

Original Article

ANALYSIS OF GASTROINTESTINAL MALIGNANCY: A FIVE YEARS STUDY

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ABSTRACT

With addition of western life style GI malignancy is increasing in developing country. Recent studies have indicated increasing incidence. Our study was five year analysis of Gastrointestinal Malignancies diagnosed in the Department of Pathology, Government Medical Collage Surat. This study includes 244 cases of gastrointestinal tract malignancies. Incidence of gastrointestinal malignancy was gradually increased from 2006 to 2010. Most common age group affected was 41-50 years (64 cases, 26.22%) followed by age group of 51-60 year (58 cases, 23.77%). Most common malignancy came across was esophageal carcinoma (38.93%) followed by colorectal carcinoma(32.79%) and carcinoma of stomach(16.80%). Microscopically, adenocarcinoma was the commonest malignancy (45.90%), followed by Squamous cell carcinoma (33.60%).

Keywords: Gastrointestinal malignancy, Adenocarcinoma, Squamous cell carcinoma

INTRODUCTION

Primary GI malignancy is a global oncological problem. GI malignancy differs in different geographical area¹. Carcinoma esophagus is most frequent in Iran, carcinoma stomach in eastern Asian country and colorectal carcinoma is more in developed world.¹ This geographic difference depends on the food, environmental and genetic predisposition. Those having low fiber food have higher incidence of colorectal carcinoma. People taking hot beverages have higher incidence of esophagus carcinoma. Young people have less GI neoplasm due to dose and time of exposure of carcinogenic agent is less.²

MATERIAL AND METHOD

All GI biopsy and whole specimen received in our institute over a period of 5 years from 2006 to 2010 were studied for age, sex, site of lesion and histopathological type of lesion and wherever necessary special stain and immunohistochemistry was done. Total numbers of biopsy received during these 5 years were compared with the GI malignancy. Total number of 244 cases of GI malignancy was

included in our study. The specimen received fixed in 10 % formalin, gross examination were performed and recorded. Adequate representative tissue from lesion were taken and processed under standardized paraffin wax processing and H & E stain performed. All the cases included were full blown carcinoma. Aim of our study to assess the rate of GI malignancy in relation to age, sex, and site and histopathological parameter of GI malignancy.

RESULT

Our study included various gastrointestinal tract malignancy received in our department. Total gastrointestinal malignancy cases were 244 during year 2006 to 2010. Cases were ranging from age 13 to 80 year. In our study, 9 cases were present below 20 year of age. Most cases are observed in age group of 41-50 years (26.22%). The rate of malignancies increased after the age of 30 year.

Out of 244 cases, 142 were male and 102 were female. The male: female ratio was 1.39:1. The rate of malignancy is also increased from 2006 to 2010 i.e. number of cases in 2006 were 27 and in 2010 number of cases were 85.

Table 1: Incidence of GI Malignancy according to age

Age (yrs)	Total (%)
<20	9 (3.68)
21-30	14 (5.73)
31-40	50 (20.49)
41-50	64 (26.22)
51-60	58 (23.77)
61-70	40 (16.39)
71-80	9 (3.68)
Total	244 (100)

Table 2: Incidence of malignancy in last 5 years

Year	Total Cases	GI Malignancy
2006	3014	27
2007	3156	24
2008	3645	54
2009	3796	54
2010	3886	85

The most common malignancy we came across was esophageal malignancy and second most common carcinoma was colorectal carcinoma followed by carcinoma of stomach and small intestine.

Table 3: Involvement of GI tract

Site	Cases (%)
Esophagus	95 (38.93)
Stomach	41 (16.80)
Small Intestine	16 (6.56)
Colorectal	80 (32.79)
Anal canal	12 (4.92)

Most common type of malignancy was adenocarcinoma and the most common site was colon succeeding stomach, esophagus and ileum. Squamous cell carcinoma was most common in esophagus succeeding colorectal.

