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Expert Perspectives on the Prescription Practice of Esomeprazole Alone or in Combination with Domperidone for Acid Peptic Disease Management in Indian Settings

Manjula S [a++*] and Krishna Kumar M [a#]

[a] *Department of Medical Services, Micro Labs Limited, Bangalore, Karnataka, India.*

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Objective: To gather expert perspectives on the use of esomeprazole monotherapy or its combination with domperidone for managing acid-peptic disease (APD) in routine Indian settings.
Methods: This cross-sectional study employed a 24-item questionnaire to gather expert opinions on managing APD. The survey covered topics such as prescription practices, clinical observations, preferences, and experiences with esomeprazole alone and in combination with domperidone for routine APD management. Descriptive statistics were used to analyze the gathered data.

[++] *Sr. Vice President;*
[#] *Sr. General Manager;*
**Corresponding author: E-mail: drmanjulas@gmail.com;*

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Results: This study involved 324 participants, and nearly half (48.15%) of them reported a 15–25% patient diagnosis rate of APD in clinical practice. Approximately 62% of respondents indicated equal gender susceptibility to gastric ulcers, affecting both urban and rural populations (56.48%). Around 40% of the clinicians indicated 46-60 years as the age group most affected by gastric ulcers. About 44% reported irregular and unhealthy eating habits as common risk factors. Most participants (90.74%) favored proton-pump inhibitors (PPIs), with 91% preferring esomeprazole for APD treatment. Nearly half of the clinicians (52%) reported that non-steroidal anti-inflammatory drugs (NSAIDs) induced gastritis in 10-20% of cases.

Conclusion: This study underscores the prominent role of esomeprazole, both alone and in combination with domperidone, in the management of APD in Indian clinical settings. The strong preference for esomeprazole, highlighted by its superior acid control and low incidence of side effects, corroborates its efficacy and reliability.

Keywords: Acid peptic disease; gastroesophageal reflux diseases; proton pump inhibitors; esomeprazole; gastric ulcer; peptic ulcer disease (PUD); domperidone.

1. INTRODUCTION

Acid peptic disorders (APD) arise from distinct yet interconnected mechanisms that either increase acid production or reduce the protective capabilities of the mucosal lining [1]. Typically, it encompasses two conditions: gastroesophageal reflux disease (GERD) and peptic ulcer disease (PUD) [2].

The global burden of GERD and PUD has seen notable increase over recent decades. From 1990 to 2019, the global prevalence of GERD rose significantly by 77.53%, reaching 783.95 million cases. Over the same period, the prevalence of PUD increased by 25.82%, totaling approximately 8.09 million cases worldwide in 2019. In addition, there was a marked decrease in global morbidity and mortality rates related to PUD during this timeframe [3-5]. PUD impacts approximately four million individuals globally each year, with an estimated lifetime occurrence rate of 5−10% among the general population [6].

GERD prevalence in India varies widely, from 7.6% to 30%, with most studies reporting rates below 10%. In northern urban populations, GERD affects 16.2%, similar to industrialized countries. In rural areas, 10.7% suffer from GERD, while in southern India, prevalence reaches 22.2%. PUD has a point prevalence of 4.72% in India, with a lifetime prevalence of 11.22%. Duodenal ulcers outnumber gastric ulcers by a ratio of 17.1:1 and peak at 28.8% incidence in individuals during their fifth decade of life [7-11].

Esomeprazole, a newly developed proton-pump inhibitor (PPI), has demonstrated superior control of intragastric pH compared to other PPIs. PPIs function by irreversibly inhibiting the hydrogen/potassium adenosine triphosphatase enzyme system (H+/K+ ATP-ase), commonly known as the proton pump, located within the gastric parietal cell. Its efficacy in providing symptomatic relief and promoting healing of mucosal damage establishes it as a key therapy in managing APD [12]. Domperidone, a widely recognized prokinetic antiemetic, acts as a dopaminergic blocker to enhance lower esophageal sphincter pressure and stimulate gastric motility. This dual action facilitates faster gastric emptying and reduces reflux symptoms, making domperidone particularly effective in relieving symptoms of dyspepsia and GERD [13].

