STUDY OF GASTROINTESTINAL CANCERS IN A TERTIARY CARE HOSPITAL

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ABSTRACT

BACKGROUND

Cancer is one of the leading cause of death both in developed and developing countries. In India, it accounts for 0.3 million deaths per year. Cancers of lung, GIT and oral cancers dominated among men while breast, cervix, ovary and oral cavity were commonest cancer seen in women. Among the gastrointestinal cancers, cancers of the oesophagus, stomach, colon, rectum and liver cancers were commonest.

The aim of the study is to evaluate the incidence of the various GIT cancers in a tertiary hospital of Coastal Andhra when compared to other studies.

MATERIALS AND METHODS

In this retrospective study, a total of 509 health records of patients affected by cancers were studied and relevant details noted.

RESULTS

A total of 509 cancer cases were reported in this period of 18 months (January 2016 - June 2017) of which 85 cases (16.3%) were of Gastrointestinal (GIT) cancers. The age group between 40 and 60 recorded the maximum incidence of 47 cancers (55.1%). The incidence of gastrointestinal cancers were significantly higher in the men (56 cases) (65.8%) than the women (29 cases) (34.11%). The commonest site of GIT cancers was the colorectal region (30 cases) (35.7%). The most common type of cancer seen was adenocarcinoma seen in 73 cases (85.8%).

CONCLUSION

Public education and awareness for the warning symptoms should be increased to prevent reduction of the life span and health caused by the gastrointestinal cancers with intense awareness drive using various means including social media undertaken to educate the public regarding the warning symptoms and screening of such group for GIT cancers.

KEYWORDS

Gastrointestinal Cancers, Incidence, Colorectal.

HOW TO CITE THIS ARTICLE: Sarkar RN, Kartheek BVS, Satish SK, et al. Study of gastrointestinal cancers in a tertiary care hospital. J. Evid. Based Med. Healthc. 2017; 4(92), 5537-5542. DOI: 10.18410/jebmh/2017/1108

BACKGROUND

Cancer is one of the leading cause of death both in developed and developing countries. In India, it accounts for 0.3 million deaths per year. Cancers of lung, GIT and oral cancers dominated among men, while breast, cervix, ovary and oral cavity were commonest cancer seen in women.[1]

Among the gastrointestinal cancers, cancers of the oesophagus, stomach, colon, rectum and liver cancers were commonest among the male. The five cancers together constitute more than 80% of the total gastrointestinal cancers and are serious diseases in both sexes. The purpose of the study is to evaluate the incidence of various GIT cancers in a tertiary hospital of Coastal Andhra.

Aims and Objectives

To study the incidence of various gastrointestinal cancers in reference to age, sex and site and compare with other studies.

MATERIALS AND METHODS

In this retrospective study, a total of 509 health records of cancer patients were studied and patient profile of the gastrointestinal cancer patients analysed with regards to age, sex, site and type of malignancy.

OBSERVATIONS AND RESULTS

A total of 509 cancer cases were received in this period of 18 months (January 2016 - June 2017), of which, 85 cases were of GIT cancers. GIT cancers constituted a (16.3%) of total cancers. The age group between 40 and 60 recorded the maximum incidence of cancers (55.1%). Highest incidence of GIT cancers was seen in the age group between

Financial or Other, Competing Interest: None.
Submission 13-11-2017, Peer Review 18-11-2017,
Acceptance 25-11-2017, Published 28-11-2017.
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DOI: 10.18410/jebmh/2017/1108

40 to 60 years followed by 20-40 years and 40-60 years age group (Table 1/Figure 1). The incidence of gastrointestinal cancers were significantly higher in the men (67.1%) than the women (32.9%) (Table 1/Figure 2). The commonest site of GIT cancers was the colorectal (35.7%) followed by stomach (33%), oesophageal (12.9%) and periampullary cancers (Table 1/Figure 3). Incidence of cancers in small intestine was the least with 1.1%. The most common type of cancer was adenocarcinoma in 73 cases (85.8%) in all sites except in oesophageal and the anal canal where SCC predominated 10 cases (11.7%) (Table 1/Figure 4).

