Spectrum of Upper Gastrointestinal Endoscopy Findings in Patients with Dyspepsia

Md. Nahian Faruque Chowdhury¹, Modhusudhan Saha², Moloy Kumar Sur Chowdhury³

Abstract

Introduction: This retrospective study was designed to see the endoscopic findings in patients with dyspepsia. Materials and Methods: This was a hospital-based retrospective observational study which included adult patients who underwent upper gastrointestinal endoscopy for dyspepsia from December 2020 to November 2022. Result: Total of 802 patients, male 405 (50.5%) and female 397 (49.5%), age ranging from 14 to 87 years (mean 42.2382 and SD 15.45) were included in this study. Most common abnormal endoscopic finding was non erosive antral gastritis seen in 341 patients (42.5%), followed by pangastritis in 63 (7.86%) and erosive antral gastritis in 52 (6.48%) patients, duodenal ulcer disease including active, with or without outlet obstruction and remission phase 127 (15.82%), gastric ulcer 34 (4.24%) and oesophageal varices 21 (2.62%). In addition, 24 (2.99%), seven (0.87%) and five (0.62%) patients had carcinoma stomach, carcinoma oesophagus and carcinoma duodenum respectively with higher incidence among elderly patients. While, duodenal malignancy and haial hernia were more common in elderly patients, erosive antral gastritis and pangastritis were more common at younger age groups. However, oesophageal varix, duodenal ulcer and antral carcinoma were more common among male patients. Conclusion: Gastritis was the most common endoscopic finding among dyspeptic patients. The incidence of upper GI malignancy was low, but comparatively higher in elderly patients.

Key words: Dyspepsia, upper GI endoscopy, gastritis, gastric cancer.

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1. Corresponding Author:

Dr. Md. Nahian Faruque Chowdhury
Registrar
Department of Sports Medicine and Arthroscopy
Sylhet MAG Osmani Medical College Hospital
Sylhet, Bangladesh.
Orcid : https://orcid.org/0000-0002-2365-450x
Email:nahiansyl@gmail.com
Mobile: 01717267398

2. Professor Dr. Modhusudhan Saha

Professor and Head
Department of Gastroenterology
Sylhet Women’s Medical College
Sylhet, Bangladesh.

3. Dr. Moloy Kumar Sur Chowdhury

Associate Professor
Department of Gastroenterology
Sylhet MAG Osmani Medical College
Sylhet, Bangladesh.

Introduction:

Dyspepsia is a very common upper gastrointestinal (GI) symptom. Dyspepsia literally means difficult digestion. It is not a diagnosis, rather constellation of symptoms localized to upper abdomen like epigastric pain or burning, abdominal bloating, early satiety, belching, postprandial fullness, nausea, and/or vomiting¹². The prevalence of dyspepsia is about 20-30% globally. However, studies from the Indian subcontinent approximated it to be nearly 30 to 49%³⁴. Dyspepsia may be linked to serious GI pathological conditions like ulcer, stricture or malignancy⁵. An organic cause is found in around 40% of patients with dyspeptic symptoms. If no cause is identified, then dyspepsia is considered to be functional or non-ulcer dyspepsia The dyspeptic patients are considered to be at high risk if it is new onset with age > 50 years, weight loss, hematemesis, melena, persistent vomiting or dysphagia and family history of cancer ᵆ⁷. Esophagogastroduodenoscopy (EGD) is an important diagnostic tool for the evaluation of upper gastrointestinal tract. Dyspeptic symptoms are the most frequent reason for requesting for an upper GI endoscopy⁸. It is easy, reliable, diagnostically superior with scope of biopsies and/or therapeutic interventions. A negative endoscopy may have a significant reassuring effect and may result in a decreased use of medication, fewer medical consultations, reduction in anxiety and an increase in patients’ satisfaction. With this background, this study was undertaken to determine the prevalence of significant endoscopic lesions in patients presenting with dyspepsia¹¹,¹².

