Section: Medicine

Original Research Article

CROSS SECTIONAL STUDY OF ENDOSCOPIC FINDINGS AMONG PATIENTS WITH DYSPEPSIA NOT RESPONDING TO PPI THERAPY FOR 4 WEEKS IN SUB HIMALAYAN REGION

Sumit Sarkar[1], Priyanka Saha[2], Sandipan Banik[3]

[1]Medical Officer (Specialist), Department of Medicine, Jalpaiguri Government Medical College and Hospital, Jalpaiguri, West Bengal, India.
[2]Medical Officer (Specialist), Department of Pathology, Mal SSH, Jalpaiguri, West Bengal, India
[3]Assistant Professor, Department of Medicine, Jalpaiguri Government Medical College and Hospital, Jalpaiguri, West Bengal, India.

Received : 16/05/2025
Received in revised form : 05/07/2025
Accepted : 24/07/2025

Keywords:
Dyspepsia, Proton Pump Inhibitors, Endoscopy, Gastritis, Peptic Ulcer, Sub-Himalayan Region, Lax LES.

Corresponding Author:
Dr. Priyanka Saha,
Email: doctorpriyankasaha@gmail.com

DOI: 10.47009/jamp.2025.7.4.160

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2025; 7 (4); 853-857

ABSTRACT

Background: Dyspepsia is a common gastrointestinal complaint, and proton pump inhibitors (PPIs) form the cornerstone of empirical management. However, a significant proportion of patients exhibit persistent symptoms despite 8 weeks of PPI therapy. Identifying underlying pathology through endoscopy is crucial, particularly in geographically distinct populations such as the sub-Himalayan region where environmental, dietary, and socioeconomic factors may influence gastrointestinal health. The objective is to evaluate the spectrum of upper gastrointestinal endoscopic findings among patients with dyspepsia unresponsive to 8 weeks of PPI therapy in the sub-Himalayan region. **Materials and Methods:** This hospital-based cross-sectional study was conducted over a period of one year, from January 2024 to December 2024, in the Department of Medicine at Jalpaiguri Government Medical College and Hospital, located in Jalpaiguri, West Bengal, India. The study focused on evaluating patients presenting with dyspepsia, with a total sample size of 93 individuals enrolled during the study period. **Result:** A total of 93 patients were evaluated in the study, with a mean age of 42.33 ± 15.52 years. The majority were aged between 31–40 years and 51–60 years. Males comprised 71% of the cohort, a statistically significant difference. Gastric ulcers were present in 7.5% and duodenal ulcers in 20.4% of patients. Gastritis was the most common endoscopic finding, especially pangastritis (40.7%). Duodenitis was noted in 17.4% of cases. Esophageal findings included oesophagitis (14%) and candidiasis (1.1%), with 15.1% showing a lax LES. Helicobacter pylori infection (RUT positive) was detected in only 8.6%. Hiatus hernia was found in 25.8% of patients, while oesophageal varices and gastric polyps were rare (3.2% and 2.2%, respectively). All findings were statistically significant. **Conclusion:** In patients with dyspepsia unresponsive to 8 weeks of PPI therapy, endoscopy reveals a wide range of pathological findings, including gastritis, ulcers, and LES dysfunction. Routine endoscopic evaluation in such patients, especially in resource-variable regions like the sub-Himalayan belt, is justified for early diagnosis and appropriate management.

INTRODUCTION

Dyspepsia is a prevalent clinical condition, often described as persistent or recurrent upper abdominal discomfort or pain, early satiety, bloating, and postprandial fullness, which may or may not be associated with organic pathology.[1] It affects nearly 20–30% of the general population globally, posing a significant burden on healthcare systems, especially in low-resource settings.[2] Proton pump inhibitors (PPIs) are the mainstay of empirical treatment for uninvestigated dyspepsia due to their efficacy in suppressing gastric acid secretion and alleviating symptoms.[3] However, a substantial proportion of patients do not achieve symptomatic relief despite an adequate trial of PPI therapy for at least 8 weeks, warranting further evaluation with upper gastrointestinal (GI) endoscopy.[4]

