, Efficacy, Quality, Side Effect.**INTRODUCTION**

Gastro esophageal reflux disease (GERD) is a common, long-lasting, retrogressing disease, characterized by potentially serious esophageal, oropharynx, larynx, or airway complications when food content reflex back to them. NERD (Non-erosive esophageal reflux disease), sores, metaplasia in the cells of the lower portion of the esophagus, esophagus narrowing and esophageal adenocarcinoma are said to be sub-category of GERD.^[1-2]

Majorly GERD is accompanied by burning sensation in chest, bloating, nausea, burping and acid recapitulation. Some other but less common symptoms include cough, intermittent wheezing, vocal cord inflammation, atypical chest pain, dysphagia, and chronic sore throat.^[3]

No etiology of GERD is present. Reflux become worse when esophageal sphincter loses its physical strength or got debilitated. Factors which leads to GERD may

include low and unhealthy lifestyle, food which is spicy or may contains fat and acid, alcoholism and smoking. Leading medical conditions includes pregnancy, diabetes, Diaphragmatic hernia and overweight. Medications can also be reason for inducing GERD or making it worse. Blood pressure drugs, theophylline and nitrates are some example.^[4]

According to recent report gastro esophageal reflux disease is widely spreading throughout the world. Endemism is increasing day by day not only in under-developed countries but also in developed countries ranging 10% to 40%. Its progress has depicted above 5% in Asia. Similarly, in Iran and North America incidents from past few decades has been increasing. Anyone including infants, children, and pregnant women can have GERD. Comorbidity is more in men than women.^[5]

Patients may treat by different treatment option. First choice is to take medicine, may be over the counter

(OTC), prescribed medicines or both. Potency of medicines, time taken by medicines to suppress acid production within 24 h and time span for the treatment are main factors upon which anti-secretory drugs depends to heal esophagitis.^[6]

Antacids, H2RAs (Histamine H2 receptor antagonists) and PPIs (proton pump inhibitors) are remedies for GERD. Mild GERD symptoms are treated by using Antacids as it neutralized the acid in stomach to stop heartburn. If antacids are used then an H2RA or PPI are also required to treat the symptoms. H2RAs act by causing less acid production in stomach, hence, lesser will be heartburn anticipation. PPI's are widely used and prescribed medicine to avert heart burn. Its main action is to reduce acid production by acting gastric cells.^[7]

To treat acid-related symptoms PPI's are best choice. PPI's show different time span to achieve optimum inhibition of acid oozing by stomach. Patients with reflux esophagitis have decreased QOL because of heartburn symptoms. Therefore, it is crucial to quickly relief from symptom. Quick symptoms relief as well as high recovery rate is shown by the patients who are resistant to H2- receptor antagonist when treated with omeprazole.^[8-9]

Highly pronounced efficacy is intimated by Omeprazole in the long-term management of the patients. Fasting gastrin levels increase 2-fold during the initial treatment period but continued treatment does not induce any further elevation. No pathological changes are reported in the endocrine cell population of the gastric mucosa by omeprazole. When Pharmacokinetics of omeprazole was assessed and Drug-Drug Interaction was analyzed. It reveals that some co-administrated medicines with omeprazole make it low efficacious because of higher elimination rate, which means it has factual adverse impact on pharmacokinetics of many other medications.^[10-11]

As Pantoprazole having optimal tolerability, it significantly goes effective both for acute and long-term treatment. It binds irreversibly and specifically to the proton pump, thereby reducing gastric acid secretion. Evidently boots up the acid reflux-related symptoms and healing of esophagitis. When compared with histamine-2 receptor antagonist pantoprazole showed great improving effect on health, consequently increasing the quality of life. Over 100 clinical trials were performed regarding pantoprazole safety profile. It manifested the lower affinity for cytochrome P450 than older PPIs. Hence has a low incidence of drug interactions. There is no evident of correlation between Pharmacokinetics and patient age. It has effective and safe profile also been shown to be safe and effective in special patient populations, such as the elderly and those with renal or moderate liver disease.^[12-13]

Omeprazole is treated to form S-isomer which is Esomeprazole to achieve better control of intra gastric pH than omeprazole. It interacts with gastric H, K-ATPase, lies in the stomach's parietal cells, tends to decrease the production of acid. Hence, superior to omeprazole in preventing formation of stomach acid. Esomeprazole 20mg differs from omeprazole 20mg in maintaining pH above 4 for longer time span, displaying lower first-pass hepatic metabolism and slower plasma clearance, resulting in higher plasma concentrations, so, it provides better clinical efficacy. Which in turns, provides effective management of disease leading to improved patient's quality of life.^[14-17]

No noteworthy difference was indicated in comparative study between pantoprazole 40mg omeprazole 40 mg to cure esophagitis and symptom mitigation. No distinction was made between daytime and night-time heartburn. Using continuous intra-gastric pH-meter, it was demonstrated that equal doses of pantoprazole and omeprazole have similar potency to inhibit gastric acid secretion.

