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Original Article

Correlation between Clinical and Endoscopic Findings in Patients with Dyspepsia at a Tertiary-Care Hospital of Bangladesh

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Abstract

Background: *Dyspepsia is a prevalent symptom worldwide, affecting 7%-34.2% of populations, and has a significant impact on patients and healthcare systems. The study aimed to investigate the relationship between clinical and endoscopic findings to improve cost-effectiveness in endoscopy.*

Materials and methods: *This observational study was conducted at the Department of Gastroenterology, Chattagram Maa-O-Shishu Hospital Medical College (CMOSHMC) over a period of 34 months from January 2020 to October 2022. Study population was patients aged 18 years and above with dyspepsia symptoms referred from various departments of this hospital for upper gastrointestinal tract endoscopy.*

Results: *The study involved 705 patients, with the largest age group experiencing dyspepsia symptoms being 28-37 years old (25.5%). Dyspepsia was more prevalent in patients below 57 years old (83.1%) compared to those above 57 years old (16.8%). Females had a higher incidence of dyspepsia than males, with a ratio of 1.9:1. Abdominal pain was the most common symptom (43.96%). Endoscopic findings included peptic ulcers (14.6%), gastric ulcer (8.36%), duodenal ulcer (6.24%), gastritis (32.48%), oesophagitis (13.33%), gastric carcinoma (1.84%), and normal results (34.60%). Female gender was associated with normal endoscopic findings ($p<0.05$).*

Conclusion: *The study concludes that both uninvestigated and functional dyspepsia was more prevalent in females. Abdominal pain was the most common complaint followed by abdominal burning. The study also revealed that prevalence of functional dyspepsia decreases with age, giving way to organic lesions. Gastritis was a frequent endoscopic finding; however, its clinical relevance is uncertain.*

Key words: Correlation; Dyspepsia; Endoscopy; Tertiary care.

INTRODUCTION

Dyspepsia is a common symptom in most populations of the world with prevalence between 7%-34.2%.[1] Two studies conducted in Bangladesh revealed a high prevalence of dyspepsia, with rates of 41.4% and 61.9%.[2,3] It comprises several upper abdominal symptoms namely epigastric pain, burning sensation, postprandial fullness, early satiation, bloating, belching and nausea.[4] People with dyspepsia can be very distressed with poor quality of life. Functional dyspepsia affects physical, mental and social aspects of life in general population.[5] The impact of this condition on patients and health care services has been shown to be significant. In a community survey of several European and North American populations, 20% of people with dyspeptic symptoms consulted either primary care physicians or hospital specialists; more than 50% of dyspepsia sufferers were on medication most of the

time and approximately 30% of dyspeptics took days off work or schooling due to their symptoms.[6] Several studies showed that correct elicitation of symptoms can help differentiating peptic ulcer from non-ulcer dyspepsia.[7-10] Other studies found that most dyspeptic symptoms cannot discriminate between peptic ulcer and non-ulcer dyspepsia.[11-13] The aim of the present study was to explore some demographic profile, common presenting dyspepsia complaints and pattern of endoscopic findings in a tertiary care hospital of Bangladesh.

MATERIALS AND METHODS

This observational study was conducted at the Department of Gastroenterology, Chattagram Maa-O-Shishu Hospital Medical College (CMOSHMC) over a period of 34 months (From 01.01.2020 to 31.10.2022). Patients with dyspepsia symptoms from various departments of this hospital were referred to endoscopy unit for upper gastrointestinal tract endoscopy. In this article, the word endoscopy will refer to upper gastrointestinal endoscopy. Data were collected from the work station in the endoscopy suite and were analysed using SPSS version 25.

Inclusion criteria

- Age >18yrs
- All patients with one or more of the following symptoms: epigastric pain, burning sensation, postprandial fullness, early satiation, bloating, belching and nausea.

Dyspepsia symptoms were entered in the history by the treating physicians. The patients were then subjected to endoscopy.

Exclusion criteria

- Patients with other gastrointestinal disorders – irritable bowel syndrome, gastro-oesophageal reflux disease, gall stones, pancreatitis
- History of gastric surgery, cholecystectomy
- Overwhelming other mental or physical disease – carcinoma, liver disease, renal failure, bowel obstruction, major psychoses
- Endoscopic or radiological proof of peptic ulceration in the preceding 12 months
- Pregnant women.