Endoscopy in patients with persistent dyspepsia serves a dual purpose: identifying organic causes such as peptic ulcer disease, erosive esophagitis, and malignancies, and differentiating them from functional dyspepsia.[5] Studies have shown that up to

ISSN (O): 2687-5365; ISSN (P): 2753-6556

30–50% of patients with dyspepsia harbor significant endoscopic findings, particularly in populations at higher risk for upper GI malignancies or Helicobacter pylori infection.[6] The diagnostic yield of endoscopy is even higher in patients who fail empirical therapy or present with alarm symptoms.[7]

The etiology of dyspepsia may vary regionally, influenced by dietary habits, socioeconomic factors, H. pylori prevalence, and access to healthcare. In the Sub-Himalayan region, where high-altitude living, poor sanitation, and limited healthcare access are common, the pattern of dyspepsia and related endoscopic findings might differ from that seen in urban or developed regions.[8] Previous studies from similar geographic settings have reported a high prevalence of gastritis, duodenitis, and peptic ulcer disease on endoscopy in dyspeptic patients.[9]

Despite the widespread use of PPIs, the persistence of symptoms in a significant proportion of patients underscores the need for a more structured diagnostic approach, especially in resource-constrained regions. A cross-sectional evaluation of endoscopic findings in such patients will help in delineating the spectrum of underlying pathology, guide appropriate therapeutic interventions, and potentially detect serious conditions such as gastrointestinal malignancies at an earlier, more treatable stage.[10]

This study aims to analyze the endoscopic findings among patients with dyspepsia not responding to 8 weeks of PPI therapy in a tertiary care center located in the Sub-Himalayan region. It also seeks to explore any associations with demographic and clinical variables, contributing to region-specific diagnostic and treatment strategies.

MATERIALS AND METHODS

Study Design: Hospital-Based Cross-Sectional Study.

Study Duration: 1 Year (January 2024 to December 2024)

Study Place: Department of Medicine, Jalpaiguri Government Medical College and Hospital, Jalpaiguri, West Bengal, India.

Sample Size: 93 Dyspepsia Patients

Study Parameter:

- Age
- Sex
- Gastric Ulcer
- Duodenal Ulcer
- Gastritis
- Duodenitis
- Oesophagitis
- Lax Lower Esophageal Sphincter
- Rapid Urease Test
- Hiatus Hernia
- Oesophageal Varices
- Polyp

Inclusion Criteria

- Patients aged ≥18 years.
- Patients with persistent dyspeptic symptoms (postprandial fullness, early satiety, epigastric pain or burning) despite 8 weeks of standard-dose PPI therapy.
- Patients willing to undergo upper gastrointestinal (UGI) endoscopy.
- Patients who gave written informed consent.

Exclusion Criteria

- Patients with prior upper gastrointestinal surgery.
- Patients already diagnosed with peptic ulcer disease, gastroesophageal malignancy, or inflammatory bowel disease.
- Pregnant or lactating women.
- Patients with alarm features (e.g., significant weight loss, anemia, hematemesis, melena) requiring urgent evaluation unless included after stabilization.
- Patients on NSAIDs, steroids, or other medications known to affect gastric mucosa.

Statistical Analysis

Data were entered into Excel and analyzed using SPSS and GraphPad Prism. Numerical variables were summarized using means and standard deviations, while categorical variables were described with counts and percentages. Two-sample t-tests were used to compare independent groups, while paired t-tests accounted for correlations in paired data. Chi-square tests (including Fisher's exact test for small sample sizes) were used for categorical data comparisons. P-values ≤ 0.05 were considered statistically significant.

