

Appropriateness of Referral for Upper Gastrointestinal Endoscopy in a Tertiary Care Hospital

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DOI: <https://doi.org/10.3329/jafmc.v14i2.45897>

Abstract

Introduction: Upper gastrointestinal endoscopy (UGE) allows physicians to directly schedule endoscopic procedures for their patients without prior consultation. Evaluation of appropriateness of endoscopic procedures is associated with costs and benefits.

Objectives: To assess the appropriateness of the use of UGE in an open-access setting in Bangladesh.

Materials and Methods: This cross-sectional multicenter study was conducted among 300 patients referred for UGE at Dhaka Medical College Hospital and Shaheed Suhrawardi Medical College and Hospital from January 2016 to June 2016. The American Society for Gastrointestinal Endoscopy (ASGE) guidelines was used to assess the appropriateness of referral. The participants were selected by purposive non-probability sampling and a pre-tested questionnaire was used for data collection.

Results: Out of 300 respondents 62.3% was male. History of smoking was more in male and taking NSAIDs were more in the female. In UGE 46.7% revealed normal findings but majority 53.3% had some pathology. About 86% cases, UGE was found appropriate according to ASGE guideline and majority appropriate cases 37.3% were referred by internal medicine specialist. Appropriateness of referral among different physicians was not statistically significant.

Conclusion: Appropriateness of referral for UGE performed in tertiary care level hospitals in an open-access setting like Bangladesh was satisfactory.

Key-words: Upper gastrointestinal endoscopy, Peptic ulcer diseases.

Introduction

Upper gastrointestinal endoscopy (UGE) is one of the most commonly performed medical procedures globally. Progress in endoscopic technology has advanced the practice of medicine as it relates to the gastrointestinal tract. Over the last thirty years, scientists and clinicians have acquired unprecedented access to the gastrointestinal lumen, the pancreatic and biliary ductal

system. Open-access endoscopy allows physicians to directly schedule endoscopic procedures for their patients without prior consultation. Esophagogastroduodenoscopy (EGD) affords an excellent view of mucosal surfaces of the oesophagus, stomach and proximal duodenum. Direct examination of the mucosal surface provides greater information than that gained by two-dimensional scans and x-rays¹.

It is estimated that 1% of the population of the United Kingdom require EGD every year². Approximately 70,000 outpatient UGE is performed each year in Switzerland which has a population of 7.2 million³. The diseases most commonly sought out by endoscopy are reflux oesophagitis, oesophageal varices, oesophageal cancer, gastric ulcer, gastric cancer, duodenal ulcer and coeliac disease. Most patients referred for endoscopy complaining of symptoms that come under the general heading of dyspepsia. Gastrointestinal symptoms are responsible for about 10% work of general practitioners with upper abdominal symptoms accounting for about half of the complaints^{4,5}.

Materials and Methods

This Cross-sectional multicenter study was conducted among 300 patients who were referred to Dhaka Medical College Hospital and Shaheed Suhrawardi Medical College and Hospital for open-access EGD during the period of 6 months from January 2016 to June 2016. The American Society for Gastrointestinal Endoscopy (ASGE) guideline was used to assess appropriateness for referral⁵. Purposive type of non-probability sampling technique was applied to enrol the study participants. Data were collected by using a pre-tested questionnaire and neither any intervention nor any invasive procedure was undertaken. Before starting interview, a brief introduction on the aims of the study was presented to the respondents and informed written consent was taken. The collected data were thoroughly checked for consistency and completeness. Data were coded and analyzed using Statistical Package for Social Sciences (SPSS) version 23. Chi-square test was performed to find the association between variables and p-value < 0.05 considered as significant.

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Results

In the present study among 300 subjects, 62.3% were male with a male to female ratio 1.7:1. About 62% of respondents were below this age group 46 years and 80% had monthly family income below 10,000 taka whereas only 4.3% had income over 20,000 taka. The literacy rate among the respondents showed 32.7% were illiterate and only 11.7% were graduate and above (Table-I). Among the male respondents 70.6% had history of smoking and 32.7% female had history of taking long term NSAIDs. About 86% indications were appropriate according to ASGE guideline (Table-II). About appropriateness of referral for UGE by different physicians was not statistically significant p-value >0.05 (Table-III). According to UGE findings 46.7% found normal, 12.7% had PUD, 3% gastric ulcer, 7% gastritis, 5.3% gastric tumor, 14.7% esophageal varices, 5% had reflux esophagitis, 2.3% Esophageal carcinoma and 3% others (Table-IV).

