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Research Article

**COMPARATIVE ANALYSIS OF SYMPTOM RELAPSE RATE
FOLLOWING TREATMENT WITH PROTON PUMP
INHIBITORS AND H2 RECEPTOR BLOCKERS****Afshan Siddiqui¹, Mahesh Kumar Lohano², Munir Ahmed Channa³
Aatir H. Rajput⁴, Muhammad Muneeb⁵, Abid Ali⁶, Anam Shaikh⁷ & Tahir Hanif⁸**Dept. of Medicine, Dow University of Health Sciences, Karachi¹Dept. of Medicine, Muhammad Medical College, Mirpurkhas^{2, 3}Liaquat University of Medical & Health Sciences, Jamshoro⁴Dept. of Medical Education - Indus Medical College, T.M.K⁵Karachi X-Ray & C.T Scan Centre, Karachi⁶Ziauddin University Hospital, Karachi⁷Combined Military Hospital, Jehlum⁸**ABSTRACT:**

Background:H2-receptor antagonists (H2RAs) and proton pump inhibitors (PPIs) are the primary classes of medication prescribed to treat gastroesophageal reflux disease (GERD) patients. Both classes of medication are safe and well tolerated, with a low risk of adverse events. However, they are often overused fearing symptom relapse following withdrawal of therapy. **Objective:**To study the symptom relapse rate following treatment withdrawal of PPIs and H2RAs and to compare the individual relapse rates. **Methods:**This cross-sectional, observational analysis was carried out at Indus Medical College Hospital, T.M.K from January 2018 to July 2018 on a sample of 377 patients aged 18 to 48 years (chosen via non-probability, consecutive sampling) presenting with GERD. After taking written informed consent from subjects, data was collected using a pre-structured, interview based questionnaire containing inquiries about basic sociodemographic details, lifestyle and eating habits and self-reported symptoms of GERD (epigastric pain and post-prandial distress). The patients were approached to inquire about self-reported symptoms post treatment withdrawal after every four weeks for 3 months. The data obtained was analyzed using MS. Excel 360 and SPSS v. 21.0. **Result:**A total of 377 subjects were enrolled during the study duration. The mean age of sample stood at 27 years (SD \pm 7.5) and most of the subjects (71.35%) were males. 53.58% of the subjects had been taking H2RAs or PPIs continuously for over 2 months while the remaining had been under said treatment for less than 2 months. Following treatment withdrawal, symptoms (meriting reinstating of therapy) relapsed on week 8 for PPIs and week 6 for H2RAs. The self-reported symptom score steadily rose after week 4 and peaked at week 12.

Conclusion: After carefully considering the results, it can be concluded that the symptom relapse rate for PPIs is considerably longer than H2RAs. Additionally, the PPI group enjoyed a lower self-reported symptom score for the entire withdrawal period.

Keywords: Proton Pump Inhibitor, H2 Receptor Antagonist, Gastro-Esophageal Reflux Disease, Symptom Relapse and Disease Recurrence.

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INTRODUCTION:

Seven percent of the entire global population reports the experience of daily heartburn and the prevalence is higher in areas (such as south-east Asia) with abundant dietary and life-style factors that make individuals more prone to the condition. Some of this heartburn is due to gastroesophageal reflux disease (GERD), a chronic condition caused by the reflux of gastric contents that can cause symptoms that substantially diminish quality of life. It can also lead to reflux esophagitis, esophageal strictures, Barrett's esophagus, and/or esophageal cancer. [1]

Initial treatment for symptomatic GERD includes raising the head of the bed, reduction of alcohol intake, weight loss, and avoidance of foods that cause symptoms. For more refractory cases, medical therapy with H2-receptor antagonists has been employed with a moderate degree of success. Treatment with proton pump inhibitors (PPI), lately, has appeared successful at healing lesions and ending acute painful episodes. [1, 2]

Unfortunately, the relapse of symptoms post-withdrawal of treatment after successful initial treatment is a common problem, and the management of patients with said condition presents a significant clinical challenge. To prevent symptom relapse, many patients undergo maintenance pharmacological therapy for prolonged periods however, that too is not advisable since it may lead to a fresher set of complications. [4]

