

Clinical Evaluation of Non Resolving Dyspepsia by Upper Gastrointestinal Endoscopy: A Diagnostic Perspective

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ABSTRACT

Introduction: Dyspepsia is a common problem in regular outpatient clinical practice. In Kashmir province of North India little research has been done on studying clinically important endoscopic findings in non resolving dyspeptic patients of different ages and ethnicities. The purpose of this study was to assess the diagnostic value of Upper Gastrointestinal Endoscopy (UGIE) in patients with non resolving dyspepsia who had not undergone endoscopic evaluation previously.

Aim: To determine the diagnostic value of endoscopy in patients with non resolving dyspepsia and to correlate the endoscopic findings with clinical perspective of patients with or without alarming symptoms and signs.

Materials and Methods: This retrospective cross-sectional, single-centre study was done in the Department of General Medicine, SKIMS Medical College and Hospital (tertiary care hospital), Srinagar, Jammu and Kashmir, India, from July 2017 to June 2022. Study involved 1600 patients who presented with non resolving dyspepsia and underwent endoscopic evaluation. Non resolving dyspepsia was defined as persistent upper abdominal discomfort associated with heart burn or bloating after three to six weeks of adequate proton pump inhibitor therapy. Data was gathered and analysis was done based on

demographics, clinical symptoms with or without alarming features by using Statistical Package for the Social Sciences (SPSS) software version 22.0.

Results: A total of 1600 patients were included in the study. The mean±Standard Deviation (SD) age of the study group was 52±10 years, and 63% of the patients were males. Epigastric pain was the predominant symptom (61%) followed by heartburn (22%). Abnormal endoscopic findings were noted in 47.75% of the patients involved in this study. Gastritis (19.4%) was the most common finding observed. Gastric carcinoma was the least common diagnosis, seen in 2.93% of subjects, mostly in the elderly age group.

Conclusion: In the present study, patients with dyspepsia frequently had normal or clinically insignificant upper gastrointestinal endoscopic findings regardless of age. Based on the present study conducted in a large number of patients, an invasive procedure like UGIE should be reserved for patients having definite alarming features, as the majority of patients don't have clinically significant findings and should be treated adequately on Functional Dyspepsia (FD) protocol before a definitive investigative procedure is performed. The present study strongly indicates overuse of UGIE, especially in the absence of alarming features.

Keywords: Antral gastritis, Epigastric pain, Gastroesophageal malignancy

INTRODUCTION

Dyspepsia can be defined as pain or discomfort in the upper abdomen and is one of the common symptoms encountered in day-to-day clinical practice [1]. According to the National Institute for Health and Care Excellence (NICE) guidelines dyspepsia is a group of symptoms that includes upper abdomen pain or discomfort, heartburn, gastric reflux, nausea or vomiting [2]. Dyspepsia can be divided into either organic or Functional Dyspepsia (FD) in accordance with the endoscopic findings. According to the Rome IV criteria patients with FD should have at least one of the following symptoms: postprandial fullness, early satiety, epigastric pain or epigastric burning. Besides these symptoms must not be explained by any other structural diseases and symptoms should persist for >3 months from the symptom onset and for ≥6 months before the diagnosis is established. FD in turn can be divided into subtypes: Epigastric Pain Syndrome (EPS), Postprandial Distress Syndrome (PDS) or EPS-PDS overlap [3]. A number of methods can be used to evaluate dyspepsia. These include non invasive tests for helicobacter pylori to invasive procedures like Upper Gastrointestinal Endoscopy (UGIE). Empirical treatment using medications that neutralise or decreases gastric acid production are also included [4]. In order to identify the organic diseases that are causing the patient's symptoms and more importantly to rule out upper gastrointestinal malignancies UGIE is advised by Western endoscopy societies [5,6], Asian recommendations [7], and current

Brazilian guidelines [8]. Endoscopy is one of the most important investigations that can help with the diagnosis and management of dyspepsia but its usage is rather selective and is usually reserved for high-risk patients due to the procedure being invasive along with the high cost of the procedure itself [9-11]. Endoscopy can help to differentiate patients with organic causes such as erosive oesophagitis, Barrett's oesophagus, Peptic Ulcer Disease (PUD) and gastroesophageal malignancy from those with FD. There are several proposed guidelines for the management of the patients with dyspepsia. In order to rule out organic pathology the updated 2017 American College of Gastroenterology (ACG) and Canadian Association of Gastroenterology (CAG) guidelines recommend that patients 60 years of age or older who present with dyspepsia be investigated with endoscopy. However, patients at a higher risk of malignancy such as those with a positive family history may be offered endoscopy at a younger age [9]. If symptoms do not improve after the empirical treatment endoscopy is then advised. The present study aimed to identify the possible causes of non resolving dyspepsia using UGIE.