Table 4: Distribution of type of Malignancy according to site

Type of Malignancy	Site					Total (%)
	Esophagus	Stomach	Small Intestine	Colorectal	Anal Canal	
Squamous cell Carcinoma	76	0	0	4	2	82 (33.6)
Adenocarcinoma	14	23	8	61	6	112 (45.9)
Signet Ring Carcinoma	3	9	1	3	2	18 (7.4)
Poorly differentiated Carcinoma	0	4	0	6	1	11 (4.5)
Lymphoma	1	2	4	2	0	9 (3.7)
GIST	0	2	0	1	0	3 (1.2)
Metastatic Carcinoma	0	1	2	1	0	4 (1.6)
Adenosquamous Carcinoma	1	0	0	0	0	1 (0.4)
Malignant Melanoma	0	0	0	2	0	2 (0.4)
Verrucous Carcinoma	0	0	0	0	1	1 (0.4)
Carcinoid Tumor	0	0	1	0	0	1 (0.4)
Total	95	41	16	80	12	244

DISCUSSION

Our Study reveal the total number of GI malignancy received from 2006-2010 were 244. Most of our patient came from lower socio-economic status, as our Hospital is the major tertiary care center in South Gujarat.

In our study, majority malignancy was detected after the age of 30 year and maximum number were seen between 41-50 (26.20) years. In various study of developed countries, the major GI malignancy is seen after the age of 60 year.^{1,3}

Early presentation of malignancy is observed.⁴ Several factors are considered for this rise in malignancy, including increase in hospital attendance, change in dietary habits due to urbanization, upsurge of confectionary food

outlet rich in refined carbohydrate low fiber content and fresh fruit, lead to increase fecal transit time.^{2, 5, 6, 7} so, malignant forms of G.I.T. are not now as rare as previous studies suggested. Amna Kharshed et al study in Pakistan also indicate increase risk of gastro intestinal neoplasm in young population of Pakistan.¹ Rate of malignancy is increased, in 2006 number of GI malignancy was 27 and in 2010 -85 cases was found.

Our recent study indicates increasing incidence and decreasing age also observed by various study in other developing countries.^{2,6}

Out of 244 cases, commonest malignancy is adenocarcinoma 112 (45.90) cases followed by Squamous cell carcinoma 82 cases. Most of

Squamous cell carcinoma were presented from esophagus whereas adenocarcinoma from colon, that correlate well with other study.^{2,5,7}

Esophageal Cancer is the 15th common cancer in developed countries and 4th in developing world.⁸ It is serious disease due to rapid development and poor prognosis. The incidence of esophageal adenocarcinoma has shown a dramatic increase and has surpassed in incidence of Squamous cell carcinoma in western world. Among the Asian countries china and Singapore have reported an increasing number of esophageal adenocarcinoma.⁸ In our study; most common malignancy is esophageal cancer (38.93). Squamous cell carcinoma is most common in esophagus. Our findings correlate with study of Jijo V. Cherian et al in Tamil Nadu (South India). Higher rate of Squamous cell carcinoma in Indian sub-continent may be related to tobacco chewing, smoking, alcohol abuse and ingestion of hot and spicy food which are mostly changeable risk factor.⁹

In stomach, 41 cases of malignancy were seen, out of which 22 cases were adenocarcinoma, 9 cases of signet ring adenocarcinoma and 4 cases of lymphoma which correlate with epidemiological study of gastric cancer in Kashmir by Nassima et al.⁷ The cases of lymphoma were diagnosed below 20 years of age. The commonest pediatric gastro intestinal neoplasma reported in literature is lymphoma of small and large bowel.²

Though, small intestine represent maximum surface area in gastro intestinal tract small bowel neoplasm is rare compared to esophagus, colorectal carcinoma and account for only 1-2 % of all gastro intestinal neoplasm. This may be due to decrease in mechanical and chemical inflammation of mucosa because of liquidity and alkaline PH of small bowel content, rapid transit time thereby shorter contact time with luminal carcinogen and protective lymphoid tissue network in small bowel.¹⁰

The incidence of Colon and Rectal Cancer is higher in developed country than in developing country.¹¹ In developed countries, it is among the third most common cancer and colorectal carcinoma is commonest gastro intestinal neoplasm. This geographic difference represent the effect of different dietary habit.^{11,12} In study by Fatima et al in South Nigeria shown

colorectal carcinoma were the most common malignant gastro intestinal neoplasm accounting for 59 percent. Rate of colorectal carcinoma is comparable to other studies in India except that age is decreasing mean age is 45 year.⁴ So, screening study should be considered and possible hidden risk factor should be considered for that annual digital rectal examination should be started at the age of 40 year and fecal occult blood test should be started at early age.

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