

Prevalence of H. Pylori in Dyspepsia Patients in a Tertiary Care Hospital

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Abstract

Dyspepsia is a common clinical problem. More than half of patients presenting with dyspepsia have no detectable lesion for their symptoms. The common organic causes of dyspepsia include peptic ulcer, esophagitis and cancer. The diagnostic test of choice is endoscopy. The aim of our study was to find out the prevalence of significant endoscopic lesions in patients presenting with dyspepsia to our hospital. A retrospective study was undertaken and it was found out that majority of the patients had no significant lesion. Most common lesion found was peptic ulcer followed by esophagitis. Few cases of gastric carcinoma were detected thereby implying the role of early endoscopy. Hence it was concluded that dyspepsia is a common clinical condition encountered in day to day practice and endoscopy plays a major role in the management.

Keywords: dyspepsia, endoscopy

I. Introduction

Of all adults 30–40% experience symptoms of upper abdominal pain or discomfort but an organic cause is found in only a minority who seek medical care¹. The remaining group is labeled as having functional dyspepsia. It is a condition of impaired digestion and symptoms include abdominal fullness, nausea, belching, or upper abdominal pain². There is a prevalence of about 40% in the general population.³ The prevalence is lower if patients with any symptoms of heartburn and regurgitation are excluded. The common organic causes of dyspepsia are peptic ulcer, esophagitis and cancer. Endoscopy forms the main mode of investigation³⁻⁵. Cancer of the UGI tract is usually advanced at the time of diagnosis but a low threshold of suspicion for gastric malignancy in dyspeptic patients may result in earlier diagnosis and improved survival. However cancer accounts for only 1–2% of diagnoses at UGI tract and less in patients under the age of 50 years.⁷ Age specific thresholds to trigger endoscopic evaluation may differ by gender, availability of resources and regional disease specific risks.⁸ This study was undertaken to determine the prevalence of significant endoscopic lesions in patients presenting with dyspepsia in relation to age in MGM Hospital, Warangal.

II. Materials And Methods

This was a retrospective study carried out at MGM Hospital over a period from January 2020 to February 2021. MGM Hospital is a tertiary-care governmental hospital in Warangal, Telangana. All patients presenting with dyspepsia were included in the study. Endoscopic biopsy was done at the discretion of the endoscopist. Pathological examination was performed by an expert pathologist.

2.1 Definitions

Dyspepsia has often been loosely defined; the most widely applied definition of dyspepsia is the Rome Working Teams formulation, namely chronic or recurrent pain or discomfort centered in the upper abdomen⁹. Heartburn is not included in the diagnostic symptom criteria for dyspepsia. It is thought to arise primarily from the esophagus being caused by gastro-esophageal reflux disease although it may occur concomitantly with dyspeptic symptoms.⁸ The presence of any of the following was considered as a significant finding in UGI endoscopy: peptic ulcer, esophagitis (with or without hiatal hernia), erosive gastritis or duodenitis, stricture, Barrett's esophagus, esophageal candidiasis, neoplasm, mass and polyps. Reflux esophagitis was graded according to the Savary–Miller grading.^{11,12} Stage I: Erythematous or erythematous exudative erosion (alone or multiple, not confluent). Stage II: confluent but not circumferential erosion. Stage III: circumferential erosive and exudative lesions. Stage IV: chronic lesions (ulcer, stenosis).

The presence of any of the following lesions was considered as an irrelevant endoscopic finding: Erythematous gastritis, atrophic gastritis and miscellaneous abnormalities (varices, portal hypertensive

gastropathy, hiatal hernia without esophagitis and vascular ectasia).

2.2 Patients and exclusions

A total of 3750 patients underwent UGI endoscopy between January 2020 to February 2021. Data was collected on patients who had dyspepsia and underwent UGI endoscopy. Those who underwent UGI endoscopy for reasons other than dyspepsia such as dysphagia, hematemesis, were excluded from the study. Patients with prior peptic ulcer were also excluded. Those who could not complete the procedures were excluded subsequently.

2.3 Data recording and statistics

Patients were stratified into three groups according to their age: less than 30 years (group 1), 30–50 years (group 2) and more than 50 years (group 3).¹A standardized data collection form (sheet) was formulated for each patient. Information included demographic data (age and gender), smoking history, drugs used (aspirin and non-steroidal anti-inflammatory) alcohol consumption, associated heartburn, endoscopic findings and histopathology. Data were analyzed to assess a statistically significant difference between the age groups for various gastrointestinal lesions. The data from the patients were registered, tabulated and statistically analyzed using the Statistical Package for Social Sciences (SPSS) program version 15 to calculate frequencies and the χ^2 test. P value was taken as significant at a level less than 0.05.

III. Results

One thousand two hundred patients presenting with dyspepsia were assessed. Dyspepsia was the commonest indication for UGI endoscopy (Table 1).

