DOI: https://doi.org/10.3329/medtoday.v36i2.74800

ORIGINAL ARTICLE OPEN ACCESS

Spectrum of Upper Gastrointestinal Endoscopy Findings in Patients with Dyspepsia

Md. Nahian Faruque Chowdhury*[1], Modhusudhan Saha[2], Moloy Kumar Sur Chowdhury[3]

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 haital 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.

Number of Tables: *04; Number of References: 27; Number of Correspondences: 03.*

***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 vomiting[1,2]. The prevalence of dyspepsia is about 20-30% globally. However, studies from the Indian subcontinent approximated it to be nearly 30 to 49%[3,4]. Dyspepsia may be linked to serious GI pathological conditions like ulcer, stricture or malignancy[5]. 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 [6-9]. 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 endoscopy[10]. 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 dyspepsia[11,12].

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

Received: *06 January 2024* ***Accepted revised version:*** *29 April 2024*

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

Sex	Number	Age range	Mean	SD
Male	405 (50.5%)	14 to 87	42.4346	15.647
Female	397 (49.5%)	14 to 82	42.0378	15.263

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

Distribution of site of endoscopic findings	Number	Percentage (%)
Normal	140	17.46
Esophagus	73	9.10
Stomach	573	71.44
Duodenum	131	16.33

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 ucer, 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

Findings	Number	Age up to 25	26-45	26-60	>60	P Value
Male	405 (50.5%)	56 (13.83%)	188(46.42%)	104(25.67)	57(14.07%)	
Female	397 (49.5%)	65 (16.37%)	174(43.83%)	112(28.21%)	46(11.59%)	
Normal	140(17.46%)	39 (27.86%)	69 (49.29%)	23 (16.43%)	9 (6.43%)	0.00
NEAG	341(42.52%)	48 (14.08%)	157(46.04%)	88 (25.81%)	48(14.08%)	0.59
EAG	52 (6.48%)	3 (5.77%)	19 (36.54%)	22 (42.31%)	8 (15.38%)	0.025
Pangastritis	63 (7.86%)	13 (20.63%)	35 (55.55%)	14 (22.21%)	1 (1.59%)	0.017
Gastritis	46 (5.74%)	5 (10.87%)	20 (43.48%)	15 (32.61%)	6 (13.04%)	0.754
Antral ulcer	34 (4.24%)	2 (5.89%)	12 (35.29%)	15 (44.11%)	5 (14.71%)	0.79
DU (remission)	29 (3.62%)	3 (10.34%)	13 (44.82%)	8 (27.59%)	5 (17.24%)	0.78
DU active)	34 (4.24%)	6 (17.65%)	15 (44.12)	5 (14.71%)	8 (23.53%)	0.14
DU duodenitis)	50 (6.23%)	7 (14.0%)	22 (44.0%)	16 (32.0%)	5 (10.0%)	0.83
DU (GOO)	13 (1.62%)	2 (15.38%)	5 (38.46%)	5 (38.46%)	1 (7.69%)	0.78
Carcinoma antrum	14 (1.74%)	0	4 (28.57%)	4 (28.57%)	6 (42.86%)	0.76
Carcinoma stomach (other	7 (0.87%)	0	1 (14.29%)	2 (28.57%)	4 (57.14%)	0.70
Oesophageal candidiasis	14 (1.74%)	0	9 (64.29%)	4 (28.57%)	1 (7.14%)	0.30
Oesophagitis	6 (0.75%)	0	5 (83.33)	0	1 (16.67%)	0.106
Oesophageal ulcer	10 (1.25%)	0	2 (20.0%)	6 (60%)	2 (20.0%)	0.109
Carcinoma oesophagus	6 (0.75%)	1 (14.29%)	1 (14.29%)	2 (28.57%)	3 (42.86%)	0.179
Hiatal hernia	13 (1.62%)	0	2 (15.38%)	6 (46.15%)	5 (38.46%)	0.006
Oesophageal varix	21 (2.62%)	1 (4.76%)	6 (28.57%)	8 (38.10%)	6 (28.57%)	0.044
Portal hypertensive gastropathy	16 (1.20%)	1 (6.25%)	8 (50.0%)	5 (31.25%)	2 (12.50%)	0.80
Carcinoma duodenum	5 (0.62%)	0	0	3 (60.0%)	2 (40.0%)	0.045
Inlet patch	3 (0.37%)	0	2 (66.67%)	1 (33.33%)	0	`