The combination of esomeprazole with domperidone is often considered when patients present with symptoms of acid reflux or dyspepsia accompanied by delayed gastric emptying. Domperidone helps enhance gastric motility and transit, complementing the acid-suppressing effects of esomeprazole to provide comprehensive symptom relief. This survey-based study aims to investigate the prescription practices of esomeprazole, whether used alone or in combination with domperidone for managing APD in Indian clinical settings.

2. METHODOLOGY

We carried out a cross sectional, multiple-response questionnaire-based study involving physicians with expertise in managing APD patients in the major Indian cities from June 2023 to December 2023. The study was conducted after receiving approval from Bangalore Ethics, an Independent Ethics Committee which was

recognized by the Indian Regulatory Authority, Drug Controller General of India.

An invitation was sent to leading gastroenterologists in managing APD in the month of March 2023 for participation in this Indian survey. About 324 doctors from major cities of all Indian states representing the geographical distribution shared their willingness to participate and provide necessary data. Clinicians were given the option to skip questions at their discretion and were instructed to complete the survey independently, without consulting peers. Prior to participation, all respondents provided written informed consent. Unanswered questions were treated as non-responses.

The questionnaire booklet titled GEMINI-2 (GERD Management in Indian patients-2) study was sent to the physicians who were interested to participate. The GEMINI-2 study questionnaire comprised 24 questions aimed at gathering current feedback, clinical observations, and specialist experiences in managing acid-peptic disease using esomeprazole alone or in combination with domperidone in typical clinical settings.

2.1 Statistical Analysis

Descriptive statistics were employed for data analysis, using percentages to illustrate the distribution of categorical variables, showing both the frequency and corresponding percentages for each variable. Graphs and pie charts were generated using Microsoft Excel 2013 (version 16.0.13901.20400) to visually depict these variable distributions.

3. RESULTS

The survey included 324 participants, with nearly half (48.15%) reporting that 15-25% of patients were diagnosed with APD in routine clinical practice. Approximately 62% indicated that both males and females were equally affected by gastric ulcers. More than half (56.48%) of the participants noted that both urban and rural populations were affected by gastric ulcers. About 40% indicated that the most prevalent age group presenting with gastric ulcers in routine practice was 46-60 years (Table 1). Around 44% identified irregular and unhealthy food habits as common risk factors of APD (Fig. 1).

Table 1. Distribution of response to the age group most commonly affected by gastric ulcers

Age in years	Response rate (n = 324)
18-30	2.16%
31-45	50%
46- 60	40.43%
61-75	5.56%
>75	1.85%

The majority (60.19%) of the respondents indicated that a burning sensation in the chest was the most commonly observed symptom in APD. Approximately 44% stated that irregular eating was the most common cause of APD, while 34% reported obesity as another significant factor. The majority (90.74%) of the participants indicated that PPIs were commonly used to treat patients with APD (Table 2). Around 91% stated esomeprazole as the preferred PPI for patients with APD (Fig. 2).