3.1 Patients' characteristics

Six hundred and twelve (51%) were male and five hundred eighty eight (49%) female. Ages ranged from 18 to 88 years, mean 43 ± 15 years. 388 (32%) were taking aspirin or non-steroidal anti-inflammatory drugs (NSAIDs), three hundred eighty four (32%) had a history of smoking, and 240 (20%) were consuming alcohol. One hundred and fifty six patients (13%) had associated heartburn. Patients' characteristics stratified by age are presented in Table 2.

3.2 Endoscopic findings

Endoscopy revealed normal findings or miscellaneous irrelevant findings in 780 patients (65%). Endoscopy revealed significant pathology in 420 patients (35%). Peptic ulcer was diagnosed in 216 patients (18%), duodenal ulcers in 180 (15%) and gastric ulcers in 48 (4%). Esophagitis was diagnosed in 168 patients (14%), stage I in 161 (96%), stage II in 5 (3%) and stage III in 1 (1%). Grading of esophagitis in patients with and without heartburn is shown in Figure 1. Gastric malignancy was diagnosed in 12 patients (1%) and duodenal cancer in 1 (0.1%). Histopathology revealed adenocarcinoma in six patients (44%), anaplastic carcinoma in 2 (19%), undifferentiated carcinoma in 2 (19%), mucoid carcinoma in one (6%), lymphoma in one (6%) and malt lymphoma in one (6%). Esophageal candidiasis was diagnosed in seven (0.6%) patients, gastric polyps (hyperplastic) in four (0.4%), Barrett's esophagus (4 confirmed by pathology) in four (0.4%), esophageal stricture in one (0.1%) and submucosal mass (leiomyoma) in one (0.1%). Many patients had more than one lesion. Biopsies were obtained for histopathological examination in 36 patients (3%), mainly in patients with suspicion of malignancy (swelling or gastric ulcer), Barrett's esophagus and polyps. Relative frequency of endoscopic findings in patients presenting with dyspepsia stratified by age is presented in Table 3. The prevalence of UGI malignancy among patients with dyspepsia in relation to age is presented in Figure 2.

IV. Figures and Tables

Table 1: Indication of UGI endoscopy among studied years

Indication	Incidence N (%)
Dyspepsia	1200 (32)
Reflux symptoms	1000 (26)
Anemia	900 (24)
Dysphagia	400 (10)
UGI bleeding	220 (5.8)
Banding	20 (0.5)
Others	10 (0.26)

STATISTICS

Table 2 Patients' characteristics stratified by age

Characteristics	Group 1 N = 315	Group 2 N = 601	Group 3 N = 284	P value
Age (mean ± SD)	25 ± 4	41 ± 6	61 ± 7	--
Male/female	0.8/1	1/1	1.4/1	--
History of smoking	75 (24%)	198 (33%)	107 (38%)	0.001
Aspirin and NSAIDs intake	72 (23%)	162 (27%)	90 (32%)	0.019
Alcohol consumption	6 (2%)	12 (2%)	2 (1%)	0.467
Heartburn	37 (12%)	78 (13%)	40 (14%)	0.527

* Age groups: group 1 = less than 30 years; group 2 = 30–50 years; group 3 = more than 50 years.

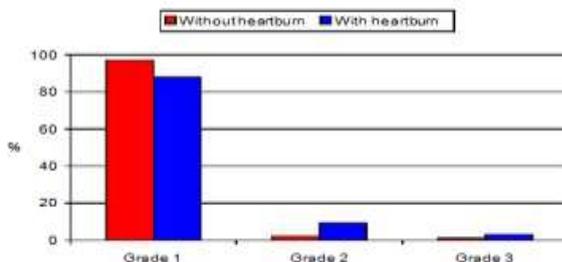


Figure 1 Degree of esophagitis in patients with dyspepsia with and without reflux symptoms.

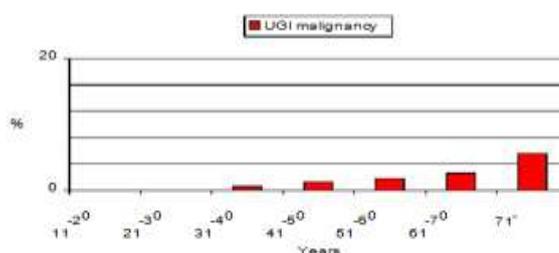


Figure 2 UGI malignancy among patients with dyspepsia in relation to age.

