

An audit of open access upper gastrointestinal endoscopy by physicians in a rural hospital in Kerala, India

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Abstract

Access to endoscopy in India, particularly in a rural setup, is limited by the cost, trained personnel and limited resources. Literature suggests inappropriate referrals to be high, thereby over stretching this limited procedure, resulting in over-servicing. The present study was carried out to evaluate adherence of primary care physicians to ASGE guidelines when referring patients for upper GI endoscopy in rural Indian population. An observational cross-sectional study on consecutive patients referred to Department of Medicine for upper GI endoscopy. Patients above the age of 40 years were included in the study. All dyspeptic patients above the age of 50 years or patients with alarm findings were considered as appropriate referrals. Descriptive statistics was done. 315 patients were included in the study. Appropriate referrals were 57.14%. Majority of the referrals were for dyspepsia and pain abdomen. Among all patients, H pylori infection was positive by rapid urease test in 55.23% indicating inadequate eradication therapy. Important endoscopic findings among the patients were carcinoma stomach, gastric/ duodenal ulcer, varices and gastritis. Among patients with dyspepsia, malignancies were noted in 1.96% of patients. Even though appropriate indications were high, the percentage of positive findings among dyspeptic patients was very low. Adequate eradication therapy for H pylori and empirical acid suppression therapy to reduce symptoms of dyspepsia as well as following strict guidelines for appropriate referrals will improve patient selection for upper GI endoscopy. This can improve efforts aimed at enhancing positive pathology identification, improved quality and efficiency of care.

Keywords: Upper gastrointestinal, Endoscopy, Audit, Appropriate, Referrals.

Introduction

Upper gastrointestinal disorders are frequently the commonest symptoms presenting to the physician and the prevalence of these disorders increases with age.⁽¹⁾ These symptoms tend to be non-specific and an elaborate workup maybe necessary many times. Amongst these symptoms, dyspepsia forms the most common indication for gastrointestinal endoscopy. Approximately more than half of them do not have any significant underlying organic lesion. Due to the high numbers of dyspeptic patients being referred, prolonged waiting times for endoscopic procedures are common, and thereby impacting the needy. Additionally, high cost, unnecessary burden on both patient and endoscopist, and stretching of limited resources will occur. Adherence to recommended guidelines like American society for gastrointestinal endoscopy (ASGE), i.e. dyspeptic patients with age of 50 years and above and patients with alarm symptoms could reduce these problems and increase effectiveness of endoscopy.⁽²⁾

In India, gastric carcinoma is the second leading cause of cancer related deaths amongst both men and women and ranks in the top 5 cancer list in the age group of 15-44 years. H. pylori is a class 1 carcinogen and a known risk factor for active gastritis, peptic ulcers, mucosa-associated lymphoid tissue lymphoma,

and gastric cancer and surprisingly could be protective against gastric oesophageal reflux disease. H pylori prevalence in India varies from 60-80%.⁽³⁻⁶⁾

This study was done to audit and evaluate the reasons for referral for endoscopy and whether guidelines were adhered to, as well as to correlate symptoms with endoscopy findings. To our knowledge, this is first study to evaluate such practices in our region.

Materials and Methods

The audit concerned all upper gastrointestinal endoscopy procedures performed in the internal medicine department of DM Wayanad institute of medical sciences, Wayanad over a period of 6 months from July to Dec 2016. All endoscopic procedures undertaken to explore the oesophagus, stomach and proximal duodenum were included. It was defined as appropriate or inappropriate according to the ASGE guidelines. Appropriate indications (14-7) included, alarm features (Family history of upper gastrointestinal malignancy in a first-degree relative, unintended weight loss, gastrointestinal bleeding or iron deficiency anaemia, dysphagia, odynophagia, persistent vomiting, and abnormal imaging suggesting organic disease) and dyspeptic patients over age of 50 years. All other indications were deemed inappropriate.

Patients over the age of 40 years with referrals from various departments were included in the study. Patients under the age of 40 years, incomplete details, foreign body ingestion or those who refused consent were excluded from the study. The sex, age, symptoms, alarm symptoms, endoscopic findings, H pylori rapid urease test (RUT) report and histological findings, when necessary were recorded. A written consent for the study was taken from all patients prior to the procedure. All endoscopic findings were confirmed on histopathology whenever necessary.