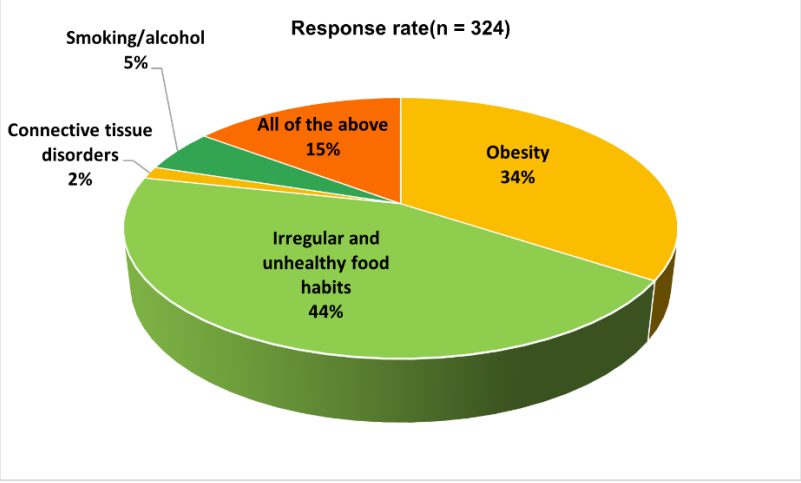

Fig. 1. Distribution of response to common risk factors associated with APD

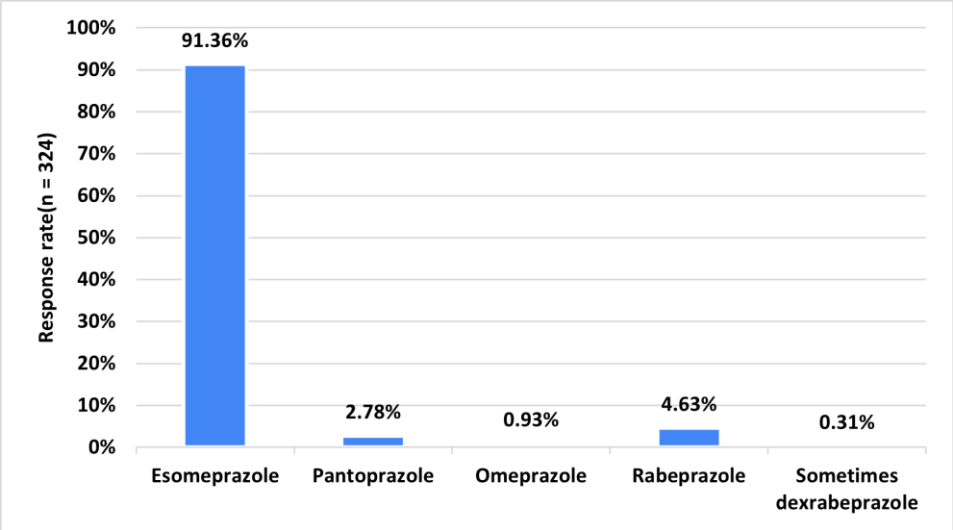

Fig. 2. Distribution of response to the preferred PPI for the patients with APD

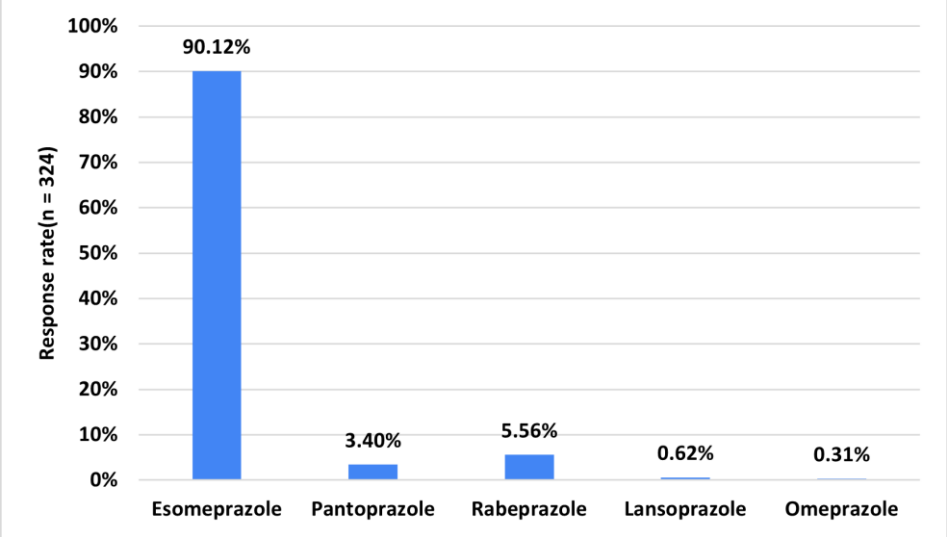

Fig. 3. Distribution of response to the preferred PPI for fast pain relief in APD

More than half (54.32%) of the respondents indicated that 11-25% of the patients prefer combination therapy with PPIs and prokinetics for APD and GERD. Approximately 94% reported that esomeprazole has the greatest potency among PPIs. About 43% stated that 4-8 weeks was the typical duration of therapy for patients with gastric ulcers. Around 45% of the participants noted that 30-40% of patients report nocturnal symptoms of GERD. Approximately 65% of the clinicians indicated that twice-daily PPI therapy was the management approach for refractory cases unresponsive to PPI therapy. About 52% of the participants stated that 10-20% of patients were diagnosed with NSAIDs-induced gastritis associated with APD (Table 3). More than half (61.11%) of the experts indicated that less than 5% of pediatric patients were diagnosed with APD per month. Around 90% stated that esomeprazole was the most commonly chosen PPI for fast relief of pain in APD (Fig. 3).