RESULTS

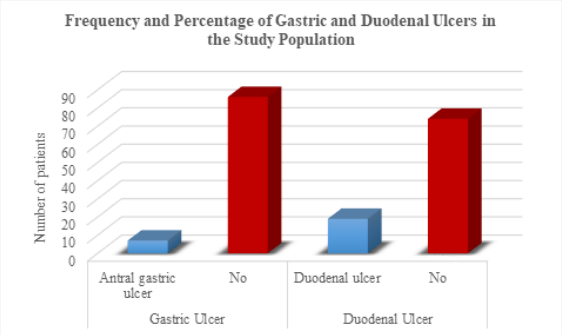

Figure: 1. Frequency and Percentage of Gastric and Duodenal Ulcers in the Study Population

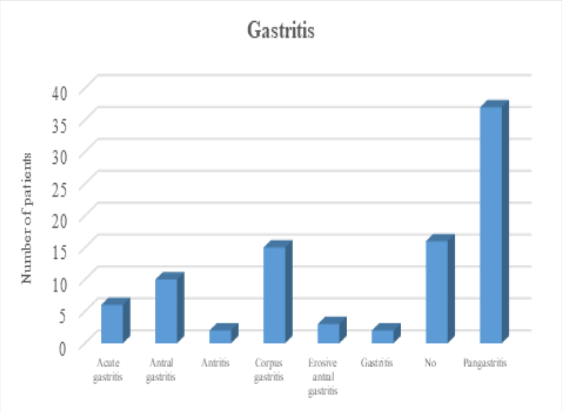

Figure: 2. Frequency of Different Types of Gastritis in Study Population

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Table 1: Distribution of Demographic Parameter

Parameter		Frequency	Percent	P-value
Age in Group	≤20	5	5.40%	0.00022
	21-30	20	21.50%	
	31-40	23	24.70%	
	41-50	14	15.10%	
	51-60	21	22.60%	
	>60	10	10.80%	
	Total	93	100.00%	
Mean Age		42.3333±15.5209		
Sex	Female	27	29.00%	<.00001
	Male	66	71.00%	
	Total	93	100.00%	

Table 2: Frequency and Percentage of Gastric and Duodenal Ulcers in the Study Population

		Frequency	Percent	P-value
Gastric Ulcer	Antral gastric ulcer	7	7.50%	<.00001
	No	86	92.50%	
	Total	93	100.00%	
Duodenal Ulcer	Duodenal ulcer	19	20.40%	<.00001
	No	74	79.60%	
	Total	93	100.00%	

Table 3: Endoscopic Findings and Their Frequency in the Study Population

Parameter		Frequency	Percent	P-value
Gastritis	Acute gastritis	6	6.60%	<.00001
	Antral gastritis	10	11.00%	
	Antritis	2	2.20%	
	Corpus gastritis	15	16.50%	
	Erosive antral gastritis	3	3.30%	
	Gastritis	2	2.20%	
	No	16	17.60%	
	Pangastritis	37	40.70%	
	Total	91	100.00%	
Duodenitis	Duodenitis	16	17.40%	<.00001
	No	76	82.60%	
	Total	92	100.00%	
Oesophagitis	No	79	84.90%	<.00001
	Oesophageal Candidiasis	1	1.10%	
	Oesophagitis	13	14.00%	
	Total	93	100.00%	
Lax Lower Esophageal Sphincter	No	79	84.90%	<.00001
	Yes	14	15.10%	
	Total	93	100.00%	
Rapid Urease Test	Negative	85	91.40%	<.00001
	Positive	8	8.60%	
	Total	93	100.00%	
Hiatus Hernia	Hiatus hernia	24	25.80%	<.00001
	No	69	74.20%	
	Total	93	100.00%	
Oesophageal Varices	No	90	96.80%	<.00001
	Oesophageal varices	3	3.20%	
	Total	93	100.00%	
Polyp	Gastric polyp	2	2.20%	<.00001
	No	91	97.80%	
	Total	93	100.00%	

A total of 93 patients were included in the study. The mean age of the study population was 42.33 ± 15.52 years. The age distribution showed that the majority of patients were in the 31–40 years (24.7%) and 51–60 years (22.6%) age groups, followed by 21–30 years (21.5%). A statistically significant difference was observed in the age distribution (P = 0.00022). Regarding sex distribution, 66 patients (71%) were male and 27 patients (29%) were female, with the difference being statistically significant (P < 0.00001).