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

Findings	Total	Female (%)	Male (%)	P value
Normal	140	100 (71.43%)	40 (28.57%)	0.00
NEAG	341	168 (49.26%)	173 (50.73%)	0.326
EAG	52	23 (44.23%)	29 (55.77%)	0.26
Pangastritis	63	14 (22.22%)	49 (77.78%)	0.00
Antral ulcer	34	14 (41.18%)	20 (58.82%)	0.207
Gastritis	46	18 (39.13%)	28 (60.87%)	0.097
DU remission	30	8 (26.67%)	22 (73.33%)	0.008
DU active	34	9 (26.47%)	25 (73.53%)	0.005
DU duodenitis	50	15 (30.0%)	35 (70.0%)	0.003
DU GOO	13	1 (7.70%)	12 (92.30%)	0.002
Ca antrum	14	3 (21.43%)	11 (78.57%)	0.03
Carcinoma stomach (others)	10	4 (40.0%)	6 (60.0%)	0.48
Oesophgeal candidiasis	14	8 (57.14%)	6 (42.86%)	0.38
oeso ulcer	10	5 (50.0%)	5 (50.0%)	0.611
carcinoma oesophagus	7	1 (14.29%)	6 (85.71%)	0.065
Hiatus hernia	13	8 (61.54%)	5 (38.46%)	0.276
Oesophageal varix	21	3 (14.29%)	18 (85.71%)	0.001
Ca duodenum	5	0	5 (100.0%)	0.032

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 malignancy. The prevalence of GERD and IBS are higher in patients with dyspepsia compared with patients without dyspepsia[13,14]. 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 dyspepsia[15]. 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 studies[16,17]. The gender ratio of male and female were nearly similar[9]. 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 dyspepsia[16]. Another study from Nepal Medical College reported normal findings in 17.87% of patients who underwent EGD for dyspepsia[17]. Similar findings were revealed in Wallace et al. and Sanjiv et al[18,19]. 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 al[20], Lopez et al[21], Sanjiv et al[19], and Thomson et al[22]. However Wallace et al. reported that age was significant but weak independent predictor of abnormal endoscopic findings[18]. 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 studies of Jung et al[23]. and Sanjiv et al[19] that revealed male 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 al[16] and Yellapu et al[24] 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 al[25], Rajendran et al[16], and Yellapu et al[24]. Other common endoscopic abnormality in the present study were gastric ulcer, duodenal ulcer, oesophageal candidiasis, hiatal 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 esophageal carcinoma. The result was in concordance with the previous study done by Dinesh et al[26], Rajendran et al[16], and Yellapu et al[24] 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 age[27].

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.

Acknowledgement:

We are grateful to the authority and endoscopy nurses of Popular Medical Centre for their unconditional support for this study.

References:

1. Talley NJ, Zinsmeister AR, Schleck CD, Melton LJ 3rd. Dyspepsia and dyspepsia subgroups: A population-based study. Gastroenterology. 1992; 102:1259-1268.

https://doi.org/10.1016/0016-5085(92)90764-P

PMid:1551533

2. Talley NJ, Fett SL, Zinsmeister AR, Melton LJ 3rd. Gastrointestinal tract symptoms and self-reported abuse: A population-based study. Gastroenterology. 1994; 107:1040-1049.

https://doi.org/10.1016/0016-5085(94)90228-3

PMid:7926457

3. Grainger SL, Klass HJ, Rake MO. Prevalence of dyspepsia: the epidemiology of overlapping symptoms. Postgrad Med J. 1994; 70 (821):154-161.

https://doi.org/10.1136/pgmj.70.821.154

PMid:8183747 PMCid:PMC2397860

4. Ghoshal UC, Abraham P, Bhatt C. Epidemiological and clinical profile of irritable bowel syndrome in India: report of the Indian Society of Gastroenterology Task Force. Indian J Gastroenterol. 2008; 27(1):22-28.

5. Davidson's Principle and practice of medicine. Alimentary

tract and pancreatic disease. Presenting problem in gastrointestinal disease. Dyspepsia. 24th edition: 796-798.

6. Talley NJ, Vkil N. Guidelines for management of dyspepsia. Am J Gastroenterol. 2005; 100(10):2324-2337.
https://doi.org/10.1111/j.1572-0241.2005.00225.x
PMid:16181387

7. Robert S Fisher and Henry P parkman.Management of nonulcer dyspepsia. The New England Journal of Medicine1998; 11:1376- 1381.
https://doi.org/10.1056/NEJM199811053391907
PMid:9801400

8. Richter JE.Dyspepsia: organic causes and differential characteristics from functional dyspepsia. Scand J Gastroenterol Suppl. 1991; 182:11-16.
https://doi.org/10.3109/00365529109109531
PMid:1896824

9. Ahmed Gado, Basel Ebeid, Aida Abdelmohsen, et al. Endoscopic evaluation of patients with dyspepsia in a secondary referral hospital in Egypt. Alexandria Journal of Medicine. 2015;51:179-184.
https://doi.org/10.1016/j.ajme.2013.09.002
https://doi.org/10.1016/j.ajme.2013.10.001

10. Drossman DA, Chang L, Chey WD. Rome IV-functional gastrointestinal disorders: Disorders of gut-brain interaction. Gastroenterology. 2016; 150:1257-1261.
https://doi.org/10.1053/j.gastro.2016.03.035
https://doi.org/10.1053/j.gastro.2016.02.032