Site	M	F	Total	AC	SCC	Others	Total	<20 Yrs.	20-40 Yrs.	40-60 Yrs.	60-80 Yrs.	Above 80 Yrs.
Colorectal (incl. anal)	20	10	30	29	1		30		11	15	4	
Liver and biliary tract	3	1	4	3	0	1	4		1	3		
Oesophagus	7	4	11	2	9		11		3	4	3	1
Periampullary (incl. pancreas)	8	3	11	10	0	1	11		2	8	1	
Small intestine	1	0	1	1	0	0	1		1		2	
Stomach	19	9	28	28	0	0	28		4	17	6	
Total	**58**	**27**	**85**	**73**	**10**	**2**	**85**	**0**	**22**	**47**	**16**	**1**

Table 1. Distribution of Various GIT Cancers in Relation with Age, Sex, Site and Histological Type

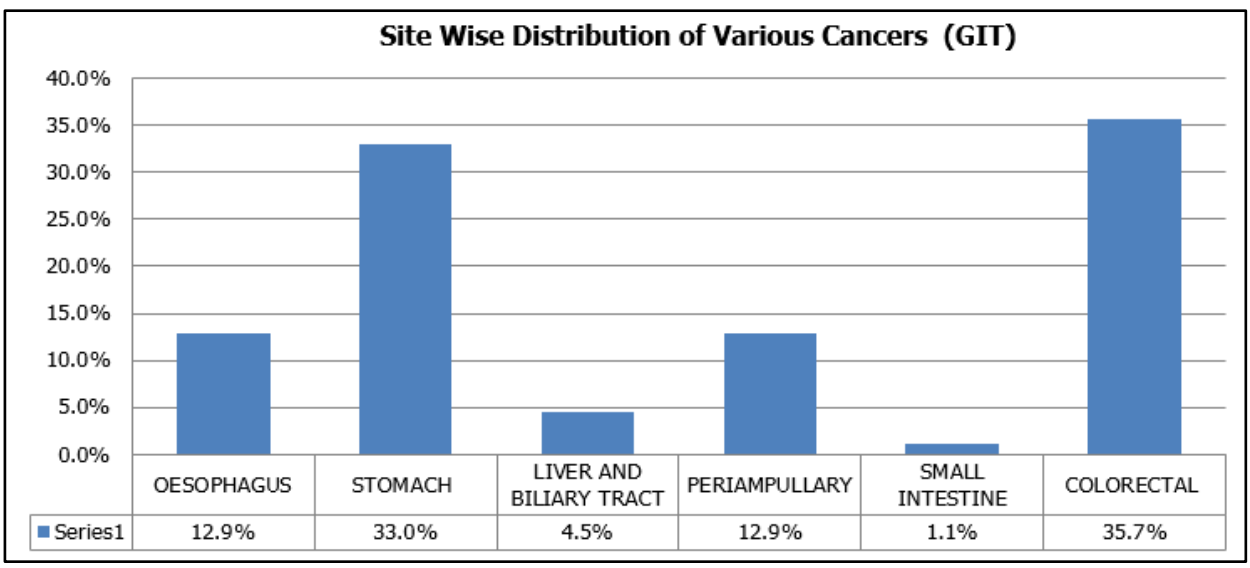

Figure 1. Site Wise Distribution of Various GIT Cancers

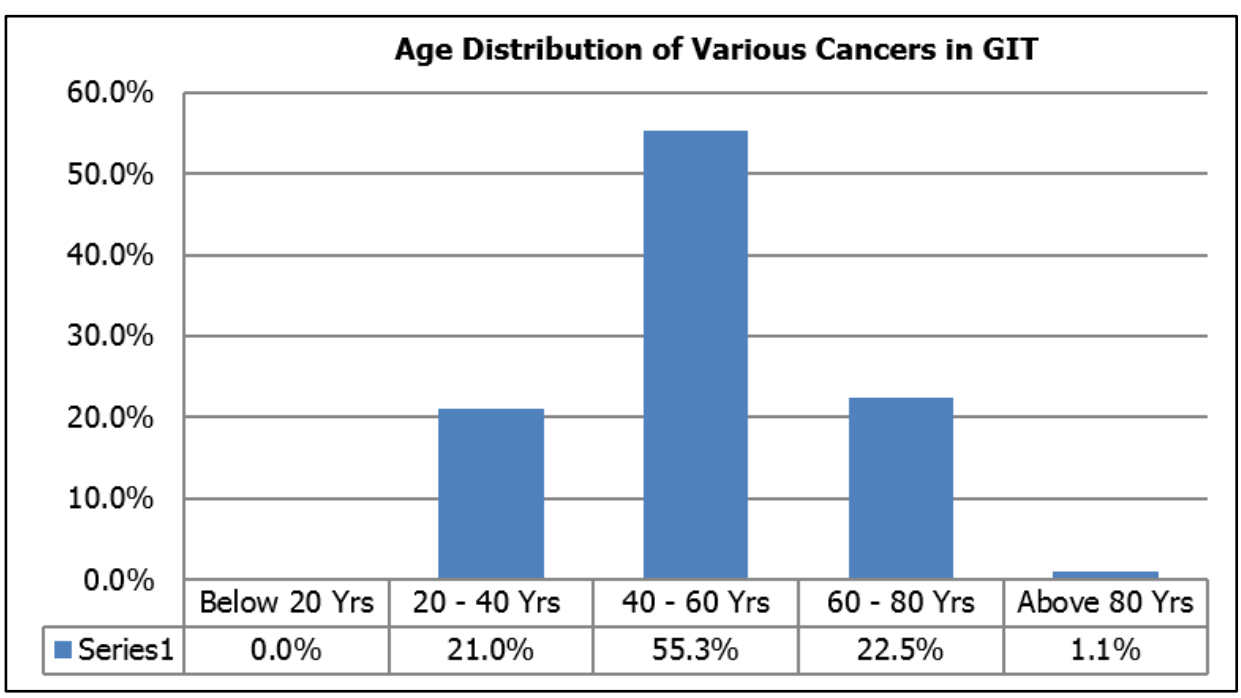

Figure 2. Age Distribution of Various Cancers in GIT

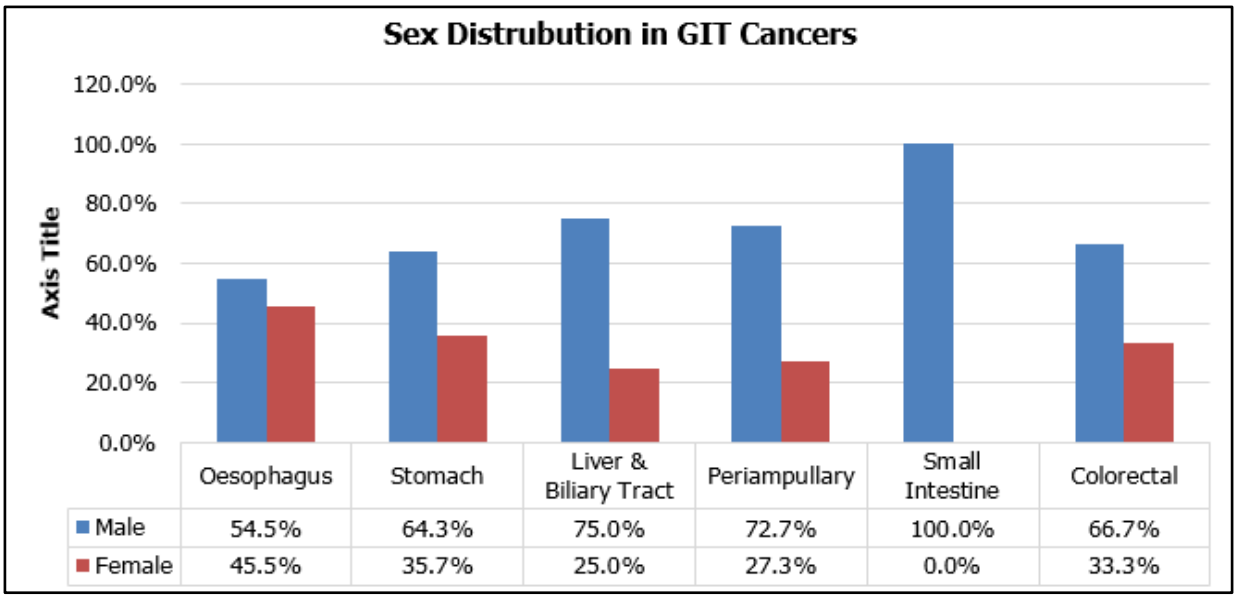