Table 2. Distribution of response to preferred drugs indicated to treat patients with APD

Drugs	Response rate (n = 324)
Histamine 2 receptor antagonists	6.17%
Proton pump inhibitors	90.74%
Antacids	2.47%
Others	0.61%

Table 3. Distribution of response on the percentage of patients diagnosed with NSAIDs-induced gastritis associated with APD

Percentage of patients diagnosed with NSAIDs-induced gastritis	Response (%)
<10	20.99%
10-20	51.54%
21-30	21.6%
>30	5.86%

About 62% of the clinicians indicated that domperidone was the preferred prokinetic for APD management (Table 4). Nearly 40% of the respondents stated that recommended lifestyle and diet changes for patients with APD include avoiding reflux-triggering foods, eating smaller and more frequent meals, avoiding lying down for at least two hours after a meal, and reducing excess weight. Almost half (49.07%) of clinicians stated that 11-20% of their patients suffer from functional dyspepsia. Around 85% of the clinicians indicated that a prokinetic was the preferred treatment option for patients with functional dyspepsia.

Approximately 47% of the survey participants reported zero cases of Zollinger-Ellison syndrome per month. Around 38% of clinicians indicated a preference for mass education (via social media) to educate patients with APD. More than half (57.41%) of the clinicians identified lack of patient education as a contributing factor to medication non-adherence in APD patients.

Table 4. Distribution of response on the preferred prokinetic for APD management

Prokinetic	Response rate (n = 324)
Domperidone	62.04%
Itopride	5.56%
Cinitapride	0.62%
Levosulpiride	31.79%

4. DISCUSSION

The survey findings indicated a strong preference for PPIs, especially esomeprazole, highlighting the importance of aligning treatment choices with best practice guidelines and exploring the efficacy of combination therapies. The notable prevalence of APD diagnoses necessitates enhanced screening and diagnostic protocols, particularly for high-risk age groups (31-60 years). Nearly half of survey respondents identified the 46-60 age group as having the highest prevalence of gastric ulcers. Sun et al. reported a rapid increase in PUD among individuals aged 35-54, followed by a slight increase in both sexes aged 55-84 years [14]. Woolf et al. noted that the prevalence of gastric ulcers rises with age and prolonged NSAID use [15]. Ramakrishnan et al. stated that about 500,000 individuals in the United States develop PUD annually, with 70% of cases occurring between ages 25 and 64 years [16]. Khuroo et al. found that duodenal and gastric ulcers were more common in men, with peptic ulcer prevalence peaking at 28.8% during the fifth decade of life [17].

Approximately 44% of the current survey respondents identified irregular and unhealthy dietary habits as common risk factors for APD. According to Thapa et al., factors such as gastric acid, *Helicobacter pylori* infection, alcohol consumption, smoking, and stress contribute to the development of peptic ulcers [18]. Chattha et al. highlighted various risk factors for APD, including high-fat foods, coffee, tea, smoking, alcohol, and the use of medications like NSAIDs [19]. Rosenstock et al. emphasized tobacco smoking and *H. pylori* infection as primary risk factors for PUD in Danish adults, suggesting that physical activity may offer protective benefits against PUD in *H. pylori*-infected individuals [20]. Lee et al. further indicated that advanced age, current smoking, and *H. pylori* infection independently increase the risk of symptomatic and asymptomatic PUD [21].

The majority of the participants indicated that PPIs were commonly used in the treatment of APD. According to Chattha et al., PPIs were the most frequently prescribed medication (43.1%), consistent with findings from a study by Butt and Hashemy in Pakistan [19]. Talia et al. noted that PPIs have largely replaced H2 receptor blockers due to their superior efficacy in healing and reducing acid production in the stomach, thereby relieving symptoms [22]. Additionally, Padhy et al. highlighted that PPIs were extensively prescribed to suppress gastric acid secretion and treat conditions such as PUD, gastroesophageal reflux disease, erosive esophagitis, Zollinger-Ellison syndrome, Barrett's esophagus, and upper gastrointestinal bleeding [23].