11. Keller J, Layer P. Chronic upper abdominal pain: Diagnostic and therapeutic alogrithm (Article in German). Dtsch Med Wochenschr. 2015; 140(10):718-722.
https://doi.org/10.1055/s-0041-101692
PMid:25970409

12. Aasma Shaukat, Amy Wang, Ruben D Acosta, et al. ASGE Guidelines The role of endoscopy in dyspepsia. Gastrointestinal Endoscopy. 2015; 82(2):227- 232.
https://doi.org/10.1016/j.gie.2015.04.003
PMid:26032200

13. Ford AC, Marwaha A, Lim A, et al. Systematic review and meta-analysis of the prevalence of irritable bowel syndrome in individuals with dyspepsia. Clin Gastroenterol Hepatol. 2010; 8:401-409.
https://doi.org/10.1016/j.cgh.2009.07.020
https://doi.org/10.1016/j.cgh.2010.05.031

14. Talley NJ. Functional (non-ulcer) dyspepsia and gastroesophageal reflux disease: one not two diseases? Am J Gastroenterol. 2013; 108:775-777.
https://doi.org/10.1038/ajg.2013.102
PMid:23644963

15. Sftaukat A, Wang A, Acosta RD, et al. The role of endoscopy in dyspepsia, Prepared By: ASGE standards of practice committee; American Society for Gastrointestinal Endoscopy. 2015; 82: 0016-5107.

16. Rajendran K, Chidambaranathan S, Sathyanesan J, et al. Spectrum of upper gastrointestinal endoscopy findings in patients with dyspepsia and its relation to alarm symptoms. International Journal of Medical and Health Research. 2018; 4:175-177.

17. Shrestha R, Karki S, Pandey B, et al. Upper gastrointestinal endoscopy findings in patient presenting with dyspepsia. Journal of Patan Academy of Health Sciences. 2015; 2:19-22.
https://doi.org/10.3126/jpahs.v2i2.20325

18. Wallace MB, Durkalski VL, Vaughan J, et al. Age and alarm symptoms do not predict endoscopic findings among patients with dyspepsia: a mukticentre database study. Gut. 2001; 49(1):29-34.
https://doi.org/10.1136/gut.49.1.29
PMid:11413107 PMCid:PMC1728370

19. Sanjiv M, Khean LG. Clinically Significant Endoscopic Findings in a Multi-Ethnic Population with Uninvestigated dyspepsia. Dig Dis Sci. 2012; 57(12):3205-3212.
https://doi.org/10.1007/s10620-012-2256-7
PMid:22688184

20. Gado A, Ebeid B, Abdelmohsen A. Endoscopic evaluation of patients with dyspepsia in a secondary referral hospital in Egypt. Alex J Med. 2015; 51(3):179-184.
https://doi.org/10.1016/j.ajme.2013.10.001

21. Lopez LH, Dibildox M, Ramirez BE, et al. Is endoscopy necessary to initiate medical treatment in primary level medical care patients with not investigated dyspepsia? Rev Gastroenterol Mex. 2003; 68(2):100-106.

22. Thomson AB, Barkun AN, Armstrong D, et al. The prevalence of clinically significant endoscopic findings in primary care patients with uninvestigated dyspepsia: the Canadian Adult Dyspepsia Empiric Treatment-Prompt Endoscopy (CADET-PE) study. Aliment Pharmacol Ther. 2003; 17(12):1481-1491.
https://doi.org/10.1046/j.1365-2036.2003.01646.x
PMid:12823150

23. Jung HK, Kim SE, Shim KN, et al. Association between dyspepsia and upper endoscopic findings (Article in Korean). Korean J Gasroenterol. 2012; 59(4):275-281.
https://doi.org/10.4166/kjg.2012.59.4.275
PMid:22544024

24. Yellapu R, Boda S. pper Gastrointestinal Endoscopic Findings of Patients Presenting with Dyspepsia - A Tertiary Care Centre Experience. International Journal of Contemporary Medical Research. 2019; 6(9):2454-2459.
https://doi.org/10.21276/ijcmr.2019.6.9.34

25. Mubarik M, Bhat FA, Malik GM, et al. Diagnostic yield of upper GIendoscopy and ultrasonography in

Patients of dyspepsia. JK-Practitioner. 2012; 17(4):15-18.

26. Dinesh HN, Shashidhar HB, Prasad V. Endoscopic Evaluation of Patients with Dyspepsia in a Tertiary Care Hospital. IOSR J Dent Med Sci. 2015; 15(10):51-54.

27. Salkic N, Zildzic M, Zerem E, et al. Simple uninvestigated dyspepsia: Age threshold for early endoscopy in Bosnia and Herzegovina. Eur J Gastroenterol Hepatol. 2009; 21:39- 44.
https://doi.org/10.1097/MEG.0b013e328308b300
PMid:19086146