Materials and Methods:

This was a retrospective observational study that was carried out at a private medical centre in Sylhet, Bangladesh, over a period of 2 years extending from December 2020 to November 2022. Patients
presenting with dyspeptic symptoms lasting more than 3 months and not investigated previously, either endoscopically or radiologically, were included in the study, and their charts were retrieved from our hospital database. Patients who were terminally ill and noncooperative patients, a documented history of the upper gastrointestinal pathology or upper gastrointestinal surgery were excluded from the study.

**Statistical analysis**

All statistical analyses were performed using SPSS version 25.0. Descriptive statistics were used to characterize patient demographics. Continuous variables were presented as the mean and standard deviation and the categorical data as number and percentage. The continuous variables were compared using the one-way ANOVA, and the categorical variables were analyzed using the Chi-squared test. P < 0.05 was considered as statistically significant.

**Results:**

A total of 802 patients were included in this study. Out of them, male were 405 (50.5%) and female were 397 (49.5%). Mean age was 42.43 years (SD ± 15.64) and 42.04 years (SD ± 15.26) for male and female patients respectively (Table I).

**Table I:** Distribution of study subjects according to age and sex

<table>
<thead>
<tr>
<th>Sex</th>
<th>Number</th>
<th>Age range</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>405</td>
<td>14 to 87</td>
<td>42.436</td>
<td>15.647</td>
</tr>
<tr>
<td>Female</td>
<td>397</td>
<td>14 to 82</td>
<td>42.037</td>
<td>15.263</td>
</tr>
</tbody>
</table>

The endoscopic findings were normal in 140 patients (17.46%). Most of the pathological endoscopic findings were distributed in stomach followed by duodenum and esophagus (Table II).

**Table II:** Distribution of endoscopic findings based on site of lesion

<table>
<thead>
<tr>
<th>Distribution of site of endoscopic findings</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>140</td>
<td>17.46</td>
</tr>
<tr>
<td>Esophagus</td>
<td>73</td>
<td>9.10</td>
</tr>
<tr>
<td>Stomach</td>
<td>573</td>
<td>71.44</td>
</tr>
<tr>
<td>Duodenum</td>
<td>131</td>
<td>16.33</td>
</tr>
</tbody>
</table>

EGD failed to reveal any significant findings in 140 patients (17.46%). Among those with abnormal endoscopic findings, non erosive antral gastritis was the most common endoscopic abnormality seen in 341 patients (42.5%), followed by pangastritis in 63 (7.86%) and erosive antral gastritis in 52 (6.48%) patients. Other less common endoscopic findings included duodenitis, duodenal ulcer, antral ulcer, oesophageal varix, portal hypertensive gastropathy, oesophageal candidiasis, gastric malignancy, oesophageal malignancy, duodenal malignancy. Again, hiatal hernia were more common in patients above 60 years of age with p value 0.045 and 0.044 respectively. On the other hand, erosive antral gastritis and pangastritis were more common at younger age group (Table III).

**Table III:** Relation of endoscopic findings with age

<table>
<thead>
<tr>
<th>Findings</th>
<th>Number</th>
<th>Age 25</th>
<th>26-45</th>
<th>26-60</th>
<th>&gt;60</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>405</td>
<td>140</td>
<td>160</td>
<td>160</td>
<td>60</td>
<td>0.00</td>
</tr>
<tr>
<td>Female</td>
<td>397</td>
<td>131</td>
<td>160</td>
<td>160</td>
<td>60</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Detection rate of duodenal ulcer disease, carcinoma oesophagus, carcinoma stomach and oesophageal varices** were significantly high among males (Table IV). In between sex pathological endoscopic findings i.e., oesophageal varix (p = 0.001), duodenal ulcer (p = 0.005) and antral carcinoma (p = 0.03) were more common among males (Table IV).