In a study pantoprazole (40 mg daily) and esomeprazole (40 mg daily) have an equivalent effect on intra-esophageal pH after repeated intake. Both were safe and well tolerated. Another study has reported similar effectiveness for esomeprazole 40 mg and pantoprazole 40 mg, but Esomeprazole shows great speed of symptom resolution. Hence, has more effectiveness.^[18]

GERD is retrogressive disease which may impact on patient's health and their quality of life, very seriously. Work efficiency is also reduced by it. If left untreated or a wrong treatment may also lead to esophageal cancer.^[19] Studies have showed the link between GERD and lung's cancer.^[20] So, under the circumstances every patient requires an appropriate long-term management plan. Therefore, it is very important to study effects of PPI's with concomitant medicines comprehensively on patient's health to prevent such hazards in future.

However, a very limited number of reports have been found in literature, with limited number of drugs and small sample size. No definite study on effectiveness regarding PPI's and concomitant drugs was found. Though, esomeprazole is found to be best choice among Proton Pump Inhibitors for treatment of GERD but its use with other concomitant medicines has not been studied well.

In this study, more than 300 patients with GERD symptoms were analyzed and the prescribing trends of PPI's and concomitant drugs is assessed. Esomeprazole is found to be the best choice to treat GERD and give best results when used with concomitant medicines than Pantoprazole and Omeprazole.

MATERIAL AND METHODS

A questionnaire based study was conducted for the period of 2 months (August 2015-September 2015). Data was collected by direct interview with patients and their care providers. Random Convenient Sampling Technique. The inclusion criteria, both male and female diagnosed patients of GERD with any age group prescribed with omeprazole, esomeprazole and pantoprazole with some concomitant medicines. The exclusion criteria, those GERD patients were not prescribed with omeprazole, esomeprazole and pantoprazole. Collected data was analyzed and percentages were calculated. Statistics was applied using Microsoft Excel and results were represented in the form of frequency tables and graphs.

RESULTS

A total of 300 patients were observed in the outdoor and indoor departments of different tertiary care hospitals. So, n= 300 including both male and female patients.

Basic History includes Family history any other acid related disease, Concurrent disease with GERD, Self-medication, lying habitat after taking meal and Smoking status. (Table1).

Table. 1: Basic History of Patients with GERD.

Characteristics	Responses %	
	Yes	No
Family history any other acid related disease	20%	80%
Concurrent disease with GERD	10%	90%
Self-medication	50%	50%
Lying habitat after taking meal	21%	79%
Smoking status	7%	93%

Common symptoms associated with GERD were acid brash, dysphagia, heartburn and regurgitation.

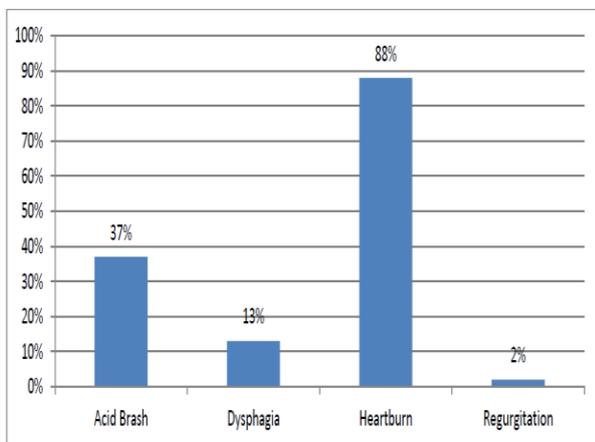


Figure. 1: Common Symptom of GERD.

Only 29% patients were taking balanced diet, while 71% patients were taking other from salty, oily, spicy diet, fruits and vegetables and fast food.

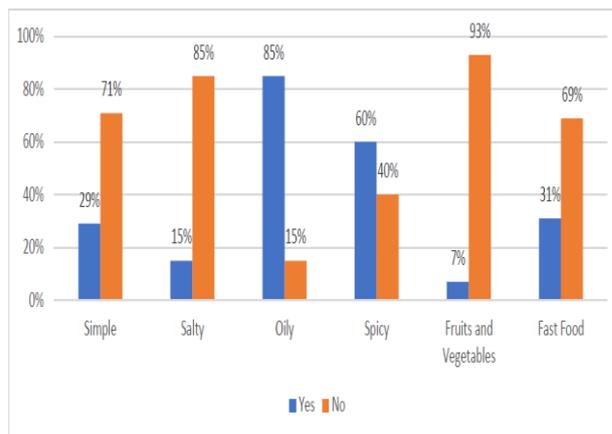


Figure. 2: Diet taken by patients.

