



Indications and yield of Upper GI Endoscopy: Single centre experience in Sylhet, Bangladesh

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Abstract

Background: This retrospective study was done to see common indications and endoscopic yield of upper gastrointestinal (Upper GI) endoscopy.

Methods: Data was retrieved from endoscopy registrar who were being treated at a specialized gastroenterology private practice in Bangladesh. Patient's age, sex and indications for which endoscopic examination was done and endoscopic findings were recorded. This data was then analyzed using SPSS 20 (Statistical Package for Social Science Version 20). Percentage, mean and standard deviation were calculated.

Results: Total 3477 reports of Upper GI endoscopic examination performed from January 11, 2016 to December 17, 2019 were retrieved. Age of patients varied from 10 to 110 years (Mean 44.23 and SD-16.24), of them 1805 (51.92 %) study subjects were males. Among them 1055 (30.34%) subjects belonged to 46-60 age groups. Most common indication was abdominal pain 1075 (30.92%) followed by dyspepsia 534 (15.36%) and vomiting 390 (11.22%). Endoscopically no abnormality was detected among 812(23.35%). Most common findings were duodenal ulcer 784 (22.54%), hiatus hernia was 245 (7%), malignant lesions in oesophagus and stomach 293(8.43%) and 214(6.15%) respectively. Incidence of both oesophageal and gastric neoplastic lesions were high among subjects age above 45years.

Conclusion: Upper GI endoscopy is the gold standard investigation for gastrointestinal symptoms. Common indications were abdominal pain, dyspepsia, dysphagia and vomiting and common yield of upper GI endoscopy were duodenal ulcer disease, oesophageal neoplasm, gastric neoplasm and hiatus hernia. But no pathology was also found in about one fourth of patients undergoing the investigation.

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INTRODUCTION

Upper GI disease presents with a variety of symptoms including Dyspeptic symptoms as well as gastro- oesophageal reflux symptoms.¹ These are common complaints affecting 25--40% of the general population during their life time.² The most common presenting complaints were epigastric pain, dysphagia, and odynophagia.³ Patients with upper GI symptoms frequently consults with physicians and it

significantly affect patients' mental health.⁴ One study from our country reported abdominal pain, bloating, heart burn, chest pain, early satiety and vomiting as common upper GI symptoms.² Again the pathology underlying upper GI symptoms is varied and may be associated with significant morbidity and mortality.³

Oesophago-gastro-duodenoscopy (OGD) is the gold standard investigation for upper GI symptoms, It has the added benefit of enabling mucosal biopsy sampling and brush cytology for histopathologic diagnosis and therapeutic interventions can also be carried out.⁵

According to several published studies common findings of upper GI endoscopy are gastritis, duodenitis, oesophagitis, gastric ulcers, duodenal ulcers, gastric masses, hiatus hernia, oesophageal candidiasis, gastro-oesophageal varices, oesophageal ulcers, oesophageal stenosis, worms in the duodenum, gastric erosions, foreign body in oesophagus, oesophageal masses, gastric outlet obstruction and gastric vascular malformations with varying prevalence in different study populations.^{1,2,4,6,7} But normal findings at upper GI endoscopy despite of upper GI symptoms are not uncommon.⁵

With this background this retrospective study was designed to see common symptoms and indications for which upper GI endoscopy and the endoscopic findings in Sylhet, a city of north eastern part of Bangladesh.

METHODOLOGY

Study Design:

This was a retrospective study done in a specialized private practice centre in Sylhet, Bangladesh. Patients' data including age sex, indications and endoscopic findings were retrieved from endoscopy registrar of the centre.

Duration of study:

Data of patients undergoing endoscopic examination from 11/01/2016 to 17/12/2019 were enrolled

Endoscopic assessment:

The endoscopic evaluation of patients was performed using a sterile Olympus video gastroscope (Excera 170) from Olympus Medical (series) with lidocaine pharyngeal spray.

Data Collection:

Data was collected from the endoscopy register available in the department. Data including age, sex, indication for upper GI endoscopy and endoscopic

diagnosis were documented. Biopsy reports were also collected from the record where applicable.

Data Analysis:

Calculation was performed by using SPSS 20 (Statistical Package for Social Science Version 20). Frequency and percentage of each variable were calculated and the same was depicted as tables and graphs.

RESULTS:

In this study total 3477 subjects were included. Age of them varied 10 to 110 years (Mean 44.23 and SD-16.24). Among them 1805 (51.92 %) were males. In this series 1055 (30.34 %) were within group of 46 – 60 years of age followed by 984 (28.30 %) within 31 – 45 years age group.