Statistical analysis: Descriptive statistics was used and numbers expressed in percentages.

Results

A total of 315 patients were included in this audit. The mean age was 55.96 years and 190 (60.31%) were males. The major referrals were for dyspepsia (64.76%), followed by pain abdomen (15.23%). Important endoscopic findings were carcinoma of stomach/ oesophagus, gastric/ duodenal ulcer, varices and gastritis. Appropriate referrals were 57.14%. The most appropriate indication was hematemesis (Table 1).

Table 1: Significant findings in various conditions in the present study

Significant endoscopy findings	Dysphagia (16)	Hematemesis (20)	Anemia (13)	Dyspepsia (204)	Pain abdomen (48)	Total
Ca. Oesophagus	2	1	-	-	1	4
Cricopharyngeal ulcer	1	-	-	-	-	1
Oesophageal ulcer/ stricture	2	-	-	-	-	2
Duodenal ulcer	-	4	1	3	-	8
Gastric ulcer	-	1	1	-	3	5
Varices	-	8	1	-	-	9
Carcinoma stomach	-	-	1	5	3	9
Candida	-	-	3	-	-	3
Barrettes oesophagus	-	-	-	1	-	1
Total significant findings	5/16	14/20	7/13	9/204	7/48	42/315

Among patients with dyspepsia, 4 cases of carcinoma stomach and 1 case of Barrett's oesophagus was noted. Three cases were in the 7th and 8th decade (77, 76 and 63 years) while one case was in the fifth decade in which the female was 48 years old. Barrett's oesophagus was seen in 50 year old male. 131 of these cases were above age of 50 years and were deemed appropriate. Among patients with hematemesis (6.34%), 1 case of carcinoma oesophagus, 4 cases of duodenal ulcer, 2 cases of gastric ulcer, 1 case of oesophageal ulcer and 8 cases of varices were significant findings.

Amongst the 315 cases, H pylori positivity by RUT was seen in 174 cases (55.24%). Among 8 cases of carcinoma stomach, 7 cases (87.5%) showed H pylori positivity. Among 315 cases total malignancies including pre-neoplastic conditions were 14/315 (4.44%) cases with 3 cases of candida infections. No major complications during upper gastrointestinal endoscopy were noted in all of the 315 cases during the study.

Discussion

The main indication for endoscopy is to identify organic disease, particularly malignancy. Inappropriate indications affect the quality of endoscopy and affect

the patient financially and psychologically. Upper GI endoscopy is a safe low risk procedure, none the less, complications are infrequently found and occasional mortality is also seen. Complications include aspiration pneumonia, respiratory arrest, myocardial infarction, stroke, shock, secondary infections, perforation, bleeding, etc. In our study, no major complications were noted during or immediately after procedure. Delayed complications, if any, were not reported to us, and hence not included in our data.⁽⁸⁾

This audit was performed to identify the appropriate referrals for endoscopy in our setup. Being a developing country with limited resources and very few qualified endoscopists, triaging of this valuable investigation is necessary. Increasing the burden on the endoscopists can result in complications and appropriate guidelines needs to be setup for the Indian scenario. In our study 8 cases of carcinoma stomach was noted. Dyspepsia (50%) was the most common complaint among these patients. 75% cases of carcinoma stomach were noted in the elderly (>60 years). Amongst the remaining 2 cases, one was a 40 year old female with anaemia and the other was a 48 years old male with dyspepsia. 7/8 (87%) cases of carcinoma stomach showed H pylori positivity.

The overall appropriate referrals in our study were 57.14%. This is comparable to other studies all over the world (Table 2).^(2,9-14) Inappropriateness in various studies range between 5-62% and is shown to be higher in Asian countries, which is similar to the findings in our study.⁽⁹⁾ Since different studies use different guidelines, it is difficult to compare the differences in rates of appropriateness. In our study, comparatively it was a bit low, probably due to low knowledge/ training of referral physicians/ specialist regarding ASGE guidelines. However, looking at cases of dyspepsia over the age of 50 years, the overall incidence of malignancies or any significant findings in our study is very low (4.41%). If the overall data is looked at, adherence to ASGE guidelines showed more frequent neoplastic findings and ulcers compared to inappropriate referrals in our study. Patients with dyspepsia primarily need to be tested (using non-invasive methods) and treated for H pylori. If symptoms persist, only then should they be referred for endoscopy.^(7,13)