Table 3 Endoscopic findings stratified by age

Endoscopic findings	Group 1 N = 315 (%)	Group 2 N = 601 (%)	Group 3 N = 284 (%)	P value
Normal/irrelevant findings	258 (82)	378 (63)	156 (55)	0.000
Significant endoscopic findings				
Peptic ulcer	28 (9)	108 (18)	68 (24)	0.000
Esophagitis	28 (9)	96 (16)	42 (15)	0.002
Erosive gastroduodenitis	12 (4)	48 (8)	31 (11)	0.012
UGI malignancy	0 (0.0)	6 (1)	5 (2)	0.003
Esophageal candidiasis	0 (0.0)	3 (0.6)	3 (1.2)	0.136
Gastric polyps (hyperplastic)	0 (0.0)	2 (0.3)	2 (1)	0.114
Barrett's esophagus	1 (0.3)	1 (0.2)	2 (0.7)	0.299
Esophageal stricture	0 (0.0)	1 (0.2)	1 (0.2)	0.704
Submucosal mass (leiomyoma)	0 (0.0)	0 (0.0)	1 (0.2)	0.306

* Age groups: group 1 = less than 30 years; group 2 = 30–50 years; group 3 = more than 50 years.

V. Discussion

Dyspepsia is a common clinical problem seen by both primary care physicians and gastroenterologists. Dyspepsia accounts for about 4–5% of all the general practitioner consultations and 20–40% of all gastroenterological consultations¹³. Initial evaluation should focus on the identification and treatment of potential causes of symptoms such as gastro-esophageal reflux disease, peptic ulcer disease, and medication side effects but also on recognizing those at risk for more serious conditions such as gastric cancer. Endoscopy is recommended as the first investigation in the work up of a patient with dyspeptic symptoms and is essential in the classification of the patient's condition as organic or functional dyspepsia. Approximately 40% of dyspeptic patients have an organic cause, and only 20% of patients have significant gastroduodenal lesions, such as peptic ulcer^{10,14,15}. The most commonly reported major endoscopic abnormalities are: gastric ulcer (1.6–8.2%), duodenal ulcer (2.3–12.7%), esophagitis (0–23.0%), and gastric malignancy (0–3.4%).¹⁶ Only in a few cases are dyspeptic symptoms caused by gastro-esophageal malignancy.¹⁷ While gastric or esophageal cancer is an unusual finding in patients with dyspepsia, excluding malignancy is a common reason given for performing endoscopy.⁸ Once an organic cause for symptoms has been excluded, a diagnosis of functional dyspepsia can be made.⁸

In the present study 1200 patients presenting with dyspepsia at a tertiary care hospital over a 2-year period were assessed. Dyspepsia was the commonest indication for UGI endoscopy in our hospital (32% of all endoscopies). The relative frequencies of upper endoscopic finding stratified by age demonstrated that non-ulcer dyspepsia and significant lesions (peptic ulcer, esophagitis and erosive gastroduodenitis) were common in all age groups (Table 3). Peptic ulcer, esophagitis and erosive gastroduodenitis were associated with increasing age (Table 3). UGI malignancy was an uncommon finding and found in older age groups (Table 3). The low prevalence of serious lesions in young patients is consistent with prior published data.^{18–20}

Endoscopy revealed normal findings or miscellaneous irrelevant findings in 65% of patients presenting

with dyspepsia and 82% of patients younger than 30 years. It just shows that majority of the patients with dyspepsia have no organic lesion. The findings of the present study support selective UGI endoscopy in patients with dyspepsia because the prevalence of important lesions was very low in young patients. Unmeasured benefits could include improvement in quality of life, if anxiety is reduced, and reduction in subsequent health care utilization. Significant pathology was diagnosed in 35% of patients presenting with dyspepsia. The commonest included peptic ulcer, esophagitis and erosive gastroduodenitis which were diagnosed in 18%, 14% and 8% of patients, respectively. These findings were more frequent among the older age groups than in the younger age group ($P = 0.000, 0.002$ and 0.012 , respectively).

We have detected 13 (1%) patients with UGI malignancy among patients with dyspepsia. Ages ranged from 37 to 75 years. UGI malignancy was not found in dyspeptic patients younger than 30 years old. Studies showed the incidence and risk of gastric malignancy steadily increase with age after 40 years with its highest peak in the seventh decade.²¹ Figure 2 suggests the same pattern in our sample. Perhaps the most important reason for performing diagnostic endoscopy is to detect gastric cancer at an early stage. However, in its early stage, gastric cancer presents with symptoms that are often indistinguishable from those of benign gastric ulceration; therefore, all patients who are in the age group at risk of gastric cancer should undergo early endoscopy rather than trials of medical therapy that may delay diagnosis²².

The findings of the present study confirmed that significant endoscopic lesions were more frequent among the older age groups than in the younger age group. There was a statistically significant difference between the age groups for the presence of peptic ulcer, esophagitis, erosive gastroduodenitis and UGI malignancy. Limitation of the study included: the study is retrospective, lack of biopsy in all patients, thereby missing microscopic esophagitis, non-erosive reflux disease, histologic gastritis as well as Helicobacter pylori infection. Also alarm symptoms were not assessed.