Recent clinical trials have shown that acid repression therapy with H2RAs and PPIs is associated with endoscopic recurrence rates of 11% to 35%, whereas placebo is associated with recurrence rates of 75% to 92% over the course of 1 year. These results raise a number of questions regarding the medical management of patients after an index symptom episode has been addressed. Should maintenance therapy be given to patients from the outset? Or should therapy be interrupted until patients suffer another relapse? If maintenance therapy is to be delayed, should it be given after the first recurrence

following the resolution of an acute episode, or should it be given after the second recurrence? What are the quality-of-life implications of these treatment decisions? [5, 6]

The decision regarding whether and how to prescribe maintenance medication has a number of adverse reactionary and economic consequences. Both the drugs themselves and the costs of managing recurrences can be expensive. In this era of cost constraint in many areas of medical care, decisions regarding the use of maintenance therapy should be considered carefully in light of the potential costs and benefits involved. [7, 8]

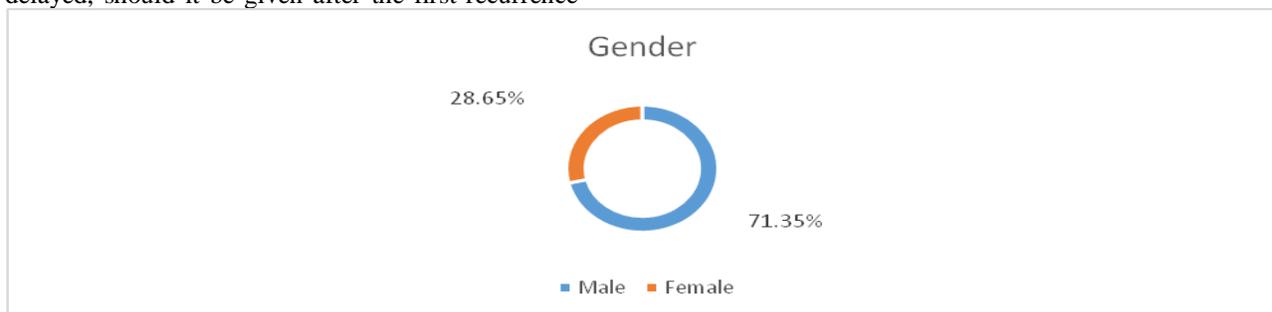
In this research, we study the symptom relapse rate following treatment withdrawal of PPIs and H2RAs and to compare the individual relapse rates, in an attempt to provide baseline data needed to address many of the aforementioned questions that medical community seeks.

METHODOLOGY:

