Original Article

Proton Pump Inhibitors

Role of Proton Pump Inhibitors in Chronic Cough

1. Mushtaque Ali Memon 2. Mukhtiar Hussain Jaffery 3. Muhammad Shafi

1. Asstt. Prof. of ENT, 2. Asstt. Prof. of Medicine, 3. Asstt. Prof. of ENT, Liaquat University Hospital, Jamshoro

ABSTRACT

Objective: To see the effectiveness of Proton Pump Inhibitors in patients with chronic cough at Liaquat University Hospital.

Study Design: Observational study

Place and Duration of Study: This study was conducted at ENT Department, Liaquat University Hospital, Jamshoro/Hyderabad from November 2010 to October 2011.

Materials and Methods: Irrespective of age and gender 109 cases were recorded with history of chronic cough. After getting a detailed History all the cases were examined thoroughly for any pathology in Nose, Nasopharynx, Sinuses, Throat and Larynx in ENT department and then Sent to Physician to find or exclude the pathology in chest and Gastro intestinal tract. Required investigations were carried out in selected cases. All the cases after diagnosis were selected for PPI treatment for 30 days. Patient's response to the treatment was recorded. All the data regarding sign symptoms, clinical diagnosis, duration of cough and response of the cases to PPI treatment was entered on Performa for analysis.

Results: 109 cases were chosen in present study with chronic cough, majority of the cases 55/(50.45%) were found with age group of 41-60 years. Female were found in the big percentage 63/(57.79%), as compare to male 46/(42.20%), mostly 86/(78.89%) cases had duration of cough under VIII weeks.

39/(35.77%) cases were noted with feeling of lump in throat and this was commonest symptom. 57/(52.29%) patients were found with complete response, **35**/(32.11%) patients were noted with partial response and continued for some more days, while **17**/(15.59%) patients had not respond to PPI treatment and those were advised some other investigations and treatment.

Conclusion: PPI having prime role in cases of chronic cough. PPI caneasily be given on Clinical ground even without more investigations.

Key Words: Proton Pump Inhibitors, Chronic Cough, Liaquat University Hospital

Citation of article: Memon MA, Jaffery MH, Shafi M. Role of Proton Pump Inhibitors in Chronic Cough. Med Forum 2015;26(5):17-20.

INTRODUCTION

Chronic nonspecific cough, characterized as a non productive cough without identifiable respiratory illness or known reason.[1] Continuing for more than III to VIII wks.[2] Represents a critical weight to medicinal services expenses and impressively personal satisfaction. Gastroesophageal reflux disease (GERD) correspond to one of the three fundamental reasons of chronic cough (alongside asthma and upper respiratory cough/postnasal trickle disorder), concerned in up to 41% of chronic cough cases.[3] The clinical highlights of GERD-related cough incorporate indigestion, regurgitation, and/or compounding of cough after nourishments or medicines known to diminishing lower esophageal sphincter-pressure, with extra-esophageal indications, for example, hoarseness, wheezing, sore throat, pain of the chest, and globus likewise described. Whilst excellent GERD manifestations are occur in 6–10% of chronic cough cases, GERD is clinically quiet in up to 75% of patients with GERD-linked cough.[4] Diagnosis of GERD is often in light of the clinical reactions of cough to antireflux treatment as opposed to on target evaluations of GERD fundamentally. Besides, an expanded comprehension of the pathophysiology of GERD and specifically the particular occurrence of laryngopharyngeal reflux (LPR), has highlighted the multifaceted nature of this situation, with the requirement for individual cases appraisal and customizing of treatment getting to be obvious. Coughing may be incited by reflux through various systems. The regurgitation of gastric substance into the laryngopharynx can bring about mechanical or pH-delicate stimulation, through chronic swelling prompting the sensitization of peripheral nerves mediating cough.[5] This due to acid or nonacid (specifically, bile and pepsin) origin. It has been recommended that coughing can likewise be affected by "micro" or "noiseless" goal, brought on by the immediate initiation of tracheo-bronchial receptors by reflux entering the airway. Distal esophageal reflux might likewise induced cough due to vagal stimulation known as oesophago-bronchial reflex.[6] Ing et al.[7] showing infusing acid in throat of chronic cough cases

