

A Study of the Role of Endoscopy in the Diagnosis and Management of Dyspepsia

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Abstract

Background: Endoscopy is advised as the initial test in the evaluation of a patient with dyspeptic symptoms and is critical in determining if the patient has organic or functional dyspepsia. Endoscopy will continue to be the first line of study for clinically relevant abnormalities that need accurate detection and biopsy, notwithstanding the difficulty in establishing a link between mucosal changes and symptom patterns. The present study was done to determine various endoscopic findings in dyspeptic patients and to study the usefulness of endoscopy in patients presenting with dyspepsia.

Method: Through a predesigned proforma, a thorough clinical history was gathered, including the existence of warning symptoms. An abdominal ultrasonogram is performed to search for gallstones or any other mass lesions. After that, an endoscopy was performed on the patients, and the results were recorded. Before the surgery, cardiology fitness tests were conducted on all patients older than 40 years. Before the operation, the patient went without food for 12 hours. Endoscopy was performed on the majority of patients under just topical anesthesia. Few patients needed sedation.

Results: In this study, the endoscopic findings were normal in 18.87% of cases. Gastritis was the most commonly diagnosed condition in 28.30% of cases followed by GERD in 15.09% of cases. In n=2 instances (3.77%), stomach cancer was observed, while n=1 (1.88%) individuals had duodenal ulcers. Barrett's esophagus and esophageal polyp in n=1(1.88%) cases each. Significant findings were found in the age group of 21–40 years when the endoscopic findings were split based on the age group. GERD mostly affects people between the ages of 31 and 40 years. The inflammatory lesions were more prevalent in those aged 21 to 40 years. Ulcer-related dyspepsia was typical in people between the ages of 41 and 70 years.

Conclusion: Males were more likely than females to have dyspepsia, and it was more prevalent in the 31–40 years age range. The most frequent first symptom in people with dyspepsia is epigastric pain or pain. The most frequent endoscopic finding was gastritis. H pylori prevalence in the studied population was 58.49%. The study population's incidence of cancer was 3.77%.

Keywords: Dyspepsia, Helicobacter, Esophagogastroduodenoscopy.

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Introduction

The Greek words "dys," which means "bad," and "Pepsis," which means "digestion," are the origin of the term dyspepsia. It is described as having one or more of the following four symptoms for three months within the first six months following the initiation of the symptoms: postprandial fullness, early satiety, epigastric discomfort, and burning. [1] Lord Moynihan claimed that the majority of instances of dyspepsia could be identified just by its symptoms, but more recent research has revealed that individuals who appear with the ailment are frequently misdiagnosed since so many other disorders may cause it. [2] Two main subgroups of dyspeptic patients have been recognized: organic or pathological and functional. The majority of patients belong to the second subtype. The symptoms include early satiety, epigastric pain or discomfort, and postprandial fullness as well as the absence of structural illness that meets the ROME III criteria for functional dyspepsia. Functional dyspepsia affects roughly 15% of the population in Western nations. [3] Although only 1 in 4 people who have dyspepsia seek medical attention, the condition has a significant clinical burden because of its high occurrence, particularly in poor nations. [3] According to several studies conducted on populations across the world, the prevalence of dyspepsia is about 25% (with a range of 10-40%) during a 3 to 12-month period. [4] It is a very prevalent symptom, with a frequency of over 60% in India. [5, 6] However, the prevalence estimate will only be about 3–15% if heartburn or regurgitation are not included. [7] According to longitudinal studies, symptoms resolve in fewer than 50% of individuals over time. Compared to males, women are more likely than men to have dyspepsia. With age, this disparity becomes less. About 5% of the population will experience new-onset dyspepsia each