Common indications or symptoms for upper GI endoscopy were abdominal pain 1075 (30.92%), dyspepsia 534 (15.36 %), vomiting 390 (11.12%) dysphagia 379 (10.9%) globus sensation 173 (4.98 %), heart burn 161 (4.63 %) and chest pain 153 (4.40 %) (Table 1). On the other hand common endoscopic findings were duodenal ulcer disease 784 (22.54%) (Table 2). Duodenal ulcer disease and gastric ulcer disease are more common among patients age 46-60 years and 31-45 years group respectively (Table 3). Again malignant neoplasm of oesophagus were 293 (8.43%) among them 127 (43.34%) in 46-60 age group followed by 117 (39.93%) in >60 years age group. Malignant neoplasm of stomach were 214 (6.15 %) among them 88 (41.12%) more in 46-60 age group followed by 81 (37.85%) in >60 years age group. Hiatus hernia were 245 (7%) more in >60 followed by 46-60 years of age group. Barrett's oesophagus were 167 (4.8%) more in 31-45 followed by 46-60 years of age group. Non erosive antral gastritis 121 (3.48%) more in 46-60 followed by 31-45 years of age group. Upper GI endoscopy report was normal in 812 (23.35%) patients in this series.

DISCUSSION:

Upper GI Endoscopy is done for evaluation of a number of conditions associated with upper GI symptoms. In our series abdominal pain is most common indication. One report from our country² (Perveen et al) found abdominal pain as most common upper GI symptom. Abdominal pain is the

most common cause for upper GI endoscopy in Uganda³.

Second most common indication of upper GI endoscopy was dyspepsia in our study, one study in United States (US) stated that dyspepsia was 12.96 % in Asian populations which is slightly lower than our report.⁸ This may be due to difference in socio-economic condition, food habit and environment.

Indication for OGD, vomiting was 11.12% which is bit higher (6.6%) than one report from Nigeria⁵. In our country recurrent urinary tract infection and acute gastroenteritis is very common which may present with vomiting. Again difference in socio-economic condition, food habit and environment might have role in this regard.

Most common endoscopic findings of our study was duodenal ulcer disease (22.54%) which is about more than two times higher than one report from our country (10.32%) and report from Nigeria (8.8%).^{5,9} Our study includes patients attending private centre. And food habit and habit of use of tobacco in Sylhet region differ from other parts of our country as well as Nigeria. So this difference may be due to difference in population, food habit and personal habit. It also may be due to higher rate of *Helicobacter pylori* (*H. pylori*) infection from early childhood in our country. But one report showed prevalence of duodenal ulcer disease about 16 % among patients undergoing upper GI endoscopy in Wuhan.¹⁰

We found gastric ulcer 5.29% in our study which is bit higher (3.28%) than another study of Bangladesh.¹¹ But that study was conducted in Dhaka city among urban populations, our study mostly included rural populations who are frequently used to take NSAID without registered physician advice which may be the cause of higher rate of gastric ulcer.

In our study inlet patch was about 0.3% which is similar to report from china.¹²

Author's primary interest was to look at different malignancies prevalent in upper GI and their burden in our population, oesophageal growth was 8.43 % which is more than three times higher (2.8%) than other studies.⁵ This study was done in North-East part of Bangladesh where betel nut chewing is much more higher than other parts of the country, In North-

East part it is a cultural norms to chewing betel nuts. Further study is required to find out other etiology behind this higher oesophageal growth rate.

In our series about 6.15% subjects has malignant lesion involving stomach. 214 subjects was diagnosed as a Gastric Carcinoma (GC) among which 21% (45 subjects) was at or below 45 years of age, which is near similar to other part of the world. Young age GC were commonly diagnosed at their thirties, without sexual predominance.⁶

In this study seven percent patients had hiatus hernia which is fifteen times more than report from Nigeria.⁵ Obesity is very common in Bangladesh which may explain this higher rate.¹³ But our report is far less than report from where only dyspeptic patients were investigated.¹⁴ But our report is similar to report from Taiwan.¹⁵

Ratio of male and female patients was approximately 1:1. Majority of the patients were young, and most procedures were done as outpatients without the requirement of conscious sedation which is similar to other study in other part of the world.¹⁶

About 57.47 % of subjects at or below 20 years of age had significant findings on endoscopy (19.15% had duodenal ulcer, 5.14% had Barrett's oesophagus, 7.47 % had Pangastritis and or fundal gastritis) which is very alarming. Further study is required in this field to find out the causes of significant GI abnormalities among young adults.

Limitations: It was a retrospective study where patients epidemiological information were not available. Any associated risk factors like personal history of smoking, or tobacco use, life style, food habit, *H. pylori* infection status were not available.