Table-I: Socio-demographic characteristics of the respondents (n=300)

Characteristics	Frequency	Percentage
Age in Years	15 to 45	186
	46 to 95	114
Sex	Male	187
	Female	113
Education Status	Illiterate	98
	Up to primary	41
	Up to SSC	80
	Up to HSC	43
	Graduate and above	35
	Others	03
Monthly Family Income in Taka	<10,000	240
	10,000 to 20,000	47
	>20000	13

Table-II: Distribution of Respondents according to referring indications (n =300)

Indications	Frequency (%)	
Appropriate Indications	Upper abdominal symptoms persistent despite therapy	96(32)
	Upper abdominal symptoms associated with symptoms or signs suggesting serious organic disease	17(5.7)
	Upper abdominal symptoms associated with symptoms or signs in patients aged >45 yrs	13(4.3)
	Dysphagia or odynophagia	16(5.3)
Inappropriate Indications	Oesophageal reflux symptoms persistent or recurrent despite therapy	03(01)
	Persistent vomiting of unknown cause	12(04)
	Active or recent GI bleeding	41(13.7)
	Presumed chronic blood loss/iron deficiency anaemia	02(0.7)
	Sampling of tissue or fluid	02(0.7)
	To document or treat oesophageal varices	49(16.3)
	Other appropriate indications	06(1.9)
	Total	258 (86)

Indications	Frequency (%)	
Inappropriate Indications	Healing of duodenal ulcer	09 (3)
	Surveillance of healed benign disease such as esophagitis or gastric or duodenal ulcer	03 (1)
	Functional in origin	09 (3)
	Uncomplicated heartburn responding to medical therapy	15 (5)
	Metastatic adenocarcinoma of unknown primary site	04 (1.3)
	elective surgery for non-upper gastrointestinal disease	01 (0.3)
	To confirm radiologic lesions	01 (0.3)
	Total	42 (14)

Table III: Cross Tabulation between referring physicians and appropriateness of indication (n=300)

Referring Physicians	Appropriateness of Referring Indication			Statistics
	Appropriate	Inappropriate	Total	
Gastroenterologist	39 (13%)	06 (2%)	45 (15)	χ ² = 2.64; df = 3; p > 0.05
Internal medicine specialist	112 (37.3%)	14 (4.7%)	126 (42)	
General Physician	86 (28.7%)	16 (5.3%)	102 (34)	
Others	21 (7)	6 (2%)	27 (9)	
Total	258 (86)	42 (14)	300 (100)	

Table-IV: Distribution of respondents by endoscopic findings (n =300)

Endoscopic Findings	Frequency (%)
Normal	140 (46.7)
PUD	38 (12.7)
Gastric ulcer	09 (03)
Gastritis	21 (07)
Gastric tumour	16 (5.3)
Pyloric stenosis	01 (0.3)
Oesophageal varices	44 (14.7)
Reflux esophagitis	15 (05)
Oesophageal carcinoma	07 (2.3)
Miscellaneous	09 (03)

Discussion

In Bangladesh, the exact aetiological and clinical presentation of gastrointestinal diseases are not researched in vast. To find out appropriate referring indications the cross-sectional study was carried out enrolling 300 subjects aged between 15-95 years in Dhaka Medical College Hospital and Shaheed Suhrawardy Medical College Hospital, Dhaka.

In this present study, 62.3% were male with a male: female ratio of 1.7:1. Age ranging from 15 to 95 years with a median age of 40 years, 38% of respondents were above the age group ≥46 years. Most of the respondents 55% were in the age group of 26 to 50 years, 26.7% were above 50 years and the rest 18.3% were below 25 years (Table-I). This reflects that during the active age of life these upper GI symptoms occur most. In a study in India, the findings are similar that mean age of patients who went for endoscopy was 41.7±12.7 years, and among them 34% were female⁶. These findings are more or less similar to another study carried out at Rajshahi Medical College Hospital in which average age of the patients was 39.9

years with the range of 18-90 years. 50% of patients were in the age range of 20-39 years⁷. In Ghana ages ranged from 14-95 years with a mean of 46.01 ±16.97 years⁸. But this result does not correlate with western countries^{9,10,11}, where mean age of their patients was over 50 years of age. Epidemiology of dyspeptic symptoms in Asian region differs from that in the West. It might be due to improved hygiene and ability to buy potent anti-secretory and ulcerogenic drugs.

