

Original Article**Endoscopic Findings in Patients Presenting with Dyspepsia****Rajan Acharya^{*1}, Sandip Kumar Sah¹, Priza Subedi²**¹ Department of Internal Medicine, Nobel Medical College Teaching Hospital, Biratnagar, Nepal ² Department of Basic and Clinical Physiology, B.P Koirala Institute of Health Sciences, Dharan, NepalArticle Received: 17th September, 2025; Accepted: 22nd November, 2025; Published: 31st December, 2025**DOI:** <https://doi.org/10.3126/jonmc.v14i2.87932>**Abstract****Background**

Dyspepsia is one of the most frequently encountered complaints in Medicine department, representing a significant proportion of outpatient visits. The objective of our study was to evaluate the endoscopic findings in patients presenting with dyspepsia.

Materials and Methods

This descriptive, cross sectional study was conducted in the Department of Internal Medicine, Nobel Medical College Teaching Hospital from May, 2024 to April, 2025 after obtaining ethical clearance from the Institutional Review Committee. The sample size was calculated to be 320. Age, gender and clinical symptoms were assessed. Upper gastrointestinal endoscopy was performed in all patients, and a rapid urease test was done to detect Helicobacter pylori infection.

Results

The mean age of the study population was 34 ± 5.65 years. Out of 320 patients, 170 were males and 150 were females, with a slight male predominance (male to female ratio 1.13:1). The most common upper GI endoscopy finding was gastritis (40%) followed by duodenitis (20%), duodenal ulcer (10%) and gastric ulcer (5%). Normal UGI endoscopy findings was observed in 25% of the study population. Epigastric pain (45.31%) was the most common symptom followed by epigastric burning (24.06%), post prandial fullness (18.75%) and early satiety (11.87%). Rapid Urease Test (RUT) for Helicobacter pylori infection was positive in 66.87% of the study population.

Conclusion

Gastritis was the most common upper gastrointestinal endoscopic finding in our study followed by duodenitis. Normal endoscopic finding was observed in one fourth of the study population.

Keywords: *Dyspepsia, Duodenitis, Endoscopy, Gastritis*

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Introduction

Dyspepsia is a term derived from Greek word which literally means bad digestion. “dys” (bad), “pepsia” (digestion) [1]. Dyspepsia refers to a combination of upper gut symptoms such as epigastric pain, epigastric burning, post prandial fullness, early satiety, abdominal discomfort, nausea, vomiting and belching [2]. Upper gastrointestinal (GI) symptoms are the commonest complaints among the patients, for which they seek medical advice. Diseases associated with these symptoms are important cause of morbidity and mortality worldwide. The common upper GI symptoms where endoscopy is done are dyspepsia, dysphagia, GI bleeding, progressive unintentional weight loss, persistent vomiting of unknown cause, anemia and epigastric mass [2]. Dyspepsia is one of the most frequent symptoms presenting to Medicine department in our hospital and it is also one of the most common indication for upper GI endoscopy. Dyspepsia in elderly (> 55 years of age), dyspepsia with alarm features and dyspepsia refractory to medical therapy should undergo prompt upper GI endoscopy as it is the investigation of choice for evaluation of dyspepsia in such patients. [3].

This study is performed to describe the endoscopic pattern of various upper GI diseases in patients presenting with dyspepsia, and to compare with similar previous studies.

Materials and Methods

This descriptive, cross sectional study was conducted in the Department of Internal Medicine, Nobel Medical College Teaching Hospital, Biratnagar from May, 2024 to April, 2025. Ethical clearance was obtained from the Institutional Review Committee (IRC). The sample size was calculated using the formula: $n = Z^2 p (1-p) / d^2 = (1.96)^2 \times 0.25 (1-0.25) / (0.05)^2$; where $Z = 1.96$ at 95% confidence interval (C.I), d = acceptable margin of error (precision), e.g. 5% = 0.05; p = prevalence of peptic ulcer as the endoscopic finding in dyspeptic patients taken from previous study as 25.95% [4] which was rounded to 25%, the estimated sample size was 288. Then after adding 10% non-response rate, final $n = n/0.9 = 288/0.9 = 320$. Convenient sampling technique was used. All patients presenting with dyspepsia attending medicine OPD were enrolled in the study. Written informed consent was taken from the participants. Assessment of age, gender and clinical symptoms were done.