year. [8] According to research done in Mumbai, 33.3% of people there experienced dyspeptic symptoms, and roughly 12% of them had serious symptoms. [9] Reflux symptoms are among the symptoms associated with prevalence 25% of cases with dyspepsia lack reflux symptoms. 15% irritable bowel syndrome and 10% GERD. In the study "Study on gastric cancer and other endoscopic diagnoses in patients with dyspepsia without alarm symptoms" by Breslin NP et al., [10] only 3 incidences of gastric cancer were diagnosed among 2867 patients under the age of 45. Thus, they concluded that not all individuals with dyspepsia should be considered for endoscopy, but only those with chronic or recurring symptoms. Only 19% of the 291 individuals studied by Choomsri P et al., [11] exhibited significant endoscopic findings. More importantly, warning symptoms were unrelated to the results of the endoscopy. Thirty of the 130 individuals who had biopsies had H pylori found in 14 of their samples. The presence of H pylori did not result in any notable endoscopic results. They concluded that because endoscopic results and symptoms of dyspepsia were not substantially correlated, empirical anti-acid medication should be used initially before subjecting the patient to diagnostic endoscopy. Since there is a paucity of available data in this field, we decided to conduct the study to determine various endoscopic findings in dyspeptic patients and to study the usefulness of endoscopy in patients presenting with dyspepsia reporting to our Tertiary Care Teaching Hospital.

Material and Methods

This cross-sectional study was conducted in the Department of General Surgery, Prathima Institute of Medical Sciences, Naganoor, Karimnagar, Telangana State. Institutional Ethical approval was obtained for the study. Written consent was

obtained from all the cases in the study after explaining the nature of the study in the vernacular language.

Inclusion Criteria

1. Aged above 18 years.
2. Males and Females
3. No history of previous endoscopy done
4. Willing to participate in the study voluntarily.

Exclusion criteria

1. History of liver, pancreas, or gallbladder disease
2. Unstable cardiac conditions
3. Pregnant females
4. Intake of NSAID or proton pump inhibitors within the past 15 days
5. History of GI bleeding

Through a predesigned proforma, a thorough clinical history was gathered, including the existence of warning symptoms. An abdominal ultrasonogram is performed to search for gallstones or any other mass lesions. After that, an endoscopy was performed on the patients, and the results were recorded. To avoid errors brought on by a pH shift, all the equipment was cleaned with distilled water. Before the surgery, cardiology fitness tests were conducted on all patients older than 40 years. Before the operation, the patient went without food for 12 hours. Endoscopy was performed on the majority of patients under just topical anesthesia. Few patients needed sedation. Ten minutes before the surgery, lignocaine spray was used. For sedation, 5–10 mg of IV diazepam was administered. The patient was positioned with left decubitus. With the aid of Fujinon fiberoptic endoscopy, the upper esophagogastrroduodenoscopy was performed. The tip of the endoscope was inserted into the lumen under direct eyesight. Oesophageal inflammation, ulcers, growth, and strictures are checked for when insufflation is at its best. It will be possible to see external compression at the four places listed above as the endoscope travels along the oesophageal

lumen. The oesophagogastric junction is often visible about 38–40 cm from the incisor, and Z lines, or differences in mucosal color, are also seen. The patient is instructed to breathe deeply so that the diaphragmatic hiatus leaves a mark on the esophagus and stomach walls to determine the position of the oesophageal hiatus. The lower oesophageal junction should be examined to see whether it is normal, lax, or restricted before proceeding into the stomach. The endoscope can penetrate the stomach with little resistance because of its broad diameter. As the stomach fills with air, the patient could experience pain. Once the tip is gently bent down and to the left, a greater curve and the posterior wall are visible. For a good view of the stomach and to avoid aspiration, all stomach liquids are suctioned out. The whole stomach body may be seen if the endoscope is rotated. Using the J procedure, the proximal portion of the curvature is seen. When the stomach is swollen, the J maneuver is performed by a 180-degree upward rotation of the scope. The pyloric ring is immediately viewed by angulating the endoscope's antrum tip for viewing. Under clear visibility, the endoscope is advanced via the pylorus. The second half of the duodenum may be reached by the endoscope. In the instance of a typical study, random endoscopic biopsies were collected. Six samples were collected in the case of ulcers, two from the stomach's antrum and four from the ulcer's margin. Two specimens from each of the six—one from the antral location and one from the lesion site were inoculated in urea broth. It has 0.5 cc of distilled water with 1% urea in it. Due to phenol red acting as the indicator, if H pylori are present, the color of the solution will shift from yellow to pink. Four more samples are delivered in formalin for histological analysis. Sections are cut after the specimen has been fixed with 10% formalin, paraffin-processed, and processed. Giemsa stain is used on two specimens while hematoxylin-eosin stain is used on the other two. If fast urease