Table 2: Comparison of various studies for appropriate indications according to American society for gastrointestinal endoscopy criteria

Study	Country	Appropriate	Year
Aljebreen AM et al ⁽⁹⁾	Saudi Arabia	68.7%	2008
Al-Romaih WR et al ⁽¹⁰⁾	Saudi Arabia	72.5%	2006
Chan YM et al ⁽¹¹⁾	Malaysia	88.3%	2004
Tachi K et al ⁽¹²⁾	Ghana	58.9%	2011
Keren D et al ⁽¹³⁾	Canada	84.1%	2011
Hughes-Anderson W et al ⁽¹⁴⁾	Australia	92%	2002
Present Study	India	57.14%	2016

The incidence of gastric cancer is rising in India with an expected 50,000 new gastric cancer cases by 2020. The incidence is known to be relatively high in Southern India and the highest rates are found in the north eastern region. The incidence of gastric carcinoma shows a marked increase after the age of 50 years and H pylori infection is considered to be one of the most important risk factors for non-cardia gastric cancer. Females are shown to have an earlier age of onset of gastric cancer and similarly we had one case in a 48 year old female, which is an inappropriate age for referral for endoscopy according to ASGE guidelines.⁽¹⁵⁻¹⁷⁾

In young patients without alarm symptoms and in regions of high H pylori prevalence like India, "test or treat" for H pylori or an empirical acid suppression trial should be the management strategy of choice. H pylori being a class I carcinogen and the commonest cause of dyspepsia, a move towards H pylori treatment and

eradication will reduce the incidences of malignancy and also inappropriate endoscopy.^(7,18)

This study also shows overuse of upper GI endoscopy in patients with dyspeptic symptoms posing a diagnostic and therapeutic challenge. Inappropriate endoscopy was high in dyspeptic patients as ASGE guidelines were not followed.⁽²⁾ Amongst patients with dyspepsia, the significant findings were found in less than 2% of the cases in our study.

ASGE guidelines are known to be highly sensitive but less specific.^(9,10) In our study too, the number of significant findings were very less. This sensitivity may be affected by major limitations in our study like significant lack of knowledge of patients' treatment history and lack of data regarding specific speciality referrals. This is because dyspeptic patients frequently change doctors and treatment history is not usually preserved and follow up is difficult. We are not sure whether all our cases had undergone therapy or not, but the high prevalence of H pylori in our study population would probably indicate inadequate or no therapy at all. Studies show gastroenterologists have best appropriateness while referring compared to primary care physicians and general surgeons.^(2,9,12)

Having said this, we would also like to comment based on experience that inappropriate indications are sometimes useful since it reassures the patient and maybe appropriate from the patient's point of view. It would reduce number of consultations, prescription rates and improve patient's quality of life (alleviate anxiety, depression and fear of malignancy) and patient satisfaction.^(9,12) However, too many inappropriate or negative endoscopic procedures could be costly and borderline unethical. Even though appropriate valid and reliable criteria are essential, it should not take away the decision making in clinical medicine. Clinical judgement of doctors, who have experience and clinical information, should be factored in although sometimes it may be deemed inappropriate based on existing ASGE guidelines. Inappropriateness cannot be completely stopped, however, suitable guidelines, educational programmes and referral physicians training can possibly reduce it and make it more relevant and useful.⁽¹⁰⁾

Our findings support the existing knowledge that ASGE guidelines are necessary to optimize the resources and endoscopy should be undertaken only if it satisfies the guidelines. We would also take this opportunity to suggest that Indian specific guidelines are necessary as the H pylori prevalence is much higher here compared to America, for which ASGE guidelines is framed. India needs to move towards H pylori eradication and thereby reduce dyspeptic symptoms as well as incidence of gastric cancer. With the introduction of these guidelines in clinical practice, inappropriate indications can be reduced. Also educational programmes, especially for primary care

physicians will improve the overall effectiveness of this procedure.

Conclusion

Large proportion of patients referred for endoscopy had very few appropriate indications based on the significant findings. Resource utilization, eradication of H pylori infection, specific speciality referrals, training of primary care physicians and better understanding of the evolving diseases are needed to reduce inappropriate referrals. India specific guidelines for referrals and H pylori eradication are also necessary as ASGE guidelines are more applicable in low H pylori prevalence areas.

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