Figure 3. Sex Distribution in GIT Cancers

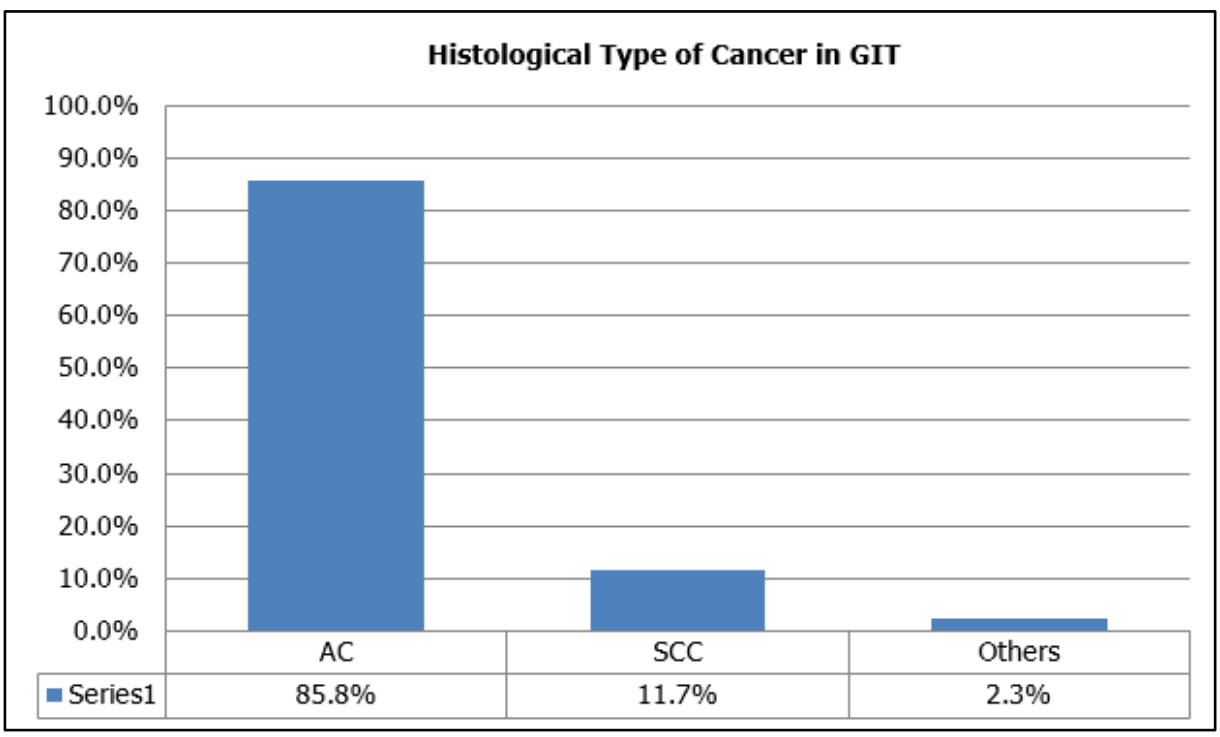

Figure 4. Histological Type of Cancers in GIT

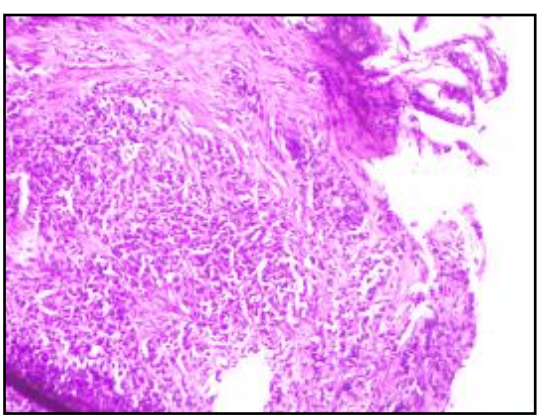

Figure 5. Photomicrograph of Poorly-Differentiated Adenocarcinoma in Rectum (H and E, 100x)

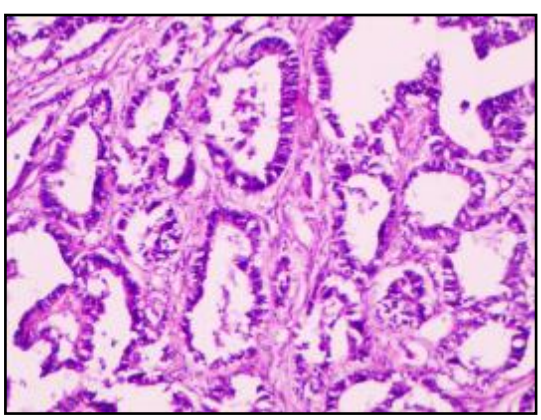

Figure 6. Photomicrograph of Well-Differentiated Adenocarcinoma in Colon (H and E, 100x)