Among the 93 patients studied, 7 patients (7.5%) were found to have an antral gastric ulcer, while the remaining 86 patients (92.5%) did not have any gastric ulcer. The difference was statistically significant (P < 0.00001). Duodenal ulcer was identified in 19 patients (20.4%), whereas 74 patients (79.6%) had no duodenal ulcer, with this finding also being statistically significant (P < 0.00001).

On endoscopic evaluation of 93 patients, gastritis was the most frequently observed abnormality, with pangastritis seen in 40.7%, followed by corpus gastritis in 16.5%, antral gastritis in 11%, and acute

ISSN (O): 2687-5365; ISSN (P): 2753-6556

gastritis in 6.6%. Less common findings included erosive antral gastritis (3.3%), antritis (2.2%), and nonspecific gastritis (2.2%), while 17.6% of patients showed no evidence of gastritis ($P < 0.00001$).

Duodenitis was present in 17.4% of patients, while 82.6% had no such finding ($P < 0.00001$). In terms of esophageal pathology, oesophagitis was seen in 14% and oesophageal candidiasis in 1.1%, with 84.9% showing no esophageal inflammation ($P < 0.00001$).

A lax lower esophageal sphincter (LES) was identified in 15.1% of cases, with the remainder (84.9%) showing no evidence of laxity ($P < 0.00001$).

The Rapid Urease Test (RUT) was positive in only 8.6% of patients, indicating a low prevalence of Helicobacter pylori infection, while 91.4% were negative ($P < 0.00001$).

Hiatus hernia was noted in 25.8% of the cases, whereas 74.2% did not exhibit this finding ($P < 0.00001$). Oesophageal varices were rare, seen in only 3.2% of patients, with 96.8% having no varices ($P < 0.00001$). Lastly, gastric polyps were found in 2.2% of patients, while the remaining 97.8% had no such findings ($P < 0.00001$).

DISCUSSION

In our study comprising 93 patients with functional dyspepsia, the most commonly affected age group was 31–40 years (24.7%), followed closely by 51–60 years (22.6%) and 21–30 years (21.5%), with a mean age of 42.33 ± 15.52 years. This age distribution is consistent with findings by Mahadeva et al. (2010), who observed that functional dyspepsia primarily affects individuals aged between 20 and 50 years, with peak prevalence around the fourth decade of life.[11] A significant male preponderance was seen in our study (71% male vs. 29% female), a pattern also noted by Savarino et al. (2009) in a European cohort, where males were slightly more represented in patients undergoing endoscopy for dyspepsia.[12]

Gastric ulcers were observed in 7.5% of our patients, and duodenal ulcers in 20.4%, both statistically significant. These findings parallel those reported by Tytgat et al. (2006), where duodenal ulcers were more frequently encountered than gastric ulcers among dyspeptic patients, particularly in regions with high Helicobacter pylori prevalence.[13] Gastritis was the most common endoscopic finding, with pangastritis being predominant (40.7%), which concurs with the study by Mishra et al. (2012) conducted in Eastern India, where over 50% of dyspeptic patients showed chronic gastritis on endoscopy, primarily pangastritis.[14]

Interestingly, only 8.6% of patients tested positive for H. pylori by Rapid Urease Test (RUT), indicating a low prevalence in our cohort. This contrasts with studies such as Nakamura et al. (2008) from Japan, which reported H. pylori positivity rates exceeding 60% in dyspeptic patients.[15] This discrepancy may be attributed to regional differences in bacterial colonization, antibiotic use, and socioeconomic factors. Lax lower esophageal sphincter (LES) was seen in 15.1% of cases, often associated with reflux symptoms. Hiatus hernia was identified in 25.8% of our cases, aligning with findings by Katz et al. (2013), who reported a similar prevalence of hiatus hernia in patients with gastroesophageal reflux disease (GERD) symptoms undergoing upper GI endoscopy.[16]

Our findings also included less frequent abnormalities like esophagitis (14%), duodenitis (17.4%), esophageal candidiasis (1.1%), gastric polyps (2.2%), and varices (3.2%). These findings suggest a broad differential diagnosis in patients with dyspeptic symptoms, reinforcing the utility of upper gastrointestinal endoscopy as both a diagnostic and stratification tool, especially in patients with alarm symptoms or non-responsiveness to empirical therapy.