After endoscopy, the patients were grouped into two groups:

i) Peptic Ulcer Disease (PUD) – where endoscopy showed gastric ulcer, duodenal ulcer, pyloric channel ulcer or any combination.

ii) Functional Dyspepsia (FD) – where the endoscopy was normal.

The ethical aspects of the study were approved by the Institutional Review Board of the CMOSHMC.

RESULTS

From the computer registry, 705 patients were finally included in this study. Table I shows that the largest age group with dyspepsia symptoms was 28-37 years comprising 25.5% (180 subjects). Mean age of patients with dyspepsia was 41.64 yrs.

Table I Frequency of dyspepsia by age

Age Group	Frequency	Percentage
18-27 years	138	19.6
28-37 years	180	25.5
38-47 years	146	20.7
48-57 years	122	17.3
58-67 years	77	10.9
68-77 years	29	4.1
≥ 78 years	13	1.8
Total	705	100

There was a sharp decline in the prevalence of dyspepsia from 17.3% in 48-57-year group to 10.9% in 58-67-year age. In our study, there was much lower prevalence of dyspepsia in adults above 57 years (16.8%) compared to those below 57 years (83.1%).

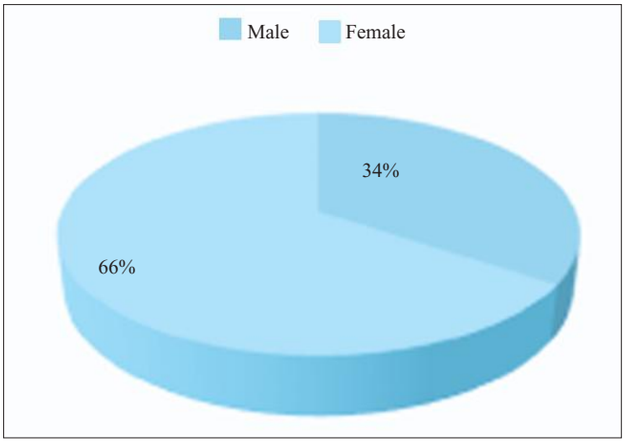

Figure 1 Distribution of respondents according to sex

Figure 1 shows that dyspepsia was more common in females (Female: Male ratio being 1.9:1).

Table II Frequency of symptoms

	Symptoms	Frequency	Percentage
1	Abdominal pain	310	43.96
2	Abdominal burn	90	12.76
3	Early satiety	67	9.49
4	Nausea	57	8.08
5	Heartburn	42	5.95
6	Anorexia	38	5.38
7	Bloating	36	5.10
8	Postprandial fullness	35	4.96
9	Belching	30	4.25
	Total	705	100%

The most common complaint was abdominal pain (310 patients, 43.96%). Other symptoms were abdominal burn (12.76%), early satiety (9.49%), nausea (8.08%), heartburn (5.95%), anorexia (5.38%), bloating (5.1%), postprandial fullness (4.96%) and belching (4.25%). (Table II).

Table III Prevalence of endoscopic findings

Endoscopic Findings		Frequency	Percentage
Normal Upper	GIT	244	34.60%
PUD	GU	59	8.36%
	DU	44	6.24%
Gastritis		229	32.48%
Oesophagitis		94	13.33%
Ca Stomach		13	1.84%
Oesophageal hiatus hernia		22	3.12%
	Total	705	100%

Endoscopic findings are summarised in Table III. Peptic ulcers were found in 103/705 subjects, a point prevalence of 14.6%. Among them 8.36% had gastric ulcer and 6.24% had duodenal ulcer. Endoscopic finding was normal in 34.60% patients. Other significant endoscopic findings were gastritis (32.48%), oesophagitis (13.33%) and gastric carcinoma (1.84%). The mean age for peptic ulcer disease was 50.53 years and for normal endoscopy 36.34 respectively (Table IV).

