





Original Article

Profile of Upper Gastrointestinal Endoscopy Findings in Dyspeptic Patients

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ABSTRACT

Background and Objectives: Dyspepsia is the commonest indication for upper gastrointestinal (UGI) endoscopy. This study was done to describe the UGI endoscopic findings and the risk factors like alcohol abuse, smoking, pan chewing, and drug intake and the endoscopic findings in patients with alarm symptoms.

Materials and Methods: This was an institution-based (Department of General Surgery at Government T.D. Medical College, Alappuzha) observational study (descriptive) on 250 dyspeptic patients who underwent UGI endoscopy for the duration of 1 year between November 2018 and October 2019.

Results: Among the patients, 130 were males and 120 were females. The mean age was 51.36 years. The majority were between 36 and 65 years (65.6%) of age. Precisely, 28.8% showed alarm symptoms. The commonest alarm symptoms were vomiting (26.8%), weight loss (7.6%), and gastrointestinal bleed (6.4%). Also, 237 (94.8%) patients had abnormal findings. The commonest abnormal findings included gastric erosions/erythema in 197 (78.8%), duodenal erosions/erythema in 69 (27.6%), and esophageal erosions/erythema in 56 (22.4%) patients. Substance use included smoking (29.6%), followed by alcoholism (27.2%) and pan chewing (14%). Dyspepsia along with alarm symptoms was seen in patients with malignant endoscopic findings. The commonest malignancy was stomach cancer (4.8%).

Conclusion: Dyspepsia was more common among males aged 36 to 65 years. Gastric, duodenal, and esophageal erosions/erythema were the commonest abnormal findings. Smoking and alcoholism were common in patients with dyspepsia. Malignant endoscopic findings were common in patients with alarm symptoms. UGI endoscopy is an effective and appropriate initial investigation to assess patients with dyspepsia.

Keywords: UGI endoscopy, dyspepsia, gastric, alarm symptoms, malignancy

INTRODUCTION

Dyspepsia with alarming features is thought to be associated with serious gastrointestinal (GI) diseases such as malignancy or ulcer.^[1] Earlier, the diagnosis of upper gastrointestinal (UGI) tract was based on clinical and barium meal studies. Now the UGI endoscopy has a major role in both diagnosing and treating the UGI tract diseases effectively. Dyspeptic patients over 55 years of age, or those with alarm features, should undergo prompt esophago-gastro-duodenoscopy as it is the investigation of choice for evaluation of dyspepsia refractory to medical treatment and for dyspepsia with alarm symptoms. Advantage of negative endoscopy is that it reduces patient anxiety and increases patient satisfaction.^[1]

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This study was performed to know the pattern of various UGI diseases diagnosed with UGI endoscopy in the Department of General Surgery in a tertiary hospital and compare with similar studies in other parts of the world, and to describe the risk factors and alarming symptoms that help in early detection and treatment of UGI diseases, hence reducing the morbidity and mortality rate of uninvestigated dyspepsia.

MATERIALS AND METHODS

The primary objective was to describe the esophageal, gastric, and duodenal endoscopic findings among patients undergoing UGI endoscopy for dyspepsia. The secondary objectives were to describe the endoscopic findings in patients with specific risk factors like alcohol abuse, smoking, pan chewing, and drug intake and to describe the endoscopic findings in patients with alarm symptoms such as vomiting, weight loss, GI bleed, dysphagia, odynophagia, and jaundice.

It was an institution-based observational study (descriptive) conducted in the General Surgery department of a tertiary teaching hospital for 1 year after getting approval from the Ethics Committee. Sample size, based on a study done by Shashikumar *et al.*,^[5] which identified prevalence of gastric erosion/erythema or duodenal erosions/erythema as 28%, and using the formula $Z\alpha^2PQ/L^2$, was calculated as 247. All patients undergoing UGI endoscopy in the Department of Surgery for dyspepsia were included. Patients <18 years, those with inadequate preparation, known malignancy, and acute conditions like UGI bleed, terminal illness, and high-risk comorbidity were excluded. Independent variables were age, sex, drug intake, addictions, and diet habits. Dependent variables included esophageal erosions/erythema grades 1 and 2, carcinoma esophagus, gastric erosion/erythema, polyp, carcinoma stomach, peptic ulcer, duodenal erosions/erythema, duodenal ulcer, and periampullary carcinoma. Patient details of history and examination findings were recorded as per proforma and endoscopy findings collected, entered in Microsoft Excel, and statistically analyzed using the software *Statistical Package for the Social Sciences* (IBM SPSS). Qualitative variables were entered as percentages and proportions.