Correspondence: Dr. Mushtaque Ali Memon,
Asstt. Prof. of ENT, Liaquat University Hospital, Jamshoro
Cell No. 0333-2700192- 0313 2851728
Email: dr.sajidarain@yahoo.com
drmushtaqmemon@yahoo.com

developed coughing. Moreover whilst implantation of acid (contrasted with saline) into the throat of those GERD cases without chronic cough had no impact, a sharpened cough reflex to capsaicin was noted in that's GERD cases with chronic cough.[8]

An option pathophysiology is that coughing can actually be the causation in reflux: expanded intra-stomach pressure amid strenuous coughing incidents adversely affecting the lower esophageal sphincter, perhaps by method for a positive input loop.[9] Proton pump inhibitors (PPIs) are viewed as the medications of decision for acid linked illnesses as well as GERD.[10] Proton pump inhibitors (PPIs) have ordinarily been the pillar exact treatment for GERD-linked cough. A few times without history of GERD patient have a silent stimulation prompting chronic cough; these asymptomatic patients might likewise respond on PPI. Therefore purpose of this series is to assess effectiveness of PPI in cases with chronic cough at LUMHS.

MATERIALS AND METHODS

Study was performed in ENT department of LUH Jamshoro/Hyderabad in 2010-2011. Irrespective of age and gender 109 cases were recorded with history of chronic cough. All the cases having persistence cough lasting for III to VIII wks or more were selected. Patients with history of pregnancy or cardiac and pulmonary disorders, viral or fungal infections, Malignancies or Zollinger –Ellison syndrome, chronic alcohol or drug abuse and smokers, FB bronchus and patients on ACE inhibitors, patients with high grade or low grade evening rise fever and having cough with sputum, were excluded from study. After getting a detailed History all the cases were examined thoroughly for any pathology in Nose, Nasopharynx, Sinuses, Throat and Larynx in ENT department and then Sent to Physician to find or exclude the pathology in chest and Gastro intestinal tract. Required investigations like X-Ray Para Nasal Sinuses and Chest in all cases and Flexible Nasopharyngoscopy and Upper GI Endoscopy were carried out in selected cases. All the cases after diagnosis were selected for PPI treatment for 30 days. All the data regarding sign symptoms, clinical diagnosis, duration of cough and response of the cases to PPI treatment was entered on proforma, and analyze on SPSS version 16.0.

RESULTS

Total 109 patients were selected in this study with chronic cough majority of the cases 55/(50.45%) were found with age group of 41-60, 2nd most common age group was 21-40 years 35/(32.11%), while 10/(9.17%) cases were below 20 years of the age and 09/(8.25%) were above the 60 years of the age. Female were found in the majority63/(57.79%) as compare to male 46/(42.20%), mostly 86/(78.89%) cases had duration of cough under VIII weeks, while 23/(21.10%) cases were found with above VIII weeks of the duration. **Table: 1.**. Majority of the cases **39**/(35.77%) were noted with feeling of lump in throat, while Presentation as Sore throat, Post nasal drip, Retrosternal pain, Wheezing and Nocturnal regurgitation were found with percentage of **23**/(21.10%), **27**/(24.77%),**28**/(25.68%), **11**/(10.09%) and **19**/(17.4%) respectively, while **29**/(26.60%) cases were without any symptom. **Table: 2.**

After treatment 57/(52.29%), patients were found with complete response, **35**/(32.11%) patients were noted with partial response and continued for some more days, while **17**/(15.59%) patients had not respond to PPI treatment and those were advised some other investigations and treatment. **Table:3.**

Table No.1: Demographic characteristics of the cases. n= 109

Characteristics	#of cases/%
AGE GROUPS	
< 20	10/(9.17%)
21-40	35/(32.11%)
41-60	55/(50.45%)
> 60	09/(8.25%)
GENDER	
Male	46/(42.20%)
Female	63/(57.79%)
DURATION OF COUGH	
3-8 weeks	86/(78.89%)
More than 8 weeks	23/(21.10%)