Table V shows that female gender was significantly associated with normal endoscopic finding

Table IV Mean age at presentation of dyspepsia

Findings	Mean age	SD
Normal Upper GIT (244)	36.35	15.09
Gastric ulcer (59)	50.28	15.09
Duodenal ulcer (44)	37.25	14.51
PUD (103)	50.53	14.49

Table V Correlation of dyspepsia with gender

Findings		Male	Female	Chi Square Value	p Value
Normal Upper GIT (244)		65 (26.64%)	179 (73.36%)		
	Gastric ulcer (59)	49	10	79.17(app.)	0.000**
PUD(103)	Duodenal ulcer(44)	31	13		
	PUD(103)	80 (77.66%)	23 (22.33%)		
	Total	145	202		

*Mark indicates significant association between findings & gender at 5% level of significance.

DISCUSSION

In this observational study, dyspepsia was found to be prevalent in young and middle-aged subjects, declining with age. Other studies also indicated a decline in the prevalence of dyspepsia symptoms with age.[14-17] An Italian study found that the age range of 35-50 years was the most common among dyspeptic patients.[18] Peak prevalence of dyspepsia was noted between the ages 45-54 in a Canadian survey.[19] Despite these trends, age extremities has not been identified as a predictor of dyspepsia.[20, 21]

Dyspepsia was more prevalent among our female subjects. Similar findings were also shown Iran and US.[20-23] In comparison, dyspeptic patients in a study by Maconi et al. had a nearly equal gender distribution.[18] In a review of 22 dyspepsia studies, six reported a slightly higher incidence of dyspepsia among women, three showed a higher incidence among men, and the rest did not report any differences.[24]

Majority of the subjects complained of abdominal pain. Other symptoms were abdominal burn, early satiety, nausea, heartburn, anorexia, bloating, postprandial fullness and belching.

In this study duodenal ulcers occurred at an earlier age than gastric ulcer as indicated by mean ages at diagnosis (37.25 years and 50.28 years respectively). In a population survey in Bangladesh, Azad Khan AK et al found that majority of duodenal ulcers were between 21 and 50 years, with peak incidence in the fourth decade of life.[2] Similarly, a study in India also showed a high prevalence of peptic ulcers disease in younger population with a low median age of 28 years.[25] A number of studies showed that prevalence of peptic ulcer rise with age, peaking between the fourth and seventh decade. [26-28]

Our study revealed a considerable number of gastritis on endoscopic examination - 32.48% of 705. Johnsen et al. found superficial gastritis in 20.1% and atrophic gastritis in 3.7% in their study.[29] In another study, 43.5% of study population had antral gastritis.[30] The association between gastritis and dyspeptic symptoms is uncertain. Many authors disputed any association, whereas Earlam et al claim that corpus and antral gastritis could cause symptoms. [7, 9, 14-16, 31]

In our study, endoscopy was normal in 34.6% subjects. Abnormal finding was obtained in 65.37%, including peptic ulcer disease (14.6%), oesophagitis (13.33%), gastritis (32.48%), gastric carcinoma (1.84%), and oesophageal hiatus hernia (3.12%). Piotrowicz G et al. reported normal endoscopy in 23% and abnormal findings in 77%, including gastritis (56.2%), peptic ulcer (12.2%), gastric carcinoma (2.6%), duodenitis (3%) and oesophageal hiatus hernia (3%).[30]

Those subjects with normal endoscopic finding can be considered to have functional dyspepsia. The frequency of normal endoscopic findings varied greatly across different studies, ranging from 19% to 71%.[15,16,30,32] A significantly higher proportion of females (73.36%) were found to have normal results compared to males ($p<0.05$). Other studies also found female preponderance in functional dyspepsia ($p<0.05$).[3,17,20,30,33] On the other hand, for patients diagnosed with peptic ulcer disease, the majority (77.66%) were males in this study.

LIMITATION

The limitations of this study must also be considered. No structured questionnaire was used in this study. The population size was small. As the study was on hospital patients, it was highly selected regarding seriousness of symptoms and disease.

CONCLUSION

The study concludes that both uninvestigated and functional dyspepsia was more prevalent in females. Abdominal pain was the most common complaint followed by abdominal burning. The study also revealed that prevalence of functional dyspepsia decreases with age, giving way to organic lesions. Gastritis was a frequent endoscopic finding; however, its clinical relevance is uncertain.

RECOMMENDATION

A multicentre study with large sample size is recommended to obtain the actual scenario of dyspepsia in the study population.

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DISCLOSURE

All the authors declared no competing interest.

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