Upper gastrointestinal endoscopy was performed in all patients using Fujifilm video endoscopy series 7000. During endoscopy one punch biopsy sample was taken and a rapid urease test (RUT) was done using RUT kit manufactured by Gastro Hub, Kolkata, India to detect Helicobacter pylori infection.

Pro forma was filled up with the data collected from the study. The data collected were analyzed using Statistical package for the Social Sciences (SPSS). Mean and Standard deviation (SD) was calculated for age, and percentage values were obtained for other variables such as clinical symptoms and endoscopic findings.

Results

In this study, a total of 320 patients with dyspepsia underwent upper GI endoscopy. The mean age of the study population was 34 ± 5.65 years. Out of 320 patients, 170 were males and 150 were females, with a slight male predominance (Male to Female ratio 1.13:1).

The most common upper GI endoscopy finding was gastritis (40%) followed by duodenitis (20%), duodenal ulcer (10%) and gastric ulcer (5%). Normal upper GI endoscopy finding was observed in 25% of the study population.

Epigastric pain (45.31%) was the most common symptom in our study population followed by epigastric burning (24.06%), post prandial fullness (18.75%) and early satiety (11.87%).

Rapid Urease Test (RUT) for Helicobacter pylori infection was positive in 66.87% of the study population.

Table 1: Gender distribution and mean age among study population

Gender	Number of patients (n=320)	Percentage (%)	Age in years (Mean \pm S.D)
Males	170	53.12%	35 ± 7.07
Females	150	46.87%	35 ± 4.24

Table 2: Gender distribution and mean age with different endoscopic findings

Endoscopic findings	Total patients (n, %)	Males (n)	Females (n)	Age in years (Mean \pm S.D)
Gastritis	128 (40%)	72	56	38 ± 11.31
Duodenitis	64 (20%)	38	26	38.5 ± 12.5
Duodenal ulcer	32 (10%)	20	12	40 ± 2.82
Gastric ulcer	16 (5%)	10	6	61.5 ± 12.3
Normal	80 (25%)	30	50	39 ± 1.41



Table 3: Symptoms distribution among different endoscopic findings

Endoscopic findings	Total patients (n, %)	Epigastric pain (n, %)	Epigastric burning (n, %)	Post prandial fullness (n, %)	Early satiety (n, %)
Gastritis	128 (40%)	64 (50%)	32 (25%)	20 (15.62%)	12 (9.37%)
Duodenitis	64 (20%)	35 (54.68%)	13 (20.31%)	9 (14.06%)	7 (10.93%)
Duodenal ulcer	32 (10%)	16 (50%)	14 (43.75%)	1 (3.1%)	1 (3.1%)
Gastric ulcer	16 (5%)	8 (50%)	4 (25%)	2 (12.5%)	2 (12.5%)
Normal	80 (25%)	22 (27.5%)	14 (17.5%)	28 (35%)	16 (20%)

Table 4: RUT positive among different endoscopic findings

Endoscopic findings	Total patients (N, %)	RUT positive (n, %)
Gastritis	128 (40%)	90 (70.31%)
Duodenitis	64 (20%)	52 (81.25%)
Duodenal ulcer	32 (10%)	28 (87.5%)
Gastric ulcer	16 (5%)	12 (75%)
Normal	80 (25%)	32 (40%)

Discussion

The mean age of the study population was 34±5.65 years. Althaf et al studied upper GI endoscopy findings in dyspeptic patients [5]. The mean age in their study was 51.36 years. This finding is in contrast to our finding. The young age group in our study population might be due to several emerging factors, including early acquisition of *H. pylori* infection, increased consumption of fast and processed foods, increased stress levels, irregular dietary habits, increased use of NSAIDs and self-medication. Lifestyle related factors such as smoking, alcohol intake, soft and energy drink consumption have also been shown to compromise gastro duodenal mucosal integrity in younger populations. Additionally, improved access to endoscopy facility may lead to increased detection of endoscopic findings in this age group.