50% patients self-medicated themselves. People who were taking medicine therapy mostly (55%) were using esomeprazole.

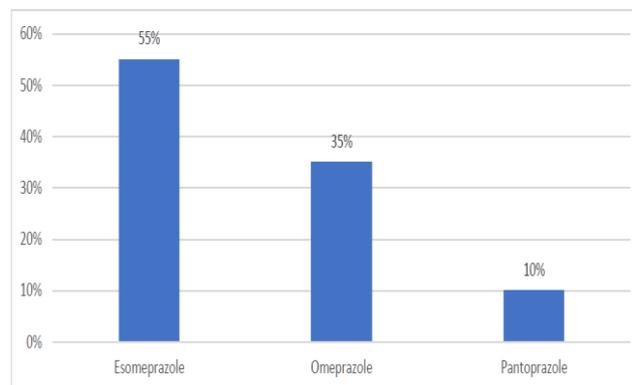


Figure. 3: PPI's Medicines.

With esomeprazole Domperidone was prescribed 28% Itopride 26%, Mucaine 33%, Gaviscone 17% and Becefol 2% to the patients.

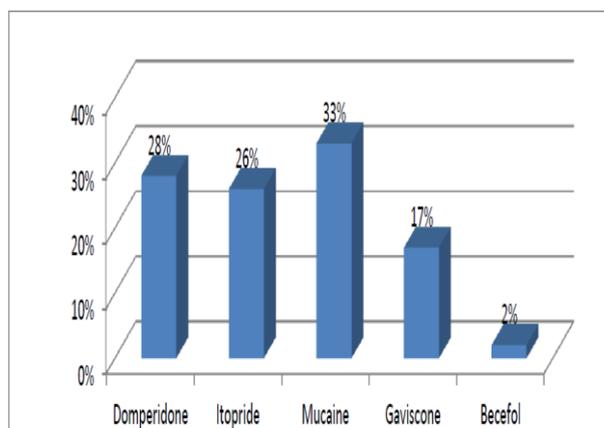


Figure. 4: Combination of drugs with Esomeprazole.

With omeprazole Domperidone was prescribed 30%, Itopride 5%, Mucaine 15% and Gaviscone 25% to the patient.

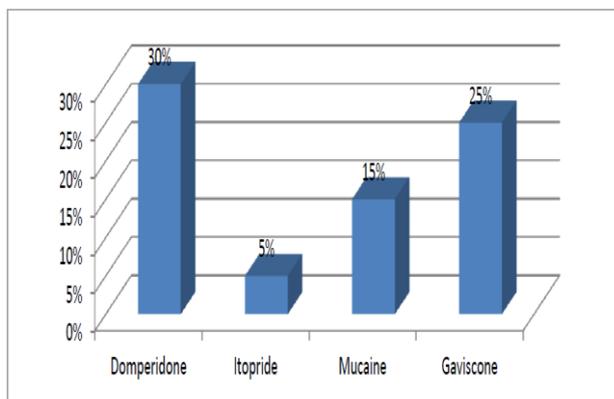


Figure. 5: Combination of drugs with Omeprazole.

With pantoprazole Domperidone was prescribed 3%, Itopride 5%, Mucaïne 5% and Gaviscone 2% to the patients.

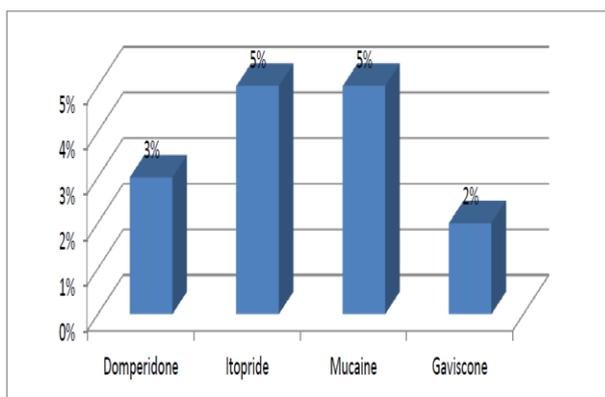


Figure. 6: Combination of drugs with Pantoprazole.

GIT problems (75%) were mostly reported side effects, others 21% patients were facing headache, 30% allergy, 1% pneumonia and 10% osteoporosis as side effect of Proton Pump Inhibitors and concomitant drugs.