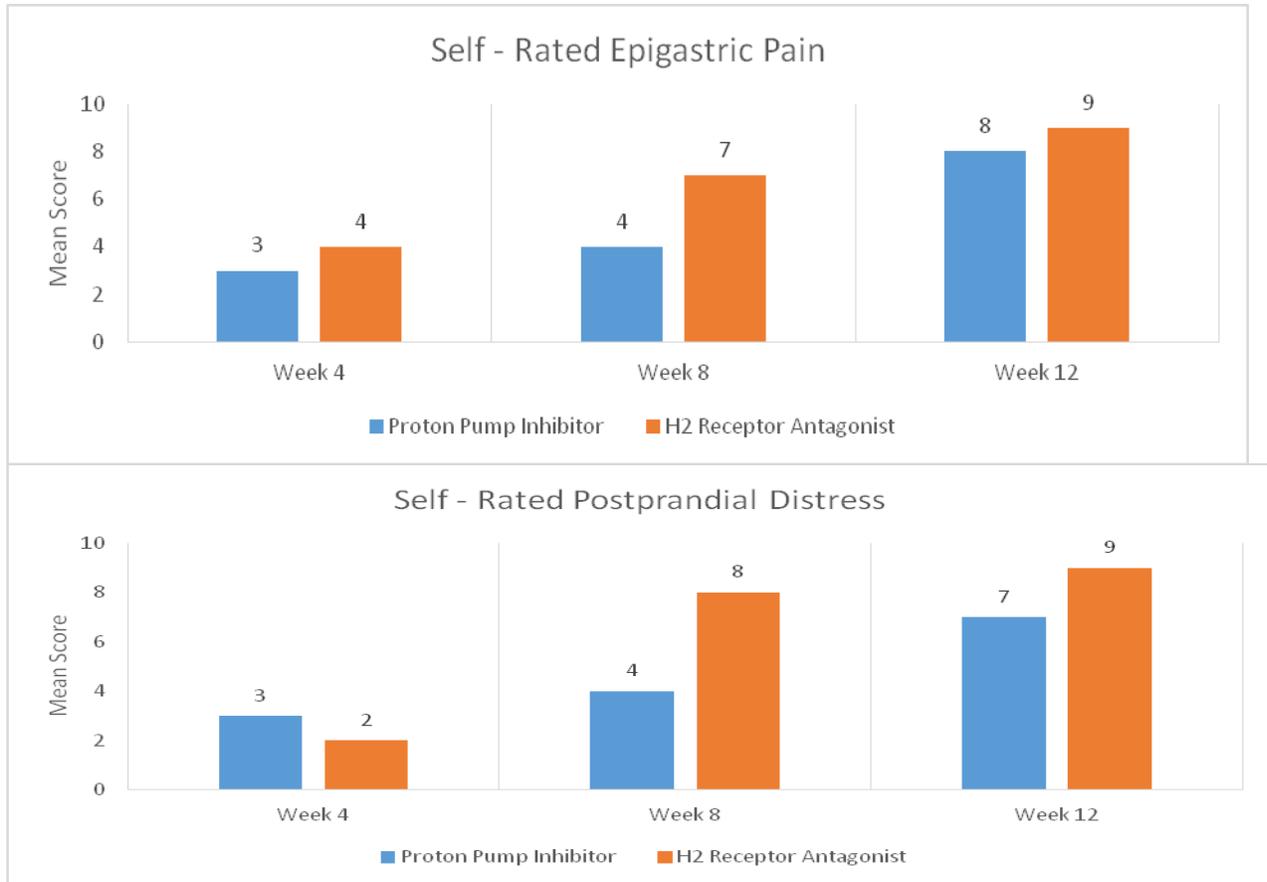
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RESULTS:

A total of 377 subjects were enrolled during the study duration. The mean age of sample stood at 27 years (SD \pm 7.5) and most of the subjects (71.35%) were males.



53.58% of the subjects had been taking H2RAs or PPIs continuously for over 2 months while the remaining had been under said treatment for less than 2 months. Following treatment withdrawal, symptoms (meriting reinstating of therapy) relapsed on week 8 for PPIs and week 6 for H2RAs. The self-reported symptom score steadily rose after week 4 and peaked at week 12.



DISCUSSION:

Symptoms pertaining to GERD last for prolonged periods and can profoundly impinge on an individual's quality of life. Some form of preventive treatment is often required to reduce a patient's symptoms. In this study, we examined the symptom relapse rate of two of the most successful treatment methods (H2RAs and PPIs). [9]

Literature states that the efficacy of medical treatment depends on the ability to increase and maintain the intra-gastric and intra-esophageal pH above 4.0 over the 24-h period. H2RAs are limited in their ability to inhibit postprandial gastric acid secretion and are ineffective in controlling reflux symptoms and healing the underlying pathology. In contrast to H2RA, proton pump inhibitors block the final step of acid secretion, resulting in a profound and long-lasting acid suppression regardless of the stimulus. [10, 11]

Results from 33 randomized clinical trials with over 3000 patients showed that symptomatic relief could be anticipated in 83% of proton pump inhibitors-treated patients compared with 60% of patients receiving H2RAs. Previously there have been several systematic reviews and meta-analyses of clinical trials assessing the effects of medical treatments however, none have explored the protective effects after treatment withdrawal and symptom relapse rate pertaining to each treatment in a direct comparison. [12]

It is known that individual proton pump inhibitors differ with respect to the onset of action and duration of effect because of the variability in their bioavailability. Although the agent used in this study (omeprazole) has a relative lower bioavailability than other proton pump inhibitors, which may contribute to the over-all low protective effect than that reported in literature. [13]

CONCLUSION:

After carefully considering the results, it can be concluded that the symptom relapse rate for PPIs is considerably longer than H2RAs. Additionally, the PPI group enjoyed a lower self-reported symptom score for the entire withdrawal period.

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