MATERIALS AND METHODS

This was a retrospective cross-sectional, single-centre study conducted in the Department of General Medicine, SKIMS Medical College and Hospital (tertiary care hospital), Srinagar, Jammu and Kashmir, India, from July 2017 to June 2022.

Inclusion criteria: Around 1600 patients, who underwent UGIE for non resolving dyspepsia were included in the study.

Exclusion criteria: Patients with dysphagia, odynophagia, overt upper gastrointestinal haemorrhage, jaundice, gastrointestinal surgeries, known PUD and significant organ failure were excluded from the study.

Endoscopic findings were documented in detail. All 1600 patients who presented with non resolving dyspepsia and underwent endoscopic evaluation. Non resolving dyspepsia was defined as persistent upper abdominal discomfort associated with heart burn or bloating after three to six weeks of adequate proton pump inhibitor therapy. Some guidelines suggest that in patients with no alarming features [Table/Fig-1] empirical treatment with proton pump inhibitors for 4-8 weeks combined with non invasive *Helicobacter pylori* (*H.pylori*) testing and treatment should be the initial approach before endoscopic evaluation [9,10].

Age ≥50 years
Family history of upper Gastrointestinal (GI) malignancy in a first-degree relative
Unintended weight loss
GI bleeding or iron deficiency anaemia
Dysphagia
Odynophagia
Persistent vomiting
Abnormal imaging suggestive of organic disease

[Table/Fig-1]: Alarming features of dyspepsia.

STATISTICAL ANALYSIS

For summarising the data descriptive statistics were used with mean and standard deviation for continuous variables and frequencies and percentages for categorical variables. Data processing and analysis were done by using Statistical Package for the Social Sciences (SPSS) software version 22.0.

RESULTS

A total of 1600 patients were included in the study. The mean±Standard Deviation (SD) age of the study subjects was 52±10 years. Around 1008 (63%) were males and 592 (37%) were females. The study subjects were in the age group of 18-80 years. Majority of the patients were less than 50 years of age whereas, approximately 23% of the patients were above 50 years. Epigastric pain was the predominant symptom in around 61% of the patients. Among 1600 patients, 560 (32%) patients had a history of smoking, 408 (25.5%) were taking analgesics for pain relief available over the counter like non steroidal anti-inflammatory drugs. Rest of the patients around 632 (39.5%) were currently taking proton pump inhibitors, H2 receptor blockers, antacids or even some herbal medications with some relief of the symptoms. Majority of the patients belonged to lower socio-economic backgrounds. Endoscopy was done as an outpatient procedure and biopsy was taken wherever a suspicious lesion was found to exclude malignant pathology. Endoscopy revealed normal findings in 836 (52.25%) patients. Abnormal endoscopic findings were found in 764 (47.75 %) of which majority were diagnosed with antral gastritis (15.31%). Significant endoscopic findings were more prevalent among the elderly age group. Gastric carcinoma was seen in 47 (2.93%) patients. [Table/Fig-2] depicts the endoscopic findings in the patients with non resolving dyspepsia.

DISCUSSION

Dyspepsia is one of the most commonly encountered clinical condition in outpatient clinical practice occurring in 2-5% of outpatient settings and the 40% of general population report symptoms of dyspepsia [12,13]. Epigastric pain was the most prevalent presenting symptom (61%) in the entire study population which is comparable with Abdeljawad K et al., findings from a prior

Endoscopic diagnosis	Number of patients (n)	Percentage (%)
Normal findings	836	52.25
Antral gastritis	245	15.31
Gastric ulceration	83	5.18
Duodenitis	91	5.68
Gastric growth/malignancy	47	2.93
Gastric polyp	42	2.62
Oesophageal growth/malignancy	35	2.18
Fundal gastritis	34	2.12
Pyloric channel ulcer	30	1.87
Duodenal ulceration	30	1.87
Duodenal ulceration	30	1.87
Oesophageal varices	29	1.81
Corpus gastritis	20	1.25
Oesophageal candidiasis	12	0.75
Pangastritis	12	0.75
Hiatal hernia	11	0.68
Gastroesophageal growth/malignancy	8	0.5
Oesophagitis	7	0.43
Gastroesophageal polyp	6	0.37
Oesophageal ulcerations	5	0.31
Gastric erosions	4	0.25
Oesophageal polyp	4	0.25
Gastric outlet obstruction	3	0.18
Anastomotic ulcerations	2	0.12
Impacted bone in D2 segment	1	0.06
Gastroesophageal tear	1	0.06
Vocal cord polyp	1	0.06
Vocal cord growth/malignancy	1	0.06

[Table/Fig-2]: Endoscopic findings in non resolving dyspepsia patients.

study which found it in 76.6% of cases as compared to 34% in another study by Thomson ABR et al., [14,15]. Yet initial therapeutic approaches are still debatable particularly for patients who have no alarming or warning symptoms. Endoscopy is the preferred investigation for people with dyspepsia and is also crucial for the diagnosis of clinically significant pathologies. Some of the indications for UGIE include patients ≥40 years with alarming symptoms like dysphagia, weight loss that is unintentional, odynophagia, anaemia, GI haemorrhage, persistent vomiting or family history of cancer. In presence of alarming symptoms UGIE should be offered immediately to these patients in order to improve the quality of life [16]. Current study revealed a higher prevalence (19.4%) of gastritis (antral+fundal+corpus+pan) Compared to the other diseases. The prevalence of gastric and duodenal ulcers was found to be 5.18% and 1.87%, respectively [Table/Fig-2].

