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Pattern of upper gastrointestinal diseases: an audit of 1000 cases based on endoscopic findings from a tertiary care hospital in Mysore

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ABSTRACT

Background: Fibreoptic endoscopy is a highly efficient diagnostic tool, which is now increasingly being used in the diagnosis of upper gastrointestinal diseases. This study has been carried out to evaluate the distribution of various upper gastrointestinal diseases based on endoscopic findings in a tertiary care hospital in Mysore.

Methods: A cross-sectional study was conducted based on data from endoscopic register of 1000 subjects who underwent endoscopy for various upper gastrointestinal symptoms from 1st January 2017 to 31st December 2017(one year).

Results: Mean age of the study population was 50.23 years (SD-15.46). Minimum age was 12 years and maximum was 88 years. About 44.7% of the study subjects belonged to 40-60 age group.61.6% of the study subjects were males. Most common indication was pain abdomen (32.1%) followed by dysphagia (22.2%). Of the 1000 study subjects 18.6% had normal findings. Most common finding was Gastritis / Duodenitis /Gastric erosions (28%). Malignant lesions were noted among 11.1%, of which esophagus and stomach are 5.4% and 4.9% respectively.

Conclusions: Endoscopic diagnosis is useful for early detection of UGI diseases and helpful for their management.

Keywords: Age, Dysphagia, Mysore, Upper gastrointestinal (UGI) diseases

INTRODUCTION

India is a developing country with one of the most diverse populations and diets in the world. Gastrointestinal (GI) tract related abnormalities in India are rising (increasingly being reported) with increasing migration of rural population to the cities and a change in life style.

Upper gastrointestinal tract abnormalities are quite often linked to infection and inflammation. The common indications for endoscopy are dysphagia, dyspepsia suggesting gastroesophageal reflux disease (GERD), persistent nausea and vomiting, upper GI bleeding/anemia. 1-3 Dysphagia is a common symptom of esophageal disorders which may be due multitude of underlying causes. Structural lesions of the esophagus

like web, ring and strictures produce an intermittent obstruction giving rise to intermittent dysphagia. 4,5

Most common mucosal injuries are acid reflux disease (GERD), infectious esophagitis, radiation esophagitis, esophagitis due to caustic ingestion or due to excess/inaccurate use of medication.⁶⁻⁸

In general, candidal infections are common, especially in patients with immunocompromised status. Gastroesophageal reflux disease (GERD) was previously thought to be a rare disease in the East, but several recent reviews have also brought up the possibility of an increase in the prevalence of GERD. Esophagitis prevalence is reported to be 14.5% to 16.1% in patients for whom upper gastrointestinal endoscopy is performed due to dyspepsia and reflux. 9-11 Acid peptic diseases

(ulcers, erosions) are common these days, both in developed and developing country.¹²

In India, due to rapid urbanization or migration of rural population to cities leading to an inevitable change in lifestyle and food habits in addition, the excess use of medications for common ailments, might be the reason for excessive gastric acid/pepsin secretion, thus producing acid-alkali disturbances. 13,14 This weakens the mucosal defense in the upper GI tract, leading to damage to the lining of the esophagus, stomach and duodenum, giving rise to ulceration, GERD, erosive esophagitis and erosive gastritis. 15 The food ingested and passed through the GI tract contains nutrients as well as toxins. Further, the surface of the GI tract has a complex system of nerves and other cells of the immune system. They form part of a complex sensing system called the mucosa-associated lymphatic tissue (MALT). Any kind of physical or physiological damage to the GI tract can affect the ability to sense and discard toxins exposed to the GI tract, thus leading to cell and DNA damage. This must be a feature of all chronic conditions including those which lead to malignancy in the GI tract.

The present study has been carried out to evaluate the distribution of various upper gastrointestinal diseases based on endoscopic findings in a tertiary care hospital in Mysore.

The objectives of the present study are to study the pattern of upper gastrointestinal (UGI) diseases based on endoscopy findings among subjects reported to general surgery OPD of Mysore Medical College and Research Institute, Mysore. Also, to study the age distribution and the various indications among the study subjects.

METHODS

A cross sectional study was conducted among 1000 subjects who underwent upper gastrointestinal endoscopy in the department of General Surgery from 1st January 2017 to 31st December 2017. Data was collected retrospectively from the endoscopy register available in the department. Study was approved by the institutional ethics committee. Data including age, sex, indication for UGI scopy and endoscopic diagnosis were documented. Biopsy reports was used to confirm the diagnosis as malignancy. Subjects were grouped based on age and comparison of diagnosis was done for age and gender.