The majority of the current respondents indicated esomeprazole as their preferred proton PPI for treating APD. According to Qi et al., high-dose esomeprazole was recommended for effective treatment and management of GERD in adults [24]. Mei et al. found that a daily dose of esomeprazole 20 mg is more effective than other

PPIs in reducing relapse rates, epigastric pain, heartburn symptoms, and serious adverse events in GERD patients [25]. Additionally, Gilger et al. reported significant reductions in the frequency and severity of GERD-related symptoms during active treatment periods in their study [26].

More than half of the current participants reported that 10-20% of patients were diagnosed with NSAID-induced gastritis associated with APD. According to Lim et al., NSAID use increased the risk of gastrointestinal complications in 55-75% of healthy volunteers [27]. Dubois et al. highlighted that NSAID use was deemed inappropriate for patients with prior GI events, as it may elevate their risk of gastrointestinal complications by 2.5- to 5-fold compared to those not using NSAIDs [27]. Additionally, Rose noted that in the elderly population, including those who use COX-2 inhibitors, NSAIDs significantly increase the risk of gastrointestinal bleeding [27].

The majority of the participants indicated esomeprazole as the most frequently chosen PPI for achieving rapid pain relief in APD. According to Atug et al., esomeprazole was effective in healing reflux esophagitis, resolving heartburn, and maintaining symptomatic remission [28]. Labenz et al. found that using esomeprazole instead of pantoprazole increases the likelihood of resolving heartburn during therapy for healing reflux esophagitis [29]. Additionally, Labenz et al. highlighted that esomeprazole 20 mg was more effective than pantoprazole 20 mg for maintaining therapy after initial healing of erosive esophagitis and relieving symptoms of GERD [29].

Most respondents favored domperidone as the preferred prokinetic for managing APD. Saboo et al. indicated that the combination of PPI and domperidone effectively relieved symptoms in patients with diabetes and APD, with good tolerability [30]. Additionally, Biswas et al., stated that the majority of prescriptions (299 out of 304, 98%) included domperidone, often in a fixed-dose combination with pantoprazole (274 out of 304, 90%) [31].

Most survey respondents indicated a preference for prokinetics as the primary treatment for patients with functional dyspepsia. According to Lacy et al., prokinetics were acknowledged as rescue medications for this condition, aimed at enhancing gastric emptying [32]. Furthermore, Moayyedi et al. found that prokinetic treatment significantly reduced overall symptoms of functional dyspepsia, with a relative risk of persistent dyspepsia in the prokinetic group reported as 0.92 and a Number Needed to Treat Benefit (NNTB) of 12.5 [33].

Esomeprazole has demonstrated superior acid control, maintaining intragastric pH for extended durations compared to other PPIs. Its efficacy has established it as a cornerstone in managing APD, widely endorsed by clinicians. The insights from the present survey offer valuable guidance for refining treatment strategies and improving patient care, particularly concerning the utilization of esomeprazole and its combination with prokinetics in the Indian setting. A notable strength of this survey lies in its rigorous methodology, employing a well-designed and validated questionnaire to gather data directly from clinicians. However, the findings should be interpreted with caution due to potential biases inherent in expert opinions, influenced by varying perspectives and clinical preferences. Future research should prioritize prospective trials or real-world observational studies to validate the survey findings and provide a more comprehensive understanding of optimal treatment approaches tailored to the evolving landscape of APD management.

5. CONCLUSION

According to the survey findings, esomeprazole emerges as a cornerstone in Indian clinical practice for managing APD, recognized for its superior acid control and minimal side effects. Its integration with domperidone exemplifies a strategic approach to enhance treatment outcomes and patient satisfaction. As management of APD evolves, optimizing the efficacy of esomeprazole through personalized therapies is essential for meeting the evolving needs of gastrointestinal care.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

CONSENT

Prior to participation, all respondents provided written informed consent. Unanswered questions were treated as non-responses.

ETHICAL APPROVAL

The study was conducted after receiving approval from Bangalore Ethics, an Independent Ethics Committee which was recognized by the Indian Regulatory Authority, Drug Controller General of India.

COMPETING INTERESTS

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

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