**Table IV:** Relation of endoscopic findings with sex

<table>
<thead>
<tr>
<th>Findings</th>
<th>Total</th>
<th>Female (%)</th>
<th>Male (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>0.06</td>
</tr>
<tr>
<td>NEAG</td>
<td>341</td>
<td>160 (46.42%)</td>
<td>181 (53.58%)</td>
<td>0.28</td>
</tr>
<tr>
<td>EAG</td>
<td>52</td>
<td>22 (42.31%)</td>
<td>30 (57.69%)</td>
<td>0.20</td>
</tr>
<tr>
<td>Mannheim</td>
<td>63</td>
<td>16 (25.39%)</td>
<td>47 (74.61%)</td>
<td>0.002</td>
</tr>
<tr>
<td>Gastroentheritis</td>
<td>34</td>
<td>8 (23.53%)</td>
<td>26 (76.47%)</td>
<td>0.006</td>
</tr>
<tr>
<td>Antral ulcer</td>
<td>46</td>
<td>28 (60.87%)</td>
<td>18 (39.13%)</td>
<td>0.007</td>
</tr>
<tr>
<td>Duodenum</td>
<td>30</td>
<td>22 (73.33%)</td>
<td>8 (26.67%)</td>
<td>0.008</td>
</tr>
<tr>
<td>Duodenitis</td>
<td>50</td>
<td>35 (70.00%)</td>
<td>15 (30.00%)</td>
<td>0.003</td>
</tr>
<tr>
<td>Esophageal varix</td>
<td>21</td>
<td>18 (85.71%)</td>
<td>3 (14.29%)</td>
<td>0.065</td>
</tr>
<tr>
<td>Carcinoma stomach</td>
<td>13</td>
<td>10 (76.92%)</td>
<td>3 (23.08%)</td>
<td>0.276</td>
</tr>
<tr>
<td>Carcinoma oesophagus</td>
<td>7</td>
<td>5 (71.43%)</td>
<td>2 (28.57%)</td>
<td>0.065</td>
</tr>
<tr>
<td>Hiatus hernia</td>
<td>13</td>
<td>10 (76.92%)</td>
<td>3 (23.08%)</td>
<td>0.065</td>
</tr>
<tr>
<td>Oesophageal varix</td>
<td>5</td>
<td>5 (100.00%)</td>
<td>0 (0.00%)</td>
<td>0.032</td>
</tr>
</tbody>
</table>