Statistical analysis was performed using Epi info version 7 [Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia (US)]. Frequency and percentage of each variables were calculated and the same was depicted as tables, graphs and pie chart.

RESULTS

Study was conducted based on endoscopic data available in the department of general surgery of 1000 subjects

over a period of one year. Mean age of the study population was 50.23 years (SD-15.46).

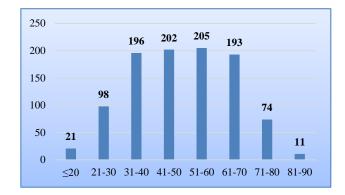


Figure 1: Age distribution of the study population.

Minimum age was 12 years and maximum was 88 years. Age distribution of the study population is depicted in Figure 1. About 44.7% of the study subjects belonged to 40-60 age group.61.6% of the study subjects were males.

Table 1: Distribution of various indications for UGI scopy among study subjects.

Indications	N	Percent
Pain abdomen	321	32.1
Dyspepsia	78	7.8
Dysphagia	222	22.2
UGI bleed	97	9.7
Lower GI bleed	13	1.3
Gastric outlet obstruction	15	1.5
Vomiting	81	8.1
Pancreatitis	17	1.7
Caustic ingestion	14	1.4
CLD	43	4.3
Anemia	98	9.8
Mass per abdomen	2	0.2

Table 2: Pattern of various UGI abnormalities among the study subjects.

Diagnosis	N	Percent
Gastritis / Duodenitis / Gastric erosions	280	28.0
Gastric Ulcer	22	2.2
GERD	171	17.1
Esophagitis/ Esophageal candidiasis	40	4.0
Carcinoma Stomach	49	4.9
Carcinoma esophagus	54	5.4
Esophageal stricture	22	2.2
Hiatus hernia	30	3.0
Esophageal varices	102	10.2
Fundal varices	8	0.8
Normal study	186	18.6
Carcinoma post cricoid	8	0.8
Duodenal Ulcer	28	2.8
Trichobezoar	1	0.1

Various indications for the UGI scopy evaluation is shown in Table 1. Most common indication was pain abdomen (32.1%) followed by dysphagia (22.2%).

Pattern of various UGI abnormalities among the study subjects is shown in Table 2. Of the 1000 study subjects 18.6% had normal findings. Most common finding was

Gastritis / Duodenitis /Gastric erosions (28%).Malignant lesions were noted among 11.1%, of which esophagus and stomach are 5.4% and 4.9% respectively.

Distribution of UGI diseases based on age group is shown in Table 3.

Table 3: Distribution of UGI diseases based on age group.

	≤20	21-30	31-40	41-50	51-60	61-70	71-80	81-90
Gastritis / Duodenitis / Gastric erosions	5	28	65	54	60	47	18	3
Gastric ulcer	1	1	4	2	6	7	1	0
GERD	1	23	42	38	20	30	15	2
Esophagitis/ Esophageal candidiasis	0	5	10	8	7	6	4	0
Carcinoma stomach	0	1	3	11	12	14	8	0
Carcinoma esophagus	0	1	1	6	16	21	6	3
Esophageal stricture	0	8	1	1	6	6	0	0
Hiatus hernia	1	1	6	4	5	9	4	0
Esophageal varices	2	5	17	29	23	17	8	1
Fundal varices	0	0	0	4	1	3	0	0
Normal study	10	22	43	35	43	24	7	1
Carcinoma post cricoid	0	0	0	3	2	3	0	0
Duodenal ulcer	0	3	4	7	4	6	3	1
Trichobezoar	1	0	0	0	0	0	0	0

DISCUSSION

Digestive tract disorders significantly affect millions of people worldwide and have a significant economic impact in terms of health-care and work absenteeism. In the present study, our data reveal a greater percentage of males affected with UGI disorders than females in our population indicated by the male to female ratio of the endoscopic evaluations done in the one year (1.6:1).

This ratio is almost similar to the male:female ratios mentioned in reports from other parts of the country or elsewhere in the world. 16-18

Author's primary interest was to look at different malignancies prevalent in upper GI and their burden in our population, but we found that other than malignancies there were a number of common pathologies in our population, leading to debilitating conditions and poor quality of life in individuals suffering from them. The hospital where the study was conducted is a tertiary-care center.

The endoscopic evaluations were mostly outpatient cases; some cases were referred from within the hospital from surgery and medicine sections.

In one year, a total of 1000 endoscopies were performed in the department of General surgery, Mysore Medical College. The Endoscopic procedures are performed as per the routine endoscopic protocol.