Table No.2: Associated features of the cases n= 109

Features	#of cases/%
Sore throat	23/(21.10%)
Post nasal drip	27/(24.77%)
Retrosternal pain	28/(25.68%)
Wheezing	11/(10.09%)
Feeling of lump in throat	39/(35.77%)
Nocturnal regurgitation	19/(17.4%)
No other symptom	29/(26.60%)

Table No.3: Response of the cases to PPI n= 109

Response	#of cases/%
Complete responder	57/(52.29%)
Partial responder	35/(32.11%)
Not responder	17/(15.59%)

DISCUSSION

Cough is usual symptom of many diseases which is usually simple to diagnose but sometime it may become troublesome so that to exclude upper RTI and the chest infections also if the symptoms of GERD are marked but in some cases it is difficult due to masked effects. PPI if given in such cases proved to be an effective Drug for a symptomatic drug treatment of chronic cough. In this study female were found in the majority, 55/(50.45%) were found with age group of 41-60, 2nd most common age group was 21-40 years 35/(32.11%),

while 10/(9.17%) cases were below 20 years of the age and 09/(8.25%) were above the 60 years of the age. Baldi F et al,[11] reported majority of females and Most of the patients were middle-aged females and 25 (55.5%)

A study conducted by Riaz et al, showed percentage of Pakistani students having weekly episodes of heart burn is significantly higher than that in general Asian population.[21] In this series majority of the cases **39**/(35.77%) were noted with feeling of lump in throat, while Presentation as Sore throat, Post nasal drip, Retrosternal pain, Wheezing and Nocturnal regurgitation were found with percentage of **23**/(21.10%), **27**/(24.77%),**28**/(25.68%), **11**/(10.09%) and **19**/(17.4%) respectively.

D'Urzo A et al.[12] reported chronic cough is highlighted in GERD and unique side effect in up to 75% of patients. Adults having microaspiration, cough takes after manifestations of indigestion, disgorging, sour tast, pain of throat and hoarseness. In another study demonstrate that chronic cough was brought about by reflux in 21% patients. Moreover, the analysts demonstrated that constant hack was the sole displaying indication in GERD 43% of the time.[13] Otitis media might likewise be connected to GERD.[14]

Loehrl TA et al,[15] looking at otitis media with radiation in grown-ups exhibited that pepsinogen fixation was higher in center ear emission in patients who reported GERD manifestations, furthermore, treatment for GERD with PPIs gave a few cases with GERD symptom relief as well as decreasing the concentration of pepsinogen in the effusion. Also, research has demonstrated that cases having chronic rhinosinusitis have an expanded incidence of GERD, these chronic ceaseless rhinosinusitis manifestations in numerous patients are decreased after GERD treatment.[15]

Frequently, they display as hoarseness, recurrent throat passing, a postnasal trickle, abundance mucus, sore throat, a globus sensation, dysphasia, or cough. Chronic laryngitis and sore throat are connected with GERD in upwards of 60% of cases.[16] likewise; one study demonstrated that no less than 50% of patients giving laryngeal and voice issue had laryngopharyngeal reflux.[17] Less-regular GERD- linked laryngopharyngeal issue incorporate paroxysmal laryngospasm, subglottic stenosis, vocal-string granuloma, and cancer of the larynx and pharynx.[18]

After treatment 57/(52.29%), patients were found with complete response, **35**/(32.11%) patients were noted with partial response and continued for some more days, while **17**/(15.59%) patients had not respond to PPI treatment and those were advised some other investigations and treatment. Baldi F et al,[11] demonstrated that more than 80% of the patients those had full relief in cough on complete treatment and demonstrate the good response to PPI test. Several studies showed when chronic cough treated with PPIs 26%-43% patients got good relief.[19,20]

CONCLUSION

We concluded that PPI having prime role in cases of chronic cough. PPI can easily be given on Clinical ground even without more investigations. Patients with Chronic Pharyngitis responded well on antimicrobials with addition of PPI. All the physician and ENT specialist should understand the GERD on the time cough treatment. More research is required for complete effectiveness of PPI in the cases with chronic cough.