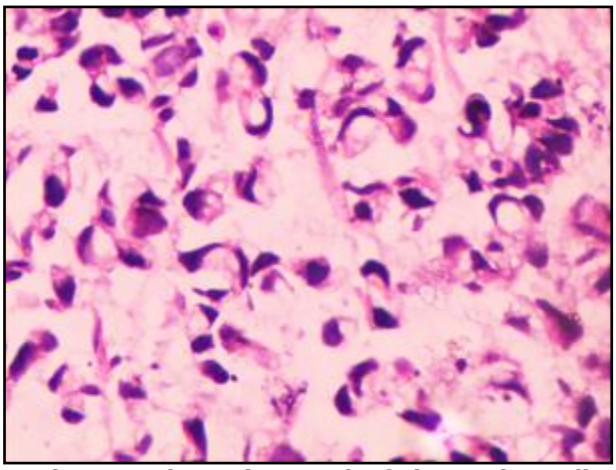

Figure 7. Photomicrograph of Signet Ring Cell Carcinoma in Stomach (H and E, 400x)

Figure 8. Gross Photograph of Periampullary Carcinoma Showing Grey White Growth Near the Ampullary Region

DISCUSSION

Cancer prevalence is increasing in our country. The pattern of incidence and mortality is diverse in the world, but trends in the incidence and types of GIT cancers vary across the world depending on various aetiological factors like food habits, nutrition, environment, sex, age and genetic and hereditary factors. One of the probable factor for the increase in incidence in GIT cancers recorded could be the increased availability and increased use of diagnostic modalities that help to detect cancers at an earlier stage[2] along with better documentation. In this paper, an attempt has been made to study to compare the in incidences of the various gastrointestinal cancers with age, sex, site and type of malignancy and compare with other studies.

In our study, gastrointestinal malignancies were more prevalent in the higher age group. The highest incidence was noted in age group between 40 to 60 years (47 cases, 55.3%), followed by with near equal incidence in 60-80 years (19 cases, 22.5%) and 20 to 40 years (18 cases, 21%) (Table 1/Figure 1). Cancer incidence of all GIT cancers was significantly higher in men than the women, which too was reflected in our study with men having GIT cancers up to (56 cases, 65.8%) and women (29 cases, 34.11%) (Table 1/Figure 2). The most common sites of GIT cancer in this study were in colorectal (35.7%), stomach (33.0%), followed by oesophageal (12.9%) and periampullary carcinomas. Least involved sites was the small intestine (1.1%). Frequency of different kinds of cancer of gastrointestinal system based on the site has been shown in (Table 1/Figure 3). Histopathologically, the most common type of cancer was adenocarcinoma in various sites of GIT except oesophagus and anal canal where squamous cell carcinoma was predominant (Table 1, Figure 4). In general, the most common type of GI cancer was adenocarcinoma (73 cases, 85.8%).

Cancer of the colon is the third most frequent cancer in the world in both the sexes after cancer of the lung and stomach in males and after those of breast and cervix in females. Based on the world statistics, colorectal cancer is the second most common cause of deaths caused by cancer in the United States.[3,4,5,6,7] Incidence of colorectal cancer is significantly higher in age above 50 years.[8,] In the present study, 50% of the cancer of colorectal cancers was seen in age group between 40-60 years. Males were more affected (66%) with rectosigmoid being the most common site affected (60%). The commonest type was adenocarcinoma (Figure 5, 6), which was in conformity with the other studies.[9]

Overall, gastric cancer incidence and mortality have fallen dramatically over the past 70 years, yet despite its recent decline, gastric cancer is the fourth most common cancer and the second leading cause of cancer-related death worldwide.[9] One of the major causative factor is chronic H. pylori infection.[10,11] The association between chronic H. pylori infection and the development of gastric cancer is well established.[12,13,14,15] H. pylori infection triggers the progressive sequence of gastric lesions from chronic gastritis, gastric atrophy, intestinal metaplasia, dysplasia, and finally, gastric adenocarcinoma[16] as shown in Correa's model of gastric carcinogenesis. About 90% of stomach, tumours are adenocarcinomas, which are subdivided into two main histologic types- (1) Well-differentiated or intestinal type is related to corpus-dominant gastritis with gastric atrophy and intestinal metaplasia; (2) Undifferentiated or diffuse type, which originates in pangastritis without atrophy.