RESULTS

A total of 399 patients with dyspepsia had endoscopy, out of which 250 patients were included. Among them, 130 (52%) were males and 120 (48%) were females with a sex ratio of 1.08. Mean age was 51.36 years. Maximum patients were between 36 and 65 years of age, which accounted for 65.6%. Least numbers were between 18 and 25 (13%) and 76 and 85 (13%) years, as shown in [Figure 1].

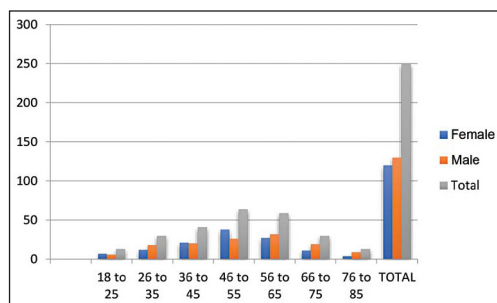


Figure 1: Age- and sex-wise distribution of study subjects.

In this study, out of 250 patients, only 7 (2.8%) were vegetarians. Majority (243 [97.2%]) followed mixed diet habits. Majority of our subjects (206 [82.4%]) did not have a history of drug intake. Aspirin was used by 34 (13.6%) patients whereas 10 (4%) had used nonsteroidal anti-inflammatory drugs (NSAIDs). The most common alarm symptom was vomiting (67 [26.8%]), followed by weight loss (19 [7.6%]) and GI bleed (16 [6.4%]). Less common were dysphagia (9 [3.65%]), odynophagia (95 [2%]), and jaundice (1 [0.4%]). As detected in our study, 74 (29.6%) of the patients were smokers, 68 (27.2%) consumed alcohol, and 35 (14%) had a habit of pan chewing.

The positive endoscopic findings commonly observed were of mixed pattern (55.2%), involving different parts of the UGI tract. Mixed findings were more common in stomach and duodenum (64 [25.6%]); esophagus, stomach, and duodenum (41 [16.4%]); and esophagus and duodenum (5 [2%]). Isolated findings were commonly seen in stomach (78 [31.2%]) followed by esophagus (15 [6%]) and duodenum (6 [2.4%]). However, 13 (5.2%) patients showed normal findings.

Most common overall finding was gastric erosion/erythema in 197 (78.8%) of the subjects. Among the cases with gastric erosion/erythema, most common form was antral gastric erosion/erythema, which was seen in 190 (76%) subjects. Pangastric erosion/erythema was seen in 71 (28.4%) patients. Least common overall findings among different sites—gastroesophageal (GE) junction polyp (one patient) and periampullary carcinoma (one patient)—are detailed in [Table 1].

Most common finding in esophagus was lax LES—lower esophageal sphincter—in 71 (28.4%) patients, followed by esophageal erosions/erythema in 56 (22.4%) patients. Least common finding in esophagus was GE junction polyp in one patient (0.4%). Carcinoma was seen in seven (2.8%) patients. The stomach finding was mostly antral gastric erosion/erythema (76%). Least common was portal hypertension gastropathy in three patients (1.2%). Carcinomatous lesions in stomach were seen in 12 (4.8%), which was the most commonly visualized malignant lesions in our study. The

Table 1: Distribution of study subjects having endoscopic findings in each organ.