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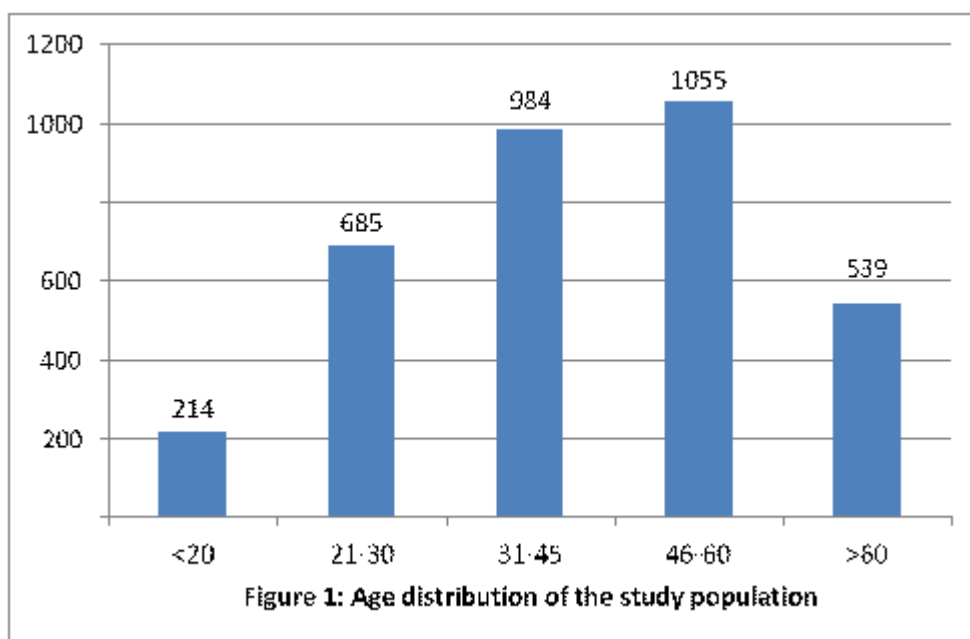


Table 1: Distribution of various indications for Upper GI endoscopy among study subjects.

Indications	N	Percent
Abdominal Pain	1075	30.92
Dyspepsia	534	15.36
Dysphagia	379	10.9
Globus	173	4.98
Soremouth	112	3.22
Heart Burn	161	4.63
Vomiting	390	11.22
Haematemesis	49	1.40
Haemoptysis	11	0.32
Anaemia	68	1.95
Loose Motion	37	1.06
Chest Pain	153	4.40
Abdominal Lump	22	0.63
Jaundice	11	0.32
Follow-up of Upper GI Malignancy	48	1.38
CLD	31	0.89
Melaena	20	0.58

Foreign Body Ingestion	6	0.17
Cervical Lymphadenopathy	17	0.49
Corrosive ingestion	10	0.29
weight loss	22	0.63
Others	148	4.26

Table 02: Pattern of various Upper GI abnormalities among study subjects

Diagnosis	N	Percent
Oesophageal ulcer	181	2.33
Oesophageal growth	293	8.43
Barrett’s oesophagus	167	4.8
Inlet patch	11	0.31
Hiatus hernia	245	7
Varices	73	2
Oesophageal stricture	3	0.08
Oesophagitis/Oesophageal candidiasis	150	4.31
Motility disorder(suspected)	6	0.17
Oesophageal ring	12	0.35
Pangastritis/fundal gastritis	135	3.89
Gastric ulcer	184	5.29
Gastric growth	214	6.15
Duodenal ulcer	784	22.54
Duodenal ulcer with obstruction	42	1.20
Gastric polyp	97	2.79
Duodenal polyp	27	0.78
Erosive antral gastritis	69	1.98
Non-erosive antral gastritis	121	3.48
Ascariasis	7	0.20
Suspected Malabsorption	3	0.09
Gastro-jejunosomy operation	9	0.26
Gastric Lymphoma(suspected)	13	0.37
Portal hypertensive gastropathy	46	1.32

Erosive duodenitis/duodenitis	141	4.05
Duodenal diverticula	7	0.20
Oesophago-gastrostomy	24	0.69
Antral ectasia	2	0.05
Antral Polyp	21	0.60
Normal	812	23.35

Table 3: Distribution of Upper GI diseases based on age group.

Diagnosis	≤20	21-30	31-45	46-60	>60
Oesophageal ulcer	4	40	56	53	28
Oesophageal growth	0	11	40	127	117
Barrett’s oesophagus	11	46	50	47	13
Inlet patch	0	2	4	3	2
Hiatus hernia	8	30	54	74	79
Varices	3	2	14	35	19
Oesophageal stricture	0	0	0	2	1
Oesophagitis/Oesophageal candidiasis	7	25	47	57	24
Motility disorder(suspected)	0	20	0	0	4
Oesophageal ring	0	1	2	7	2
Pangastritis/fundal gastritis	16	33	37	36	13
Gastric ulcer	5	37	56	55	31
Gastric growth	0	8	37	88	81
Duodenal ulcer(Active/Remission/Chronic)	41	117	198	243	185
Duodenal ulcer with obstruction	4	5	13	11	9
Gastric polyp	2	7	21	34	33
Duodenal polyp	3	4	2	12	6
Erosive antral gastritis	1	16	16	22	14
Non-erosive antral gastritis	1	27	30	36	17
Ascariasis	0	2	3	0	2
Suspected Malabsorption	0	2	1	0	0
Gastro-jejunostomy operation	0	0	2	3	4
Gastric Lymphoma(suspected)	0	1	3	5	4

Portal hypertensive gastropathy	2	0	11	21	12
Erosive duodenitis/duodenitis	14	45	36	32	14
Duodenal diverticula	0	0	2	2	3
Oesophago-gastrostomy	0	0	3	14	7
Antral ectasia	0	0	0	0	2
Antral Polyp	1	5	8	4	3
Normal	91	210	258	199	54