Endoscopic evaluation has an advantage over different other diagnostic methods because of its direct visualization of different sites of the UGI tract and sampling from the site of interest. The feasibility in the endoscopic procedure for obtaining the histological materials makes it a superior diagnostic tool for GI related abnormalities. Endoscopy also has a therapeutic application for polypectomy, gastrostomy, variceal ligation, stenting, stricture dilatation and other ERCP guided therapies. ¹⁹ Almost all precancerous polyps can be removed painlessly using an endoscope.

Overall, approximately 30% of subjects found to be suffering from acid peptic disorders, 11% cases with vascular-related abnormalities, 5.2% endoscopic evaluations showed structural abnormalities, followed by malignancies which accounted for 11.1% (including cancer of post-cricoid, esophageal cancer, stomach cancer).

Very few cases presented with malignancy below the age of 30 years. Highest cancer prevalence was found to be in the age group of 61-70 yrs, followed by 51-60 years age group in our region; a study from Chattisgarh placed the peaking of prevalence in the fifth decade with mean age at 41 years. ¹⁸

Author observed 18.6% of the endoscopic evaluations showing a normal study. Of these, 43 cases were found to belong to the 31-40 years age group and 43 cases in the 51-60 years age group. We can assume that patients presenting with symptoms related to GI tract disorders that were referred for investigation mostly belonged to the 31-40 years age group, however they showed absence of a tissue pathology upon endoscopic observation.

In the present study we observed that the vascular disorders are seen in almost all age groups (11 to 80 years). In older age group, portal hepatic gastropathy (PHG) was frequently seen and could be attributed to hepatic abnormalities due to alcoholic liver diseases (liver cirrhosis induced by alcohol abuse or idiopathic). In the younger age group (<20yrs), early appearance of varices / PHTN is due to NCPF (Non-cirrhotic portal fibrosis) and EHPVO (Extra-hepatic portal vein obstruction) which could be attributed to nutritional deficiencies / infection. ^{20,21}

Highest incidence of infections was to be found in 31-40year age group. The patients who immunocompromized/susceptible to infection showed infections like candidiasis. The over-growth of Candida in the UGI tract reduces the acidity of intestine as the organism prefers to grow in alkaline conditions. One of Candida's byproducts is ammonia that forms when Candida albicans ferments sugar in the intestine. Ammonia increases the alkalinity of digestive tract and has even been found to promote the growth of other veasts. Candida also produces ethanol which can have an intoxicating effect on body. It interferes with the production of thyroid hormones, giving rise hypothyroidism, and can put a stress on the liver. ^{22,23}

There have been reports on the persistence of H.pylori in the stomach and increased incidence of gastric cancers while the presence of H.pylori in the esophagus has been reported to be protective against esophageal adenocarcinomas.²⁴⁻²⁸ When exposed to harsh, acidic environment, H.pylori secretes an enzyme called urease, which converts the chemical urea to ammonia. The production of ammonia around H. pylori neutralizes the acidity of the stomach, leading to gastric disorders while the same action of the organism could be proving beneficial to the esophageal tract protecting it from the injury due to acid reflux.^{29,30} In this case, eradication of H.pylori itself seems disputable, however a hope for better therapeutic and antibacterial drugs may solve the problem. In our present study due to lack of sufficient data about H. pylori infection status we are unable to comment on its prevalence in our population or cases.

UGI abnormalities mostly functional, infections and APDs can be prevented by consumption of fresh fruits and vegetables, avoiding fatty food, controlling obesity, cessation of alcohol, tobacco and avoiding unnecessary use of medications. Increasing fiber in the diet, avoiding or decreasing the use of NSAID, avoiding caffeine,

monitoring foods which trigger acidity, minimizing stress or learning different ways to cope with stress, and taking appropriate and timely medication as prescribed by physician would help manage APD and GERD. Adenomatous and hyperplastic polyps may occur in the presence of chronic gastritis and/or H pylori infection. Gastric cancer has been found in 1.3% of patients during follow-up.³¹ Patients with a family history of GI cancers / polyposis (multiple polyps) should have an endoscopy done beginning at age 40 or 10 years younger than the youngest family member affected with cancer.³²

CONCLUSION

A detailed observation of the changing trends in the prevalence of upper GI endoscopy abnormalities in our population will be useful in the setting appropriate guidelines for personal healthcare and patient management. Endoscopic diagnosis is a useful tool for the early detection of upper GI anomalies and helpful for physicians to take decisions on treatment and management of varied kinds of UGI diseases. We observed that the increased incidence of APD and GERD in our population might be due to the change in lifestyle (adoption of western consumption of tobacco) of our population. There is need for planning a large epidemiological survey to design good strategy for screening and early detection programs of these cancers.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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