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ORIGINAL ARTICLE

Evaluation of Significant Endoscopic Findings Using Alarm Features of Dyspepsia in Patients Visiting Gastroenterology Department at RIHS Islamabad

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ABSTRACT

Objective: The aim of this study is to analyze significant findings of upper gastrointestinal endoscopy in patients having alarming features of dyspepsia.
Study Design: Retrospective study
Methodology: This retrospective study was conducted in the Gastroenterology Department at RIHS Islamabad from March 2021 to March 2022 and included adult patients presenting with alarm features and were referred for gastroscopy for dyspepsia. Those ageing below 18 years were excluded. The information including demographic data, referral for the procedure, endoscopic findings and present alarm features and dyspeptic symptoms was recorded. The diagnosis was made on the basis of visual examination.
Results: A total of 140 patients who underwent gastroscopic procedures were included in the study. Most of the subjects (74.1%) reported epigastric burning, 10.8% complained of heartburn, 10.8% of regurgitation and 8% reported globus. Few of the participants reported symptoms such as bloating (5.3%), burping (5.3%), abdominal fullness (3.8%), chest pain (3.8%) and early satiety (0.8%). No significant relation was observed between warning signs and findings from the endoscopy.
Conclusion: Dyspeptic patients showing alarming signs such as vomiting, dysphagia and upper gastrointestinal bleeding must be prescribed immediate endoscopy.
Keywords: Dyspepsia, gastroenterology, endoscopic findings, epigastric burning

INTRODUCTION

Dyspepsia is a common complaint of patients visiting the gastroenterology outpatient department (OPD) with an overall prevalence of 7 to 40 % worldwide[1]. Dyspepsia is a chronic pain occurring in the upper abdomen. Its symptoms include nausea, bloating and fullness in the upper abdomen. About 30-40% of the adult population presents with upper abdominal pain or epigastric discomfort, and of these patients, only 50% consult a health care provider, in their whole life for those symptoms[2]. Currently, many guidelines recommend that patients with dyspepsia aged above 55 years and those patients having alarm features (anaemia, hematemesis, melena, early satiety, odynophagia, progressive dysphagia, idiopathic weight loss, persistent vomiting, history of peptic ulcers, family history of GI carcinoma and lymphadenopathy) should urgently undergo endoscopy for ruling out peptic ulcer[3].

A Metanalysis of 15 studies was conducted, including 57,363 patients which shows that sensitivity of the alarm features in evaluating GI carcinoma on endoscopy was 0 to 83%, while specificity was 40 to 98%. Similarly reports from Asia showed that the malignancy detection rate was much higher among the young patients with dyspepsia, they concluded that the age threshold for endoscopy screening should be 35 years, which means that the initial approach in dyspepsia should be urgent upper GI endoscopy[4].

Protocol for dyspepsia has been given by many guidelines; however, there is disagreement regarding the optimum initial strategy, especially in developing countries like Pakistan. Avoiding dietary and lifestyle habits leading to dyspepsia and the need for urgent upper GI endoscopy should be emphasized[5]. The aim of this study is to analyze significant findings of upper GI endoscopy in patients having alarm features of dyspepsia visiting the gastroenterology OPD at RIHS, Islamabad.

MATERIAL AND METHODS

A retrospective study was conducted in Gastroenterology Department at RIHS Islamabad from March 2021 to March 2022. The study included adult patients presenting with alarm features and was referred for gastroscopy for dyspepsia. Those ageing below 18 years were excluded. Any of the following condition was considered alarm feature: gastrointestinal bleeding, idiopathic weight loss, early satiety, persistent vomiting, history of peptic ulcers, family history of GI carcinoma, odynophagia, dysphagia and patients above 45 years recently diagnosed with dysphagia. The ethical board of the hospital approved the conduction of the study.

The information including demographic data, referral for the procedure, endoscopic findings and present alarm features and dyspeptic symptoms was recorded. Olympus GIF160 video endoscopes were used to perform the procedure, diagnosis was made on the basis of visual examination. SPSS version 23 was used for data analysis. Frequency tables were made after performing basic descriptive statistics. Fisher exact or $\chi 2$ test was used for comparing categorical data. P-value <0.05 was considered significant.

RESULTS

A total of 140 patients who underwent gastroscopic procedures were included in the study. The patients were older than 19 years old but not elder than 75 years old with the average age being 45.7± 13.7 years. Most of the patients were in their 30s. The average BMI of the participants was 26 ± 4.5kg/m2, and 35% of the subjects did not have an ideal weight or were obese. The general characteristics of the patients are shown in Table I.

Table II illustrates the symptoms of dyspepsia and its warning signs. 70% of the patients were diagnosed with dyspepsia among which more than half of the dyspeptics showed at least one warning sign. A significant gender difference was observed between the dyspeptics, female subjects being in abundance. Most of the subjects (74.1%) reported epigastric burning, 10.8% complained of heartburn, 10.8% of regurgitation and 8% reported globus. Few of the participants reported symptoms such as bloating (5.3%), burping (5.3%), abdominal fullness (3.8%), chest pain (3.8%) and early satiety (0.8%). Most patients showed warning signs such as the early onset of dyspepsia frequently in people elder than 40 years, immediate loss in body weight and difficulty in swallowing. Various subjects reported more than one sign and symptom.

Table III shows the association between warning signs and findings after gastroscopy. Endoscopy mostly revealed gastritis

and gastric ulcer, where these findings were not related to the alarm features significantly.

Every alarm feature showed a 63.2% and 47.5%, sensitivity and specificity respectively for findings from endoscopy. The PPV was 70.3% and the NPV was 40.9%.