**Discussion:**

Dyspepsia is a common presenting complaint both to general practitioners as well as to gastroenterologists. The symptoms of dyspepsia overlap with many conditions such as GERD, peptic ulcer disease (PUD), motility disorders, side effects of medications (such as NSAIDs, steroids), irritable bowel syndrome (IBS), biliary tract disease, pancreatitis, and gastrointestinal endoscopy findings in patient presenting problem in primary care patients with uninvestigated dyspepsia: the epidemiology of overlapping symptoms. PMid:1551533
syndrome (IBS), biliary tract disease, pancreatitis, and malignancy. The prevalence of GERD and IBS are higher in patients with dyspepsia compared with patients without dyspepsia13,14. Dyspeptic patients younger than 50 years of age and without alarm features are commonly evaluated either by (1) non-invasive testing for Helicobacter pylori (the “test and treat” approach), or (2) an empiric trial of acid suppression, or (3) initial upper GI endoscopy. Alarm features for dyspeptic patients include age≥50 years, upper GI bleeding or iron deficiency anaemia, unexplained weight loss, dysphagia, odynophagia, persistent vomiting, and family history of upper GI malignancy in a first-degree relative. Dyspeptic patients older than 50 years of age or those with alarm features should undergo upper GI endoscopy immediately. Endoscopy should also be considered for patients in whom there is a strong suspicion of malignancy even in the absence of alarm features. Upper GI endoscopy is also useful for differentiating organic dyspepsia from functional dyspepsia15. The present study was undertaken for evaluating the spectrum of upper GI endoscopic findings in dyspeptic patients. In our study, the mean age was 42.4±15.6 (SD) years (14-87 years) for males and 42.0±15.3 years (14-82 years) for females, which is similar to other studies16,17. The gender ratio of male and female were nearly similar. In the present study, the normal endoscopic finding was seen in about 17% of the cases. Rajendran et al. reported normal endoscopic findings in 18% patients with dyspepsia16. Another study from Nepal Medical College reported normal findings in 17.87% of patients who underwent EGD for dyspepsia17. Similar findings were revealed in Wallace et al. and Sanjiv et al18,19. In our study normal endoscopic finding was more common in dyspeptic patients younger than 45 years compared to patients above 45 years (77% vs 23%). This finding is consistent with previous studies of Gado et al20, Lopez et al21, Sanjiv et al22, and Thomson et al23. However Wallace et al. reported that age was significant but weak independent predictor of abnormal endoscopic findings24. Regarding gender distribution, normal endoscopic finding was more common in female patients in comparison to male patients (71.43% vs 28.57%). This result goes with the studies of Jung et al25, and Sanjiv et al19 that revealed gender has increased risk for having endoscopic abnormality. This could be attributed to the social habits of smoking and alcohol, which are more common in men and which also play an important role in the pathogenesis of various gastrointestinal disorders such as gastroesophageal reflux disease, peptic ulcer disease and malignancies of upper gastrointestinal tract. In this study, highest percentage of abnormal endoscopic finding was observed in stomach followed by duodenum and esophagus. Rajendran et al20 and Yellapu et al21 also reported similar observations. In the current study, most common endoscopic abnormality encountered was gastritis (non erosive antral gastritis, erosive antral gastritis, pangastritis). This was in agreement with the findings of Mubarik et al25, Rajendran et al26, and Yellapu et al21. Other common endoscopic abnormality in the present study were gastric ulcer, duodenal ulcer, oesophageal candidiasis, hiatus hernia, oesophageal varix. The number of patients with these lesions was too small to compare with prior published data. Regarding malignancy, gastric carcinoma was more prevalent followed by few cases of oesophageal carcinoma. The result was in concordance with the previous study done by Dinesh et al20, Rajendran et al18, and Yellapu et al21 where they found the high frequency of gastric carcinoma followed by esophageal cancer. Moreover, the present study showed that incidence of upper GI malignancy increases as the age advances. Previous studies also showed that the incidence and risk of gastric malignancy was high after 50 years of age27.

Conclusion:
We can conclude that dyspepsia is a common clinical event in upper GI disorders. The most common endoscopic finding of dyspeptic patients was gastritis. The incidence of upper GI malignancy was low, but higher in elderly patients. The upper GI endoscopy is the best investigation tool for evaluating dyspepsia. Though it is an invasive procedure and involves in huge financial burden, it is justifiable to do upper GI endoscopy in dyspeptic patients specially at old age. Even if endoscopic finding is normal, it can cause reduction in anxiety, an increase in patient satisfaction and reassurance that improve the quality of life.

Conflicts of Interest: None.

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References:
5. Davidson's Principle and practice of medicine. Alimentary
https://doi.org/10.1056/NEJM199811053391907 PMid:9801400
https://doi.org/10.3109/00365529101909531 PMid:1896824
https://doi.org/10.1016/j.ajme.2013.09.002
https://doi.org/10.1016/j.ajme.2013.10.001
https://doi.org/10.1053/j.gastro.2016.03.035
https://doi.org/10.1053/j.gastro.2016.02.032
https://doi.org/10.1055/s-0041-101692 PMid:25970409
https://doi.org/10.1016/j.gie.2015.04.003 PMid:26032200
https://doi.org/10.1016/j.cgh.2009.07.020
https://doi.org/10.1016/j.cgh.2010.05.031
https://doi.org/10.1038/aaj.2013.102 PMid:23644963
https://doi.org/10.3126/jphah.v2i2.20325
https://doi.org/10.1136/gut.49.1.29 PMid:11413107 PMcid:PMC1728370
https://doi.org/10.1007/s10620-012-2256-7 PMid:22688184
https://doi.org/10.1016/j.ajme.2013.10.001
https://doi.org/10.1046/j.1365-2036.2003.01646.x PMid:12823150
https://doi.org/10.4166/kjg.2012.59.4.275 PMid:22540424
https://doi.org/10.21276/ijcmr.2019.6.9.34
https://doi.org/10.1097/MEG.0b013e328308b300  
PMid:19086146