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Chang, Asher M. A review of cough in children. A Asthma 2001;38(4):299–309.
2. Chang B, Lasserson TJ, Gaffney J, Connor FL, Garske LA. Gastro-oesophageal reflux treatment for prolonged non-specific cough in children and adults. Cochrane Database of Systematic Reviews 2011;1:ID CD004823.
3. Morice H. Epidemiology of cough. Pulmonary Pharmacology and Therapeutics 2002;15(3): 253–259.
4. Irwin RS, French CL, Curley FJ, Zawacki JK, Bennett FM. Chronic cough due to gastroesophageal reflux: clinical, diagnostic, and pathogenetic aspects. Chest 1993;104(5): 1511–1517.
5. Koufman JA. The otolaryngologic manifestations of gastroesophageal reflux disease (GERD): a clinical investigation of 225 patients using ambulatory 24-hour pH monitoring and an experimental investigation of the role of acid and pepsin in the development of laryngeal injury," Laryngoscope 1991;101(4)1–78.
6. Irwin RS, Zawacki JK, Curley FJ, French CL, Hoffman PJ. Chronic cough as the sole presenting manifestation of gastroesophageal reflux. Am Rev Respir Dis 1989;140(5):1294–1300 .
7. Ing J, Ngu MC, Breslin ABX. Pathogenesis of chronic persistent cough associated with gastroesophageal reflux. Am J Respir Crit Care Med 1994;149(1):160–167.
8. Javorkova N, Varechova S, Pecova R, et al. Acidification of the oesophagus acutely increases the cough sensitivity in patients with gastro-oesophageal reflux and chronic cough. Neurogastroenterology and Motility 2008;20(2): 119–124.
9. Altschuler SM,. JT, Boyle T, Nixon TE, Pack AI, Cohen S. Simultaneous reflex inhibition of lower

esophageal sphincter and crural diaphragmin cats. Am J Physiol 1985;249(5):586–591.
10. Yeo M, Kwak MS, Kim DK, Chung IS, Moon BS, Song KS, et al. The novel acid pump antagonists for anti-secretary actions with their peculiar applications beyond acid suppression. J Clin Biochem Nutr 2006;38:1-8.
11. Baldi F1, Cappiello R, Cavoli C, Ghersi S, Torresan F, Roda E. Proton pump inhibitor treatment of patients with gastroesophageal reflux-related chronic cough: A comparison between two different daily doses of lansoprazole. World J Gastroenterol 2006;12(1): 82-88.
12. D'Urzo A, Jugovic P. Chronic cough. Three most common causes. Can Fam Physician 2002; 48:1311-6.
13. Irwin RS, Curley FJ, French CL. Chronic cough. Am Rev Respir Dis 1990;141:640–647
14. Sone M, Yamamuro Y, Hayashi H, et al. Otitis media in adults as a symptom of gastroesophageal reflux. Otolaryngol Head Neck Surg 2007;136: 19–22.
15. Loehrl TA, Smith TL. Chronic sinusitis and gastroesophageal reflux: Are they related? Curr Opin Otolaryngol Head Neck Surg 2004;12:18–20.
16. Poelmans J, Tack J. Extraoesophageal manifestations of gastrooesophageal reflux. Gut 2005;54: 1492–1499.
17. Koufman JA, Amin MR, Panetti M. Prevalence of reflux in 113 consecutive patients with laryngeal and voice disorders. Otolaryngol Head Neck Surg 2000;123:385–388.
18. Franco RA. Laryngopharyngeal reflux. Allergy Asthma Proc 2006;27:21–25.
19. Ours TM, Kavuru MS, Schilz RJ, Richter JE. A prospective evaluation of esophageal testing and a double-blind,randomized study of omeprazole in a diagnostic and therapeutic algorithm for chronic cough. Am J Gastroenterol 1999;94: 3131-3138.
20. Kiljander TO, Salomaa ERM, Hietanen EK, Terho EO. Chronic cough and gastro-oesophageal refl ux: a double-blind placebocontrolled study with omeprazole. Eur Respir J 2000;16:633-638.