A decline in the incidence of the intestinal type tumours in the corpus of the stomach accounts for most of the recent decrease in gastric cancer rates worldwide.[17] The incidence of diffuse type gastric carcinoma, particularly the signet ring type (Figure 7) has been increasing.[18] Over the recent years, in our study, stomach cancers were the second most common among the GIT malignancies (33%) with significant male preponderance (67.9%). The highest incidence was seen in 40-60 years and affected mainly the gastroesophageal junction. Histologically, adenocarcinomas of intestinal type was significantly higher than the diffuse type in our study. This resonated with other studies, though it did not show any preponderance of diffuse type.

Oesophageal cancer is common in Asiatic subcontinent. Based on this study, the third most common cancer of the GIT system observed was oesophageal cancers - 12.9%.

This cancer showed male preponderance with maximum incidence between 50-60 years reflecting earlier studies, which showed male preponderance and incidence peaks in the sixth decade in most parts of the world.[19] The most common site affected was the lower end of oesophagus. SCC is the most common type of oesophageal cancer in the Indian subcontinent and the most common location is the distal third of the oesophagus as was also seen in our study in concurrence with Cherian et al.[20] Though the rate of the prevalence of adenocarcinoma in oesophagus has conversely been increased, so that today more than 60% of the oesophageal cancers in the United States are from the kind of adenocarcinoma.[21] Our study concluded that oesophageal squamous cell carcinoma remained the most common oesophageal malignancy in our study 9 cases (81.8%), which was in concordance with other studies of Tamil Nadu probably the dietary and personal habits like spicy foods intake of hot beverages and smoking plays a significant role.

Age is the strongest risk factor for pancreatic cancer. The risk is almost 20 times higher for individuals older than 50 years as compared to younger persons. In all groups, men have higher incidence rates than women.[22] Identifiable risk factors for pancreatic cancer involve type II diabetes, heavy alcohol drinking, cigarette smoking, excess body weight, chronic pancreatitis, a family history of pancreatic cancer and few known germline mutations.[23] Chronic inflammation in the pancreas due to several reasons like chronic pancreatitis, alcohol, smoking and hyperlipidaemia has a significant role in development of pancreatic cancer. The two main tumour types of pancreatic cancer are adenocarcinoma (that accounts for about 85% of cases), and pancreatic endocrine tumours (which make up for less than 5% of all cases[24,25,26] making it the 11th most common cancer). In our study of GIT cancers, periampullary carcinomas (Figure 8) constituted 12.9% of all the GIT cancers with preponderance in males. All cases reported were adenocarcinoma with 4 occurring in head of pancreas and rest in ampulla.

Liver and biliary tract cancers was reported as the fourth common cancer of the GI cancer with Hepatic Cell Carcinoma (HCC) being one of the most common malignant cancers worldwide and the men affected by it four times of the women.[27,28] Cirrhosis, one of the most common reason of HCC follows the chronic infection of hepatitis B or C.[27,28,29]

In the present study, incidence of liver cancer was 1.1% with a single case of HCC. The incidence of gallbladder cancer was 2.3% (3 cases) and that from the cholangioles was 1.1% (1 case) of the total GIT cancers. In the present study, the cancers of the liver and biliary canals was 5th most common site for GIT cancer constituting 4.5% of all the GIT cancers.

The least incidence of GIT cancers were recorded in the small intestine (1.1%) with a single case of adenocarcinoma.

This study showed an increasing trend of GIT cancers in younger age group with 18 cases (21%), which was almost equal to the higher age group of GIT cancers in the age group of 20-40 years with 19 cases (22.5%). The youngest age recorded was that of a young female of 27 years with adenocarcinoma of the stomach.

CONCLUSION

GIT cancers constituted 16.3% of the total cancers of the body with increasing incidence of GIT cancer in younger groups in our study. The youngest age to be affected by GIT cancer was a young female of 27 years affected by stomach cancer. Probably, changes in lifestyle and food habits may be precipitating factor. Intense awareness drive by educating the public for the warning signs of the gastrointestinal system. Detailed epidemiological analyses of various cancer trends and further analytical epidemiological researches will help guide the changing trend in incidence with future cancer control strategies. Better non-invasive markers with cost effectiveness could be immensely helpful in screening in susceptible age group in diagnosing cancers early and thus reducing the mortality.

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