Association of Neoplastic lesions of upper gastrointestinal tract to Age & Gender: A Retrospective Study

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Introduction :

Inflammatory and neoplastic lesions are the most common cause of upper GIT tract lesions. Although the inflammatory conditions could be easily treated, but the malignancy are the most lethal ones. Cancers of the gastrointestinal (GI) tract account for more than one-quarter (26%) of global cancer incidence and more than one-third (35%) of all cancer-related deaths in 2018, with an estimated 4.8 million new cases and 3.4 million deaths worldwide.(1) Because of the similarity in benign causes of dysphagia and dyspepsia, as well as the insidious nature of the onset of symptoms, the majority of these neoplasms are detected at an advanced stage. (2) Globally, esophageal cancer is 7th most common cause of cancer morbidity and the sixth leading cause of death, and stomach cancer is the fifth most frequently diagnosed cancer and the fourth leading cause of death. (1,3) The use of the upper gastrointestinal flexible fibre optic endoscope in 1968 was a major breakthrough in the diagnosis of gastrointestinal tract (GIT) lesions.1.. It explores the upper gastrointestinal tract visually with a flexible fibre optic or video endoscope, allowing for easy inspection of the GIT with no gaps. Endoscopic guided biopsy is a well-established diagnostic tool and the current gold standard investigation for patients suffering from upper GIT symptoms. It may prevent neoplastic tumours from developing into invasive cancer by detecting them in their early stages.(4) Histopathological examination of endoscopic biopsies

enables an exact diagnosis for further management. It can detect the early signs of neoplastic lesions and may prevent their progression to invasive cancer.(5) It is critical in the management and surveillance of upper GI tract conditions, as well as in patient follow-up.(6) Japan and the Republic of Korea, two high-risk countries, have **established** national screening programs using endoscopic and/or radiographic methods **(biennial** endoscopy) for adults 50 **years** and **older** in addition to the existing upper GI (barium meal **followed by radiography). Series of these Efforts** have **resulted in** an increasing number of cases **being** diagnosed at an **early and** curable stage and relatively high survival **rates** of **more than** 60% in both countries.(7, 8)

This study was hence done to determine the spectrum of histopathological lesions of upper gastrointestinal tract in a tertiary care teaching hospital at Bettiah and it's possible association with socio-demographic factors.

Methodology :

This was a retrospective study carried out over the course of a year, from July 2021 to June 2022, in the pathology department of the Govt. Medical College in Bettiah, Bihar. Throughout this time, 112 endoscopic biopsies from the upper and lower GI tract were assessed. Relevant clinical information was noted as necessary for supporting the diagnosis. Using a flexible fiber-optic endoscope and a video endoscope, biopsies were removed. They were treated, imbedded, and transferred to a container containing 10% neutral formalin. In all cases, routine haematoxylin and eosin staining was carried out on 5 micron thick slices. When necessary, specific stains like PAS and Giemsa were used.

We propose to examine the histological range of gastrointestinal lesions seen at the Govt. Medical College in Bettiah, Bihar, in this study. Along with the distribution of benign and malignant lesions with respect to age and place, the age and sex distribution of these lesions was also investigated.

Inclusion criteria

All endoscopic biopsies of upper gastrointestinal tract done during the study period.

Exclusion criteria

1) All lesions of the oral cavity and pharynx.
2) All duodenal biopsies beyond the second part of the duodenum.

Results :

A total number of 112 patients were involved in the study. Maximum (62.5%) were adults i.e. belonging the age group of 15-59 years and 25% were geriatric. Males were 59.82% while females were 40.17%. Around 78.57% patients were from Bihar while 21.42% were from outside Bihar. When socioeconomic status was assessed (using Kuppuswamy scale 2021 and classes merged into high, medium and low for ease of analysis) maximum (69.64%) were found

to be coming from high class, 21.42% belonged to the middle Socio economic class and 8.92% were from lower class.

Table -1 : Age and gender distribution of the study subjects (N=112)

	Number	Percentage	95% CI
Age			
Paediatric (<14 years)	14	12.5%	0.0759-0.1989
Adult (15-59 years)	70	62.5%	0.5326-0.7091
Geriatric (60 and above)	28	25%	0.1790-0.3376
Gender			
Male	67	59.82%	0.5056-0.6843
Female	45	40.17%	0.3157-0.4944
Place			
Bihar	88	78.57%	0.7009-0.8516
Outside Bihar	24	21.42%	0.1484-0.2991
Socio-economic status			
High	78	69.64%	0.6059-0.7739
Medium	24	21.42%	0.1484-0.2991
Low	10	8.92%	0.0492-0.1566

Table 2 shows the frequency and distribution of different types of lesions found in UGI endoscopy. Around 66.07 % of the lesions were non neoplastic while 33.93% were neoplastic. Out of the non neoplastic lesions maximum (78.3%) were gastritis, while 16.21 % were polyp or others. As little as 5.4 % were found to be gastric ulcers.