Table 1: Demographic characteristics of study participants

Characteristics	Frequency	Percentage
Average age	45.7± 13.7	
Gender		
Male	68	48.6%
Female	72	51.4%
Prevalence of dyspepsia	112	80%
Dyspepsia with alarm signs	84	60%

Table 2: Dyspeptic symptoms and alarm signs in patients

Dyspeptic symptoms (n=112)	
Epigastric pain	83 (74.1%)
Heartburn	12 (10.8%)
Regurgitation	12 (10.8%)
Globus	9 (8%)
Burping	6 (5.3%)
Abdominal fullness	4 (3.8%)
Early satiety	1 (0.8%)
Alarm signs (n=84)	
Early-onset of dyspepsia	65 (77.4%)
Weight loss	23 (27.4%)
Dysphagia	11 (13.1%)
Upper gastrointestinal bleeding	9 (10.7%)
Odynophagia	8 (9.5%)
Lower gastrointestinal bleeding	1 (1.2%)

Table 3: Relation between endoscopic findings and alarm signs

Finding	Alarm sign (+) N=84	Alarm sign (-) N= 28	P-value
Significant endoscopic finding	59 (70.2%)	17 (60.7%)	0.288
Normal endoscopy	25 (29.7%)	11 (39.3%)	

Table 4: Sensitivity, Specificity, PPV, NPV of features

Alarm signs	Sensitivity	Specificity	PPV	NPV
Dysphagia	7.9	89.9	62.6	32.1
Hematochezia	0	96.6	0	32.0
Odynophagia	6.2	94.2	74	33.3
Vomiting	0	96.4	0	32
Positive faecal occult blood test	0.9	100	100	32.1
History of peptic ulcer	0.9	100	100	32.1
Recent dyspepsia onset	50.1	59.5	71	37.3
Weight loss	17.4	85	71.1	33.4
Gastrointestinal bleeding	7.8	94.3	76.9	33.3
Pooled values	63.2	47.5	70.3	40.9

DISCUSSION

This study included patients who had an average age of 45.7 years and were mostly obese, and there was an equal number of men and women. The same general characteristics were noted in other studies in this field[6-8]. Some studies also included patients from the pediatric ward so the average age was less than in the present study[9]. The rate of obesity has been increasing over the years due to the change in lifestyle. In the present study, most patients reported epigastric burning, heartburn, regurgitation and globus. These findings are consistent with an American study[10].

Women were mostly diagnosed with dyspepsia and a few patients also showed signs of bloating, burping, abdominal fullness, chest pain and early satiety. 57% of the study population reported at least one warning sign. Most studies reported the same results[10, 11] while others showed a low percentage of patients reporting signs[12]. More patients showing alarm signs may be due to poor health conditions and late presentation. Expensive health care may also contribute to this reason as people seek herbal medications over proper prescribed treatment, this delay in seeking medical care may result in the presentation of warning signs. This is supported by the findings such as onset as early as 40 years. Another study also reported the early onset of dyspepsia in 55 years old patients[13], other cohort studies have found that anaemia, abdominal bleeding and vomiting are also among the warning signs[9, 10, 12]. The alarm features in different studies may differ due to differences in age and demographic characteristics of the patients. Other signs such as immediate weight loss and difficulty in swallowing are similar to the ones reported in other studies[9,10,12]. NSAIDs are often used for irrelevant conditions such as insomnia and lethargy in our country and may account for upper abdominal bleeding in the present study.

Regarding the results of endoscopy, 27.2% of the dyspeptic patients had normal endoscopic findings, resulting in a 70.6% diagnostic yield. Similar results were noted in studies by India[14], Ghana[15] and China[12], however, a UK study showed that 73% of the dyspeptic subjects had a normal endoscopy[13]. This difference is due to the fact that we considered some conditions abnormal such as gastritis and duodenitis, which were normal in the said study. Most patients undergoing endoscopy in our study had gastritis which may be due to the presence of H.pylori in our country's atmosphere. For this reason, all the patients have prescribed H.pylori testing afterwards. Some studies report the same results[10] but others found that oesophagitis and peptic ulcer is the most common condition in dyspeptic patients[13-15]. Other findings from endoscopy were duodenitis, peptic ulcer, gastroduodenal polyps, oesophageal cancer, oesophagitis and gastric ulcer, similar to previous literature[10, 13]. No significant relation was observed between warning signs and findings from the endoscopy in our study. This finding does not align with the research. Literature reports an association between warning signs and abnormal findings such as cancer[10], gastric cancer was eight folds likely in patients showing alarming signs[15]. Other studies also note that alarm signs of dyspepsia were also a predictor of oesophagogastric malignancy[12, 15]. The difference in results of our study may be justified due to the difference in patients' inclusion criteria and the high prevalence of gastric cancer in the country.

The sensitivity and specificity for the alarm signs were moderate as in other studies where alarm signs showed low predictability for gastrointestinal malignancy[16]. Some signs including vomiting, abdominal bleeding and odynophagia had almost perfect specificity (>94%) for major endoscopic findings like a peptic ulcer. Another study reported the high specificity of dysphagia for positive prediction of gastrointestinal malignancy[17]. Similarly, another noted that dysphagia, weight loss and age of more than 40 years were a predictor of almost all cancers[18].

Limitations of the study: Our study had some limitations including a small sample size and retrospective study design. We did not test the patients for H.pylori by endoscopy and were unable to diagnose cancer histologically due to a lack of access to histological data of the patients after the endoscopy.

CONCLUSION

Dyspeptic patients showing alarming signs such as vomiting, dysphagia and upper gastrointestinal bleeding must be prescribed immediate endoscopy.

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