CONCLUSION

The present study highlights the demographic and endoscopic characteristics of patients presenting with upper gastrointestinal symptoms. The majority of patients were middle-aged males, with significant age and sex-based differences. Gastritis, particularly pangastritis, emerged as the most common endoscopic finding. While the prevalence of gastric and duodenal ulcers was relatively low, both were statistically significant. Duodenitis, esophagitis, and lax lower esophageal sphincter were also notable findings. Helicobacter pylori infection, as detected by Rapid Urease Test, was relatively uncommon. Hiatus hernia was observed in a significant proportion, whereas esophageal varices and gastric polyps were rare. These findings underscore the importance of endoscopic evaluation in the diagnosis and management of upper gastrointestinal disorders, especially in symptomatic individuals, and highlight the variable spectrum of pathologies encountered.

REFERENCES

1. Talley NJ, Ford AC. Functional Dyspepsia. N Engl J Med. 2015;373(19):1853–63.
2. Mahadeva S, Goh KL. Epidemiology of functional dyspepsia: a global perspective. World J Gastroenterol. 2006;12(17):2661–6.
3. Moayyedi P, et al. Systematic review: the efficacy of proton pump inhibitors in non-ulcer dyspepsia. Aliment Pharmacol Ther. 2006;24(2):207–15.
4. Talley NJ, Vakil N. Guidelines for the management of dyspepsia. Am J Gastroenterol. 2005;100(10):2324–37.
5. Lacy BE, et al. Functional dyspepsia: the economic impact to patients. Aliment Pharmacol Ther. 2013;38(2):170–7.
6. Leontiadis GI, Sharma VK, Howden CW. Systematic review and meta-analysis: proton pump inhibitor treatment for non-ulcer dyspepsia. BMJ. 2005;330(7493):999.
7. Vakil N, et al. ACG and CAG Clinical Guideline: Management of Dyspepsia. Am J Gastroenterol. 2017;112(7):988–1013.
8. Singh V, Trikha B, Nain CK, Mishra A, Kumar L. Epidemiology of Helicobacter pylori and peptic ulcer in India. J Gastroenterol Hepatol. 2002;17(6):659–65.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

9. Pathak CM, et al. Upper gastrointestinal endoscopic findings in dyspeptic patients of Himachal Pradesh. Trop Gastroenterol. 2001;22(1):27–30.
10. Haug U, et al. Diagnostic value of upper GI endoscopy in dyspeptic patients without alarm symptoms: a population-based study. Scand J Gastroenterol. 2004;39(11):1027–34.
11. Mahadeva S, Goh KL. Functional dyspepsia in Asia. J Gastroenterol Hepatol. 2010;25(3):464–469. doi:10.1111/j.1440-1746.2009.06035.x
12. Savarino V, Zentilin P, Savarino E. Nomenclature, diagnosis and treatment of functional dyspepsia: a systematic review. World J Gastroenterol. 2009;15(14):1720–1729.
13. Tytgat GNJ. Role of Helicobacter pylori in dyspepsia. Scand J Gastroenterol Suppl. 2006;(221):30–34.
14. Mishra S, Mandal AK, Bhattacharya S. Endoscopic findings in upper gastrointestinal tract in patients with dyspepsia in Eastern India. Int J Biomed Adv Res. 2012;3(3):205–207.
15. Nakamura M, et al. Prevalence and risk factors of Helicobacter pylori infection in Japan: a nationwide study. J Gastroenterol Hepatol. 2008;23(3):320–325.
16. Katz PO, Gerson LB, Vela MF. Guidelines for the diagnosis and management of gastroesophageal reflux disease. Am J Gastroenterol. 2013;108(3):308–328.

ISSN (O): 2687-5365; ISSN (P): 2753-6556