tested positive or with a positive result from a histological investigation, the *H pylori* test was deemed to be accurate. Data analysis was done after data collection.

Results

A total of n=53 cases of dyspepsia were included in the study based on the inclusion and exclusion criteria. Out of the n=53 cases in the study, n=33(62.26%)

were males and n=20 (37.74%) were females. The age range of the cases in the study was from 18 years to 64 years. In most of the cases, 41.5% belonged to the age group 31 – 40 years followed by the age group 21 – 30 years. The mean age of the cohort in the study was 42.5 ± 6.5 years. The details of the demographic profile of all the cases included in the study have been depicted in Table 1.

Table 1: Demographic profile of the cases included in the study.

Age group	Frequency	Percentage
18 – 20	03	5.66
21 – 30	12	22.64
31 – 40	22	41.50
41 – 50	08	15.09
51 – 60	04	7.54
> 60	04	7.54
Total	53	100.00

The chief presenting symptom of the patient is presented in Figure 1. The most commonly reported symptom in the cases was epigastric pain followed by bloating and diffuse abdominal pain. The time for which the patient had been suffering from the dyspeptic symptoms is shown in Figure 2. By using a fast urease kit test, Helicobacter was found in 31 out of 53 patients, or 58.49% of the patients. Helicobacter was identified by rapid urease kit test in 31 out of 53 patients i.e., 58.49%. Out of the total n=31 positive for

H pylori n=21/33 males were positive and n=10/20 females were positive for *H pylori*. Among the n=10 patients with normal endoscopic study, 5 patients were positive for *H pylori* on rapid urease test. Although only 58.49% of dyspeptic patients were associated with *H pylori*, it was 100% positive in patients with oesophagogastrroduodenitis followed by 100% in case of duodenal ulcer. In gastric carcinoma cases 50% were positive and in oesophageal carcinoma, 100% of patients were positive in this study.

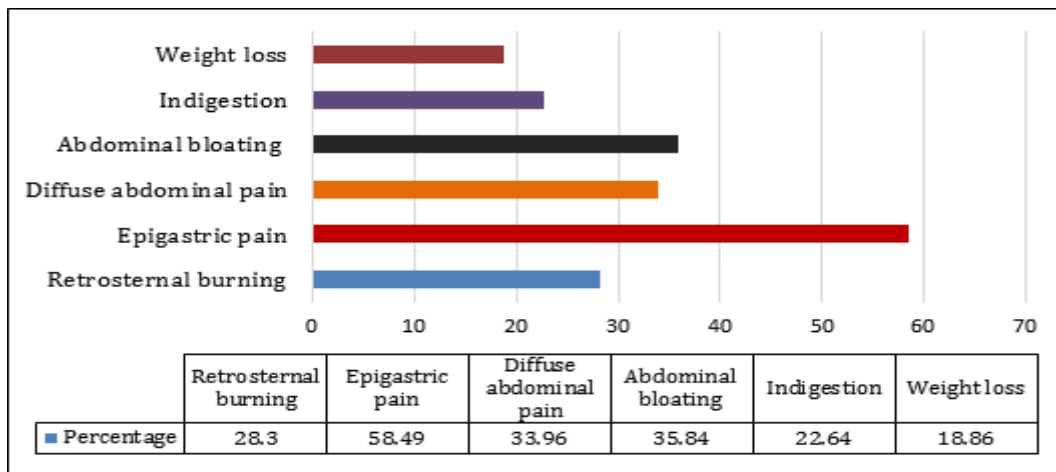


Figure 1: Showing the symptoms reported by the cases in the study.