Out of the neoplastic lesions, 57.89% were moderately differentiated adenocarcinoma , and around 29% were moderately differentiated squamous cell carcinoma.

Table-2 : Different types of lesions found in UGI endoscopy (N=112)

Nature of Lesions	Number	Percentage	95% CI
Non neoplastic	**74**	**66.07%**	**0.5690-0.7418**
Mild Chronic Gastritis	30	40.54%	0.3009-0.5192
Chronic Active Gastrits	20	27.02%	0.1823-0.3809
Polyp and others	12	16.21%	0.0953-0.2624
Chronic Superficial Gastrits	8	10.81%	0.0558-0.1991
Gastric Ulcer	4	5.4%	0.0212-0.1309
Neoplastic	**38**	**33.93 %**	**0.2582-0.4310**
Moderately differentiated adenocarcinoma	22	57.89%	0.4219-0.7215
Well differentiated adenocarcinoma	3	7.89%	0.0272-0.2080

Poorly differentiated adenocarcinoma	1	2.63%	0.0047-0.1349
Early gastric carcinoma	1	2.63%	0.0047-0.1349
Moderately differentiated squamous cell carinoma	11	28.94%	0.1700-0.4476

Table-3 : Association of age groups and gender with site of lesions (N=112)

	Site		p-value
Paediatric group	**Oesophagus**	**Stomach**	
Benign	2	7	*1*
Malignant	1	4	
Adult Group			
Benign	4	42	*0.005*
Malignant	9	15	
Geriatric group			
Benign	0	14	*0.04*
Malignant	5	9	
Gender			
Male	18	54	*0.04*
Female	3	37	
Place			
Bihar	19	60	**0.03**
Outside Bihar	2	31	
Socio-economic status			
High	10	55	**0.85**
Medium	6	20	
Low	3	16	
Total	21		

Table 3 tries to find out the various socio economic factors and there association with the site of the lesions. For the ease of analysis , we broadly classified the sites in two categories which were oesophagus and stomach. It was found that adult age group , geriatric age group, gender and place of residence of the patients were significantly associated with the site of the lesions. Stomach lesions were more in adult, geriatric, Bihari and male population.

Discussion :

In our study there were 59.82% males while females were 40.17%.Similarly in a study by Mishra R et al 62 (62%) patients were males and 38 (38%) were females.(9)

The mean age with SD was 53.20±16.09 years in a study by Nazrin et al.(10) Contrary to this our study population mainly comprised of age group 15-59 years and mean was 45.3±15.07 years.

In Mishra R et al's study, out of total biopsies, non-neoplastic cases were 65% and 35% cases were neoplastic in nature.and 83 % in study by Sharma et al,(9) (11) similarly it was 66% and 34 % in our study.

In our study the oesophegeal lesions were 18.75% and stomach lesions were 81.25%. A little more is reported in a study by Mishra R et al where oesophagus lesions were 33% and stomach 38%, (9) and was 13.0% esophageal and 65.0% were from stomach in a study by Sharma et al.(11) Also in a study by Krishnappa Rashmi et al Non neoplastic lesions were more as compared to neoplastic ones.(12)

In Nazrin et al's study, among all neoplastic lesions, 33.33% were adenocarcinoma and 16.67% were squamous cell carcinoma.(10) Also in a study by Ahamed et al,Squamous cell carcinoma was the commonest malignancy in the esophagus while adenocarcinoma was the commonest malignancy of stomach.(13) While it was 71 % adenocarcinoma and 29% squamous cell carcinoma in our study.

The most common age group was 51-70 years for both squamous cell & adenocarcinoma in a study by Sharma et al. (11) Contrary to this , we found that most of the cancerous lesions were common in the age group of 15-59 years.

The non-neoplastic lesions were commonly seen in males accounting for 83.0%.(11) In our study too the male predominance was seen (64.2%).

Conclusion: In our study, 66% non-neoplastic and 94% neoplastic lesions were found. Most common neoplasm of the stomach was adenocarcinoma while in oesophagus it was squamous cell carcinoma. The stomach lesions were associated with adult and geriatric male patients. Stomach lesions were also more in Bihari's when compared to those of outside Bihar.

Limitation : Since the data collected were only from the patients of the hospital, the representativeness was not there reflecting the true prevalence of neoplastic lesions in the community rather it gives the estimate of different type of neoplastic and non neoplastic lesions among the hospital cases.

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