Out of 320 patients, 170 patients were males and 150 were females with a slight male predominance (male to female ratio 1.13:1). This finding is consistent with the study done by Althaf et al which shows male to female ratio of 1.08: 1 [5]. Gastritis is the most common endoscopic finding (40%) in the study population followed by duodenitis (20%), duodenal ulcer (10%) and gastric ulcer (5%) while 25% of patients have a normal endoscopy (Functional dyspepsia).

Shrestha et al at Patan Hospital reported gastritis in 41.6% of the dyspeptic patients undergoing upper GI endoscopy [6]. This similarity suggests that gastritis is a common organic lesion among dyspeptic individuals in Nepal likely reflecting comparable patient characteristics and risk factors.

Duodenitis is found in 20% of cases in our study, which is consistent with findings from Amar and Niak (2019), who reported a similar prevalence of duodenitis among dyspeptic patients undergoing upper GI endoscopy at a tertiary care center in Karnataka, India [7]. This highlights that duodenitis is a common endoscopic abnormality among patients with dyspepsia in hospital-based population. In our study, duodenal ulcer is found in 10% of cases and gastric ulcer in 5% of cases. Subedi et al done a study in Manmohan Memorial Medical College Teaching Hospital, Kathmandu and found duodenal ulcer in 12.5% of cases and gastric ulcer in 7.5% of cases [8]. These findings are almost similar to our study.

Thakur et al at Koshi Hospital Biratnagar, Nepal reported 11.4 % of gastric ulcer and 4.7% of duodenal ulcer [9]. The findings of this study are in contrast to our study and other mentioned studies where duodenal ulcer tends to be more predominant than gastric ulcer. In our study, 25% of patients had normal upper GI endoscopy findings. This is consistent with findings by Roshan et al who reported 27.74% normal endoscopy results among dyspeptic patients at Patan Hospital, Nepal [6]. These comparable rates across different centers suggests that a significant number of dyspeptic patients have functional dyspepsia. The most common presenting symptom in this study was epigastric pain (45.31%) followed by epigastric burning (24.06%), post prandial fullness (18.75%) and early satiety (11.87%). Several clinical studies also show epigastric pain and epigastric burning are the most frequently observed symptoms among patients presenting with dyspepsia [10, 11, 12]. Rapid urease test (RUT) for *Helicobacter pylori* was positive in 66.87% of the study population. Jha JC et al at Birat Medical College Teaching Hospital found RUT positive in 67.7% of cases [13]. Bhattacharai et al studied *H. pylori* infection among patients undergoing upper GI endoscopy for dyspepsia in Manipal Teaching Hospital, Pokhara and found RUT positive in 53.2% of cases [14]. Thapa et al studied noninvasive diagnosis of *H. pylori* among patients with dyspepsia in Pokhara Academy of Health Sciences and found 56% positive for *H. pylori* in stool antigen test [15].



These findings suggest that *H. pylori* remains a major etiological factor in patients with dyspepsia among Nepalese population. Testing for *H. pylori* via RUT during endoscopy or noninvasively through stool antigen test remains important. Eradication therapy for *H. pylori* in confirmed positive cases may help to reduce risk of ulcer formation, ulcer recurrences or ulcer complications and can improve dyspeptic symptoms in our settings.

Conclusion

Epigastric pain was the most common symptom followed by epigastric burning. Gastritis was the most common upper gastrointestinal endoscopic finding followed by duodenitis. Duodenal ulcer was more common than gastric ulcer. Normal endoscopic finding was observed in one fourth of the study population. RUT was positive in more than two-third of cases.

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Conflict of interest: None

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