Tytgat GN found that Gastric ulcer (1.6-8.2%), duodenal ulcer (2.3-12.7%), oesophagitis (0-23.0%), and gastric malignancies (0-3.4%) are the most commonly encountered endoscopic abnormalities [17]. Gastroesophageal malignancy (0.5%) is also reported in few cases as one of the causes of dyspepsia and most of the patients have been above 40 years of age [18]. Diagnosis of FD can be made after excluding all the possible organic causes of dyspepsia [19]. Studies have shown that with increasing age (after 40 years of age) the incidence and risk of gastric malignancy increases steadily [20]. Several factors are responsible for delaying diagnosis some of which include less use of the most appropriate choice of investigations, use of empirical therapy (acid suppression therapy) injudiciously and delaying referral of patients requiring urgent care. Endoscopy is advised for patients with dyspepsia who are ≥40 year of age and may also be offered to younger people if there are risk factors for

malignancy according to the ACG and CAG [21]. Endoscopy must be done early in those patients who are at risk of gastric cancer so as to detect it at an early stage as signs and symptoms of gastric cancer at an early stage are indistinguishable from other causes and thus may delay the diagnosis [22]. In patients with dyspepsia male gender and H.pylori infection were significant predictors of clinically significant findings [23,24].

Studies have shown an association of reflux oesophagitis and PUD with BMI and the incidence of reflux oesophagitis and PUD was much higher in patients with BMI ≥ 25 although the exact mechanism is unclear [25-27]. Age also is an important risk factor especially in patients with clinically significant findings [28,29]. Higher prevalence of dyspepsia in women has also been shown in a recent meta-analysis [16]. The reason for this gender difference could be due to psychological influences as well as certain hormonal factors leading to delayed gastric emptying in females [17]. In a recent meta-analysis it was also demonstrated that women had a higher prevalence of dyspepsia [30]. The psychological and hormonal factors that cause delayed gastric emptying in females may be the cause of this gender disparity [31]. Therefore, endoscopy should be done in all patients with non resolving dyspepsia with either the presence or absence of alarming symptoms and ≥ 50 years of age to exclude malignancy. There is an association of stress and low socioeconomic status with that of peptic ulcers and the incidence of peptic ulcers has been shown to decrease with increasing age [32]. It is important to differentiate dyspepsia from Gastroesophageal Reflux Disease (GERD) due to overlap of symptoms as the later can worsen after optimal proton pump inhibitor therapy [33,34]. Gastroscopy/ endoscopy should not be performed based on presence of warning symptoms alone as many studies have shown that the positive predictive value of endoscopic findings is low when endoscopy has relied only on the alarming symptoms. In young patients with chronic dyspepsia endoscopy can be avoided in the majority as the benefits of endoscopy in this population are uncertain.

Limitation(s)

The current study has certain drawbacks. Firstly in majority of the study participants specific information was not available thus proper correlation between risk factors including smoking and medication usage and the occurrence of important endoscopic results could not be ascertained. Secondly, because this study was done in a single-centre it is possible that the results do not accurately reflect the exact nature and course of upper GI tract disorders in this rural population. In order to evaluate the true burden of such diseases and effectively combat them large-scale epidemiological studies are required.

CONCLUSION(S)

Early endoscopy is an important investigation especially in those patients who are at risk of gastric malignancy with recent onset of dyspepsia. In young patients with chronic dyspepsia endoscopy can be avoided because the benefits in these patients cannot be ascertained. Based on the results from the present study endoscopy should be performed after proper evaluation and management and not merely based on the presence or absence of alarming symptoms especially in young patients with non resolving dyspepsia. Also, in order to prevent an additional financial strain on the underprivileged patient population care should be taken in selecting the patients for this invasive and costly procedure. Before subjecting such patients to an endoscopic procedure firstly lifestyle modifications along with the medication to neutralise or decrease gastric acid production should be used and young patients without alarming features should be counseled regarding the fact that endoscopy is unlikely to reveal any significant abnormal findings so that such an invasive procedure can be avoided in the majority of young adult population.

The present study strongly indicates overuse of UGIE especially in the absence of alarming features.

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