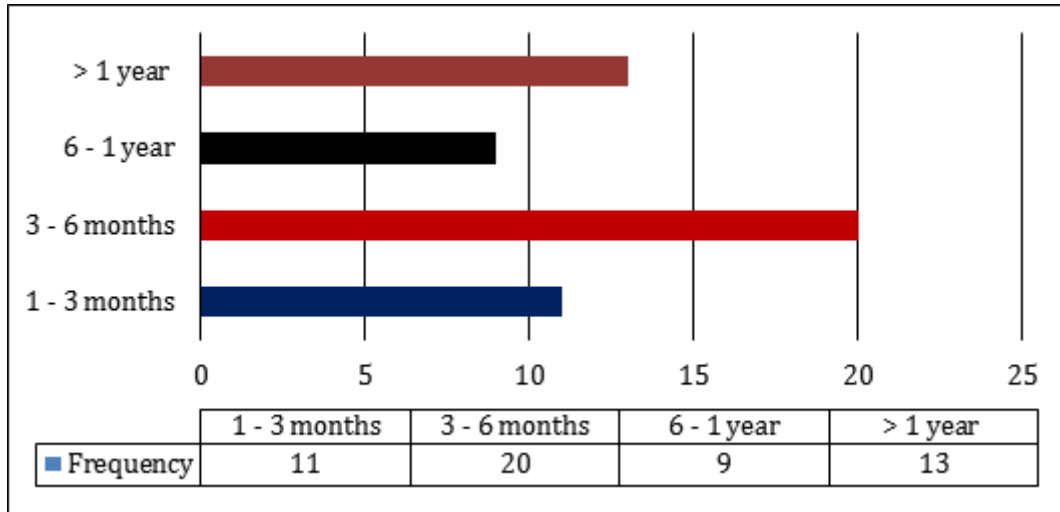


Figure 2: Showing the duration of symptoms existing in the cases of the study.

In this study, the endoscopic findings were normal in 18.87% of cases. Gastritis was the most commonly diagnosed condition in 28.30% of cases followed by GERD in 15.09% of cases. Oesophagitis was found in 7.55% of cases and in 3.77% of cases was found with hiatus hernia, gastric ulcer, carcinoma stomach, duodenitis, and gastroduodenitis as depicted in Table 2. In this study, those over 55 were more likely to develop stomach and oesophageal cancer. In n=2 instances (3.77%), stomach cancer was observed, while n=1 (1.88%)

individuals had duodenal ulcers. Barrett's esophagus and esophageal polyp in n=1(1.88%) cases each. Significant findings were found in the age group of 21–40 years when the endoscopic findings were split based on the age group. GERD mostly affects people between the ages of 31 and 40 years. The inflammatory lesions were more prevalent in those aged 21 to 40 years. Ulcer-related dyspepsia was typical in people between the ages of 41 and 70 years.

Table 2: Showing the Endoscopic findings of the cases included in the study.

Endoscopic findings	Male	Female	Total	Percentage
Normal	7	3	10	18.87
Oesophagitis	2	2	4	7.55
Oesophageal polyp	0	1	1	1.89
Hiatus hernia	1	1	2	3.77
GERD	5	3	8	15.09
Barett's esophagus	1	0	1	1.88
Carcinoma esophagus	0	1	1	1.88
Gastritis	10	5	15	28.30
Gastric ulcer	1	1	2	3.77
Carcinoma stomach	0	2	2	3.77
Oesophagitis	1	0	1	1.88
Duodenitis	2	0	2	3.77
Duodenal ulcer	1	0	1	1.88
Gastroduodenitis	1	1	2	3.77
oesophagogastroduodenitis	1	0	1	1.88
Total	33	20	53	100.00