Site	Findings	n (%)
Esophagus	Barrett's esophagus	29 (11.6)
	Varices	8 (3.2)
	Esophageal erosions/erythema	56 (22.4)
	Esophageal polyp	4 (1.6)
	Lax LES	71 (28.4)
	Esophageal ulcer	8 (3.2)
	Hiatus hernia	27 (10.8)
	GE junction polyp	1 (0.4)
Stomach	Carcinoma esophagus	7 (2.8)
	Gastric erosion/erythema	197 (78.8)
	Fundus gastric erosion/erythema	76 (30.4)
	Body gastric erosion/erythema	92 (36.8)
	Antral gastric erosion/erythema	190 (76)
	Pyloric gastric erosion/erythema	98 (39.2)
	Pangastric erosion/erythema	71 (28.4)
	Gastric ulcer	30 (12)
	Gastric polyp	9 (3.6)
	Carcinoma stomach	12 (4.8)
	Portal hypertension gastropathy	3 (1.2)
Duodenum	Duodenal erosions/erythema	69 (27.6)
	Duodenal polyp	5 (2)
	Duodenal ulcer	53 (21.2)
	Periampullary carcinoma	1 (0.4)

Abbreviations: GE, gastroesophageal; LES, lower esophageal sphincter.

most common finding in duodenum was duodenal erosions/erythema in 69 (27.6%) patients. Least common was duodenal polyp in five (2%) patients. Periampullary carcinoma was seen in one patient.

Alcohol intake was statistically significant in esophageal varices, lax LES, carcinoma esophagus, pangastric erosion/

erythema, gastric ulcer, carcinoma stomach, and duodenal erosions/erythema in this study. Smoking was found to be statistically significant in esophageal varices, lax LES, carcinoma esophagus, carcinoma stomach, and duodenal erosions/erythema. Pan chewing was statistically significant in hiatus hernia (the pan chewing might have simply aggravated the dyspepsia in patients with pre-existing hiatus hernia, making the patient seek medical help and finally ending up doing an endoscopy to reveal a hiatus hernia) and periampullary carcinoma [Table 2].

Alarm symptoms were statistically significant in hiatus hernia, carcinoma esophagus, carcinoma stomach, and periampullary carcinoma [Table 3].

DISCUSSION

Initial endoscopy in management of dyspepsia leads to significant improvement in symptoms, quality of life, and reduction in use of proton pump inhibitors.^[2] Endoscopy helps in early detection of carcinoma in cases of dyspepsia.^[3] In the present study, out of 250 subjects, 130 were males and 120 females. Majority were in the age group of 36 to 65 years (65.6%). Least were among 18 to 25 (13%) and 76 to 85 (13%) years. Only seven of the patients were vegetarians. Majority (82.4%) did not give a history of drug intake. Aspirin was used by 13.6%, and 4% took NSAIDs. Also, 12.8% had alarm symptoms. Most common alarm symptom was vomiting (26.8%), followed by unintentional weight loss (7.6%) and GI bleed (6.4%). Furthermore, 5.29.6% were smokers, 27.2% consumed alcohol, and 14% had a habit of pan chewing. Positive endoscopic findings were commonly observed in mixed pattern (55.2%), involving different parts of the UGI tract. Isolated findings were commonly seen in stomach (31.2%), followed by esophagus (6%) and duodenum

Table 2: Distribution of study subjects according to alcohol, smoking, and pan use as risk factors.

Findings	Alcohol				Smoking				Pan use			
	Y	N	Chi square	p-Value	Y	N	Chi square	p-Value	Y	N	Chi square	p-Value
Barrett's esophagus	8	21	1.659	0.198	6	23	0.003	0.003	5	24	3.807	0.051
Varices	6	2	17.099	<0.05	7	1	21.746	21.746	1	7	0.227	0.633
Esophageal erosions/erythema	44	14	1.41	0.235	15	43	0.983	0.983	7	51	1.699	0.192
Esophageal ulcer	1	7	0.215	0.643	3	5	1.314	1.314	2	6	3.245	0.072
Lax LES	7	64	6.578	<0.05	7	64	4.227	4.227	4	67	2.19	0.139
Hiatus hernia	4	23	0.315	0.575	6	21	0.019	0.019	7	20	13.216	<0.05
Carcinoma esophagus	4	3	6.936	<0.05	5	2	10.876	10.876	1	6	0.387	0.534
Pangastric erosion/erythema	20	51	5.702	<0.05	16	55	0.106	0.106	2	69	3.619	0.057
Gastric ulcer	12	18	5.909	<0.05	10	20	2.26	2.26	1	29	0.84	0.359
Carcinoma stomach	6	6	8.038	0.05	9	3	21.84	21.84	1	11	0.002	0.965
Duodenal erosions/erythema	20	49	6.477	<0.05	21	48	4.865	4.865	6	63	0.063	0.802
Duodenal ulcer	12	41	0.65	0.42	11	43	0.008	0.008	3	50	0.5	0.479
Periampullary carcinoma	0	1	0.232	0.63	0	1	0.27	0.27	1	0	11.546	<0.05

Abbreviations: LES, lower esophageal sphincter; N, no; Y, yes.