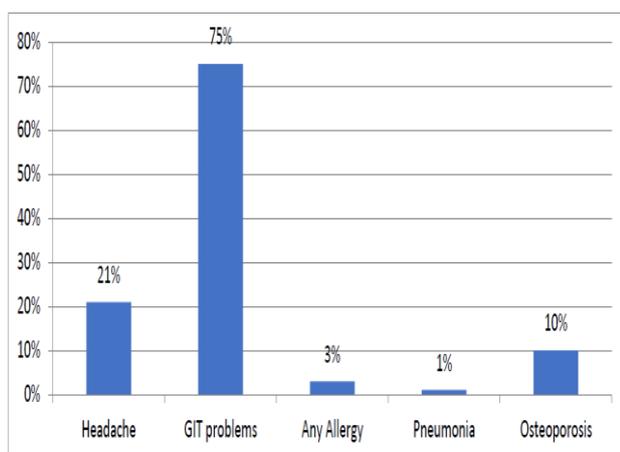


Figure. 7: Side Effects caused by PPI's.

Only 6% patients have undergone some major surgery. 20% patients have undergone endoscopy while 80% have not. No patient has undergone esophageal pH monitoring

and esophageal manometry. 30% patients were hospitalized previously. 19% patients have no effect on their quality of life, 37% feel better after treatment while 42% were curing from disease. Only 39% patients were satisfied with their treatment. 90% patients were following medication therapy and advice of physician while others did not follow anything. Only 10% patients were receiving consultation from pharmacist. (Table 2).

Table. 2: Treatment responses.

Characteristics	Responses %	
	Yes	No
Under gone major surgery	6%	94%
Pre-hospitalized	30%	70%
Following medication therapy	95%	5%
Satisfied with treatment	39%	61%
Consultation with pharmacist	10%	90%

DISCUSSION

During survey at different hospitals of Punjab, 300 patients of GERD were studied to collect data. Both males and females GERD patients having wide ranges of ages were enrolled.

Study shows that most patients have no family history of any other acid related disease which shows some patients have this disease genetically. With GERD only 10% patients have any concomitant disease while majority have no other disease with it. Half of the patients have a routine of self-medication. Only 7% patients were smoking with variation of smoking duration.

Duration of disease varies in every patient. Symptoms associated with GERD are 37% patients have acid brash, 13% have dysphagia, 88% heartburn while 60% have no other symptom associated with GERD. Diet has wide range of variations in patients 29% patients were taking simple diet, 15% salty diet, 85% oily diet, 60% spicy diet, 7% fruits and vegetables and 31% fast food while 71% patients were not taking simple diet, 85% salty diet, 15% oily, 40% spicy, 93% fruits and vegetables and 71% fast food. This un-balance diet may be a leading cause of disease.

21% patients were lying immediately after meal which is a cause to reflux back the food content into esophagus. Majority of patients have not undergone any major surgery. Only 20% have undergone endoscopy for the diagnosis of GERD while majority have not undergone any lab test.

Majority of patients were using medication for the treatment of GERD. PPIs were majorly prescribed for GERD. According to results omeprazole was prescribed to 35% patients, Esomeprazole to 55% patients and Pantoprazole to 10% with combination of antiemetics, prokinetics and antacids. Esomeprazole with other concomitant medicines was giving best results in controlling and healing symptoms. After that

Pantoprazole showed effectiveness but with slow healing process than Esomeprazole. Omeprazole showed more side effects than other PPI's.

19% patients have no effect on their quality of life, 37% feel better after treatment while 42% were curing from disease. Majority of patients were following medication therapy and advice of physician. 85% patients were visiting their physician once a month. 61% patients were not satisfied with their treatment and only 10% receive any consultation from pharmacist.

CONCLUSION

It is concluded that GERD is perpetuating, retrogressing disease that occasional stride but wide range of potentially serious esophageal and extra-esophageal complications can occur by taking unhygienic, fatty and acidic food.

It occurs in adults and older people. Both men and women can have GERD. The severity of the disease can be controlled with treatment. It may be inherited. It is more common among poor population. Life style modifications i.e. balanced and healthy diet and avoidance to oily, spicy and salty diet, not lying immediately after meal and exercise can help to treat GERD.

In management of GERD, PPIs are commonly prescribed and most commonly used PPIs are Omeprazole, Esomeprazole and Pantoprazole. These are used once a day before meal for better results. Patients should follow medication therapy and physician's advice for good outcome and relief from disease. Consultation with pharmacist is highly recommended. There is need to focus on the basics of prescribing trends of medicine to limit side effects and need of implementation of studies. As Esomeprazole gives best results with concomitant medicines than Pantoprazole and Omeprazole. Omeprazole should not recommend with other medicines, as it may lead to serious side effects.

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