VI. Conclusion

Dyspepsia is a common indication for endoscopy. Endoscopy revealed normal findings or miscellaneous irrelevant findings in the majority of patients. The most frequent significant pathologies included peptic ulcer, esophagitis and erosive gastroduodenitis. UGI malignancy was uncommon and found in older age groups. Endoscopy can be avoided in most young patients with chronic dyspepsia because the benefits of endoscopy in these patients are uncertain. However keeping in mind a strong suspicion of malignancy, endoscopy can detect cancer at an early stage. Hence we conclude that endoscopy is a must for the evaluation of dyspepsia, especially in the elderly.

References

- [1]. El-Serag HB, Talley NJ. Systemic review: the prevalence and clinical course of functional dyspepsia. *Aliment Pharmacol Ther*. 2004 Mar 15; 19(6):643-54.
- [2]. Duvnjak, edited by Marko (2011). *Dyspepsia in clinical practice* (1. Aufl. ed.). New York: Springer. p. 2. ISBN 9781441917300
- [3]. Akhtar A, Shaheen M. Dyspepsia in African American and hispanic patients. *J Natl Med Assoc* 2004;96:635-40.
- [4]. Penston JG, Pounder RE. A survey of dyspepsia in Great Britain. *Aliment Pharmacol Ther* 1996;10:83-9.
- [5]. Ebell MH, Warbasse L, Brenner C. Evaluation of the dyspeptic patient: a cost-utility study. *J Fam Pract* 1997;44:545-55.
- [6]. Silverstein MD, Petterson T, Talley NJ. Initial endoscopy or empirical therapy with or without testing for Helicobacter pylori for dyspepsia: a decision analysis. *Gastroenterology* 1996;110:72-83.
- [7]. Sonnenberg A. Cost-benefit analysis of testing for Helicobacter pylori in dyspeptic subjects. *Am J Gastroenterol* 1996;91:1773-7.
- [8]. Locke GR. Nonulcer dyspepsia: what it is and what it is not. *Mayo Clin Proc* 1999;74:1011-5.
- [9]. Drossman DA, Corraziari E, Talley NJ, et al., Rome II: The functional gastrointestinal disorders. 2nd Ed. McLean: Degnon, 2000
- [10]. Harmon R, Peura D. Evaluation and management of dyspepsia. *Ther Adv Gastroenterol* 2010;3:87-98.
- [11]. Bandameedi R, Mohammed S, Soma H. A case study on National List of Essential Medicines (NLEM) in India and WHO EML 2015-overview. *Pharm Regul Aff*. 2016;5:159.
- [12]. Valle PC, Breckan RK, Amin A. "Test, score and scope": a selection strategy for safe reduction of upper gastrointestinal endoscopies in young dyspeptic patients referred from primary care. *Scand J Gastroenterol* 2006;41:161-9.
- [13]. Savary M, Miller G. *L'oesophage: manuel et atlas d'endoscopie*. Soleure, Switzerland: Editions Gassmann; 1977 (English edition 1978). Internet. Available from: <http://www.gastrosourc.com/Scientific-Resources/definitions-classifications/1384415?itemId=1384415>.
- [14]. Ollyo JB, Fontollier C, Brossard E, Lang F. La nouvelle classification de Savary des oesophagites de reflux. *Acta Endoscopica* 1992;22:307-20.
- [15]. Khan N, Shabbir G, Zarif M, Khattak M. Upper gastrointestinal endoscopic assessment of patients presenting with dyspepsia. *JPMI* 2007;21:209-16.
- [16]. Spiller RC. Anorexia, nausea, vomiting, and pain. *Br Med J* 2001;323:1354-7.
- [17]. Fisher RS, Parkman HP. Management of nonulcer dyspepsia. *N Engl J Med* 1998;339:1376-81.
- [18]. Tytgat G. Role of endoscopy and biopsy in the work up of dyspepsia. *Gut* 2002;50:13-6.
- [19]. Maconi G, Manes G, Porro G. Role of symptoms in diagnosis and outcome of gastric cancer. *World J Gastroenterol* 2008;14:1149-55.
- [20]. Gillen D, McColl KEL. Does concern about missing malignancy justify endoscopy in uncomplicated dyspepsia in patients aged less than 55? *Am J Gastroenterol* 1999;94:75-9.
- [21]. Delaney BC, Wilson S, Roalfe A, Roberts L, Redman V, Wearn A, et al. Cost effectiveness of initial endoscopy for dyspepsia in patients over age 50 years: a randomized controlled trial in primary care. *Lancet* 2000;356:1965-9.
- [22]. Axon A. Chronic dyspepsia: who needs endoscopy? *Gastroenterology* 1997;112:1376-80.