Discussion

One of the most frequent reasons for hospital visits, with a mean work loss of 36 weeks, is dyspepsia symptoms. [9] There are several differential diagnoses for dyspepsia, which has a wide range of symptoms. Given the prevalence of dyspeptic symptoms and the labor requirements, it would be nearly impossible to do endoscopies on every patient who had the condition. Thus, the purpose of this study was to investigate the proper place of endoscopy in the treatment of dyspepsia. The gold standard for identifying any illness in the upper gastrointestinal tract is upper GI Endoscopy. Most of these individuals have a history of using NSAIDs, alcohol, or both, however, we excluded all of those patients from our analysis. The majority of patients (58.49%) in our study reported having epigastric discomfort, which was comparable to the 31% reported by Sarkar et al., [12] study. Retrosternal and widespread abdominal discomfort, as well as other hazy symptoms, were also present. Based only on clinical symptoms, it is quite challenging to distinguish individuals with peptic ulcer disease from other dyspeptic patients.[13] The majority of patients (37.73%) who visited our outpatient department experienced dyspeptic symptoms that had been present for three to six months. Self-medication or home cures were the most frequent causes for not visiting a health center for this extended period. It is referred to as "Functional dyspepsia" in three cases when endoscopic results were normal. It has the same meaning as the phrase "irritable stomach syndrome". Numerous studies have researched functional dyspepsia; however, the pathophysiology has not yet been investigated. In a study by Schemann et al., [14], it was discovered that functional dyspepsia is caused by a variety of factors, including sensorimotor dysfunction linked to hypersensitivity to mechanical and chemical stimuli, motility

disorders, immune system activation, increased mucosal permeability in the proximal small intestine, and disorders of the autonomic and enteric nervous systems.

The relationship between a specific etiology and the disease's onset time, however, has not yet been identified. Adenocarcinoma of the esophagus incidence has grown along with the prevalence of reflux disease globally. The incidence of reflux disease in our study was shown to be around 7%, which is comparable to a study conducted in Denmark. [15] The majority of patients, 83 out of 107, who presented with dyspepsia symptoms were later diagnosed with stomach or duodenal ulcers. It was discovered that 79% of stomach ulcers and 73% of duodenal ulcers were H. pylori positive. his study was comparable to others conducted in the north, south, and center of India, respectively, by Singh V et al., [16] Adlekha et al.,[17] and Kaore et al., [18] This demonstrates that H. pylori prevalence is about identical throughout India. The findings stand in stark contrast to studies of Western nations, where the frequency seldom ever rises beyond 10%. [16-18] This is because Western countries' eating practices and environmental conditions differ from those of India, a tropical nation. H. pylori was discovered to be present in one out of every two instances that were thought to be malignant, which is consistent with the notion that this bacterium is the biggest risk factor for developing gastric cancer. [19] The two patients who experienced dyspeptic symptoms for more than a year were included in this group. The incidence of gastric carcinoma in the study conducted by Yuan Y et al., [20] was 3%, Choomsri et al., [11] was 1% and Ziauddin et al., [21] was 4%. Thus, the results of the present study were comparable to other studies.

Conclusion

Males were more likely than females to have dyspepsia, and it was more prevalent in the 31–40 years age range. The most frequent first symptom in people with dyspepsia is epigastric pain or pain. The most frequent endoscopic finding was gastritis. *H pylori* prevalence in the studied population was 58.49%. The study population's incidence of cancer was 3.77%. Given the substantial link between warning symptoms of dyspepsia and stomach lesions, endoscopy should be advised for patients who present with the condition. Patients under 50 years old without alarm symptoms did not have any noteworthy endoscopic results. Therefore, these individuals should receive treatment right away rather than having an endoscopy.

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