Table 3: Distribution of study subjects according to alarm symptoms.

Site	Findings	Alarm symptoms		Chi square	p-Value
		Yes	No		
Esophagus	Barrett's esophagus	3	26	0.177	0.674
	Varices	2	6	1.102	0.294
	Esophageal erosions/erythema	7	51	0.036	0.849
	Esophageal ulcer	1	7	0.001	0.979
	Lax LES	7	64	1.26	0.262
	Hiatus hernia	7	20	4.672	<0.05
	Carcinoma esophagus	5	2	22.178	<0.05
Stomach	Pangastric erosion/erythema	12	59	1.494	0.222
	Gastric ulcer	6	24	0.062	0.803
	Carcinoma stomach	9	3	43.692	<0.05
Duodenum	Duodenal erosions/erythema	9	60	0.005	0.943
	Duodenal ulcer	5	48	0.683	0.409
	Periampullary carcinoma	1	0	6.84	<0.05

Abbreviation: LES, lower esophageal sphincter.

(2.4%). However, 5.2% of them showed normal endoscopic findings. Mixed findings were more common in stomach and duodenum (25.6%). Most common overall finding was gastric erosion/erythema (78.8%). Most common esophageal finding was lax LES (28.4%) followed by esophageal erosions/erythema (22.4%). Most common finding in stomach was antral gastric erosion/erythema (76%). Most common finding in duodenum was duodenal erosions/erythema (27.6%). Carcinoma stomach was seen in 4.8%, carcinoma esophagus in 2.8%, and periampullary carcinoma was seen in 0.4% patients. Alarm symptoms were statistically significant in hiatus hernia, carcinoma esophagus, carcinoma stomach, and periampullary carcinoma.

Outcome of endoscopic finding in dyspepsia with alarm symptoms was 12.8% whereas it was 8% as reported by Sumathi et al.^[2] In both studies, incidence of normal endoscopic findings is more in patients with dyspepsia without alarm symptoms. In our study, incidence of malignancy is more in patient with dyspepsia along with alarm symptoms. Our findings are compared with those of other authors as depicted in [Table 4].

CONCLUSION

It is concluded that UGI endoscopy is a very useful initial investigation to evaluate dyspepsia, especially when associated with alarm symptoms. Males underwent endoscopy more than females for evaluation of dyspepsia. Dyspepsia with alarm symptoms when evaluated often revealed malignant findings. Smoking and alcoholism was found to be major risk factors for dyspepsia.

Table 4: Findings of present study compared with those of other authors.

Site	Findings	Resent study	Antony and Vijayasathy ^[4]	Shashikumar et al. ^[5]	Shrestha et al. ^[6]
Esophagus	Barrett's esophagus	11.6%	0.2%	-	0.04%
	Varices	3.2%	0.6%	-	0.7%
	Esophageal erosions/erythema	22.4%	4.4%	4%	10.04%
	Esophageal polyp	1.6%	-	-	0.04%
	Lax LES	28.4%	16.1%	17.1%	-
	Esophageal ulcer	3.2%	-	-	-
	Hiatus hernia	10.8%	9%	3%	3.82%
Stomach	Carcinoma esophagus	2.8%	0.7%	5.4%	-
	Gastric erosion/erythema	78.8%	51.1%	28%	41.6%
	Gastric ulcer	12%	4.3%	2.2%	2.14%
	Gastric polyp	3.6%	-	-	0.04
	Carcinoma stomach	4.8%	2.3%	4.9%	-
Duodenum	Portal hypertension gastropathy	1.2%	0.1%	-	2.1%
	Duodenal erosions/erythema	27.6%	22%	-	2.38%
	Duodenal polyp	2%	-	-	0.09%
	Duodenal ulcer	21.2%	2.6%	2.8%	4.67%
	Periampullary carcinoma	0.4%	0.1%	-	-

Abbreviation: LES, lower esophageal sphincter.

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Conflict of interest

None declared.

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