Among the respondents, 80% had monthly income below 10,000 whereas, only 4.3% had income over 20,000. Monthly income mean (±SD) was 8748.7(±6301.27) Taka (Table-I). These findings are also more or less similar to another Bangladeshi data carried out five years back, where most of the patients were from a low socio-economic condition with a mean(±SD) monthly income of taka 4080(±2045)⁷. Among total patients, 46.4% were illiterate and had primary education, 41% had higher secondary education and 12% had graduation and above (Table-I). This result is also similar to an Asian study where, none/primary were 44.9%, secondary 42.2%, and tertiary 12.8%¹².

Among the participants, 46% had history of smoking in which 5.3% was female. Moreover, 22.3% had history of taking long term NSAIDs and 32.7% among them were females (Table-II). Smoking history is not similar but history of taking NSAIDs was more or less similar to another Asian study where 855 had no history of taking NSAIDs¹³.

Of the 300 referrals, 86% were classified as appropriate according to ASGE guidelines, and 14% as inappropriate (Table-III). Among all referring physician 15% were Gastroenterologist, 34% general practitioners, 42% internal medicine specialist and 9% others. Of all inappropriate indications General practitioners were most 5.3%, Internal medicine specialist 4.7% gastroenterologist 2% and this would suggest caution in opening access to endoscopy to non-specialists (Table-IV). In a study in Ghana in case of referring physician 15% were gastroenterologist and rest were others⁸. Appropriateness is more or less similar to another Asian study in Malaysia where appropriate rate was 88.35% and inappropriate rate was 11.7%⁸, in Israel where appropriateness rate was 84.1% and inappropriate rate was 15.9%¹² and USA study where appropriate rate was 84%¹⁴. But referring physician category is not the same with other studies¹³.

The most common appropriate indications were upper abdominal symptoms persistent despite an appropriate trial of therapy 32% (Table-III). This also was the most frequent appropriate indication in another Asian study¹² and another study in Italy¹⁵. On the other hand, the most frequent inappropriate indications were uncomplicated heartburn responding to medical therapy 5%, healing of duodenal ulcer and functional in origin both 3%, metastatic adenocarcinoma

of unknown primary site 1.3% (Table-III). In many other European and American studies indications are not the same. That might be in developing countries like Bangladesh due to lack of proper nutrition, hygiene and unhealthy lifestyle.

Among findings 12.7% had PUD, 3% gastric ulcer, 7% gastritis, 5.3% gastric tumor, 14.7% oesophageal varices, 5% reflux oesophagitis, 2.3% oesophageal carcinoma and 3% others (Table-V). This study finding is more or less similar with other findings revealed by endoscopy in Bangladesh¹⁶ where gastroduodenal mucosa was found normal in 58.14%, gastritis in 11.63%, duodenitis 2.33%, reflux oesophagitis 4.65%, peptic ulcer 17.44% and carcinoma of stomach 5.81%. In another study in Bangladesh, endoscopy revealed that duodenal ulcer 34% was the most common cause of UGI bleeding followed by rupture of portal varices 16%, neoplasm 10%, gastric ulcer 08% and gastric erosion 06%⁸. A normal endoscopic examination is not considered significant, although this may be relevant to patient care in helping to rule out a serious pathologic condition. A negative endoscopy in dyspeptic patients significantly reduce the number of specialist consultation and lessens the burden on the medical system. Other studies^{17,18} have demonstrated better quality of life and patient satisfaction with normal endoscopy.

Conclusion

This study revealed that the appropriateness of referral for upper GI endoscopy performed in tertiary care level hospitals in an open-access setting like Bangladesh is more or less satisfactory. A further improvement of the effectiveness of endoscopy can be achieved by creating awareness among physicians and preparing a national guideline in this aspect.

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