TAJ December 2007; Volume 20 Number 2

ISSN 1019-8555
The Journal of
Teachers Association
RMC, Rajshahi

Original Article

Endoscopic Determination of Location of Gastric Cancer in Bangladesh

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Abstract

The incidence of gastric cancer has declined from half a century ago in the west. However ,contrary to general trend of steady decline in the incidence of gastric cancer, many western countries have noticed in recent decades an increase in gastric cancer in cardia with declining trend in distal involvement. In the developed world including the Japan , the highest prevalent country of gastric cancer , the distal stomach has remained predominant although a trend toward a proximal shift has been noted. So the study was performed to estimate the cancer by tumour location in Bangladesh. One hundred and sixty five patient were endoscopically assessed for location of cancer. The age range of the patients were 19 to 70 years and male outnumbered the female (2:1).The stomach is divided apparently into upper ,middle and lower third by dividing the lesser and greater curvature in two equidistant points and joining the points. Distal or antral gastric carcinoma was found to be the commonest location (56.9%) followed by body (29.6%),cardia (9.09%) and diffusely involved (4.2%).The study also depicted no significant change in location of tumour with age of the patients . All patients were subjected to serological test for H.pylori and 106(64.2%) gave positive results. In conclusion, Bangladeshi population has shown no change in age predilection with site specificities of gastric carcinoma and the antrum continues to be the commonest site of malignancy.

TAJ 2007; 20(2): 95-98

Introduction

Gastric carcinoma is the second most common malignancy worldwide behind lung cancer[(1)] Though its overall incidence is declining, it is still high in some parts of the world especially in Japan , china ,Korea , Taiwan , Eastern Europe and south Africa[(2).] The declining incidence in the West is related to environmental changes including food preservation without salting and pickling by wide spread use of refrigeration and also declining incidence of H. Pylori in the western world[(3)]. In Bangladesh there is no exact data regarding the incidence. From clinical practice it is quit evident that the incidence of disease is not negligible in our country. Reports from west have shown a paradigm shift in the site of occurrence with malignancy of gastric cardia increasing in frequency , which are contradictory to information from middle east and south Asia[(4-5)]. Therefore this study intends to evaluate the changes in distributions of gastric malignancy in our population.

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Material and Methods

This prospective hospital based study was conducted at Rajshahi Medical College Hospital during the period of January 2007 to June 2008 . One hundred and sixty five clinically suspected and histologically proven gastric carcinoma patients were enrolled in this study. All patients were assessed with upper GI endoscopy with biopsy and blood samples for obtaining antibody (ICT for H. Pylori) for H. Pylori. Anatomic site of each tumour is determined by latest guide line for gastric cancer classification by Japanese research society for gastric cancer , in which stomach is anatomically delineated into upper , middle and lower by dividing the lesser and greater curvature in two equidistant Points and joining the points. Tumour located predominantly in the gastro-esophageal junction and cardia were considered to be in the upper third of stomach, those located in pylorus were determined to be lower third and those located in mid- body were to be in the middle third of stomach. If the tumour is located in adjacent regions, the region containing the greater portion of the tumour were considered to be the tumours main location[6]. Other demographic data including clinical presentation and duration of illness were recorded in a pre-structured proforma. All patients gave oral informed consent to participate in the study. Data were analyzed with statistical package of social science (SPSS - version -11.5). Variables w ere recorded as descriptive frequencies, difference were reported as statistically significant If the P value is < 0.05. Data were expressed as mean, standard deviation and 95% confidence interval (CI). Statistical analysis was performed using Anova given in SPSS.

Results

All 165 patients with endoscopically diagnosed and biopsy proven adenocarcinoma of stomach were selected ,of which 111(67.2%) were male and 54(32.7%) female and male female ratio was2.05The mean age was 47.1±SD12.7. In this series the 52 out of 165 were in age group of 40-49years andleast affected groups were extreme ages (table-1). The stomach is divided into three regions to classify the location of gastric cancer. Ninety four (56.9%)of 165 carcinoma lesions were located in lower third , 49 (29.6%) were in middle third and 15(9.09%) involved the upper third. Other only 7 (4.2%) lesions afflicted the three regions diffusely (Fig- 1). Changes in the relative frequencies of gastric adenocarcinoma by tumour location according to age group are presented on table-2. There is no significant difference between age and location of tumour (ANOVA oneway F=0.173, P=0.84), P> .0.05 (table-2)

Table-1: Age distribution of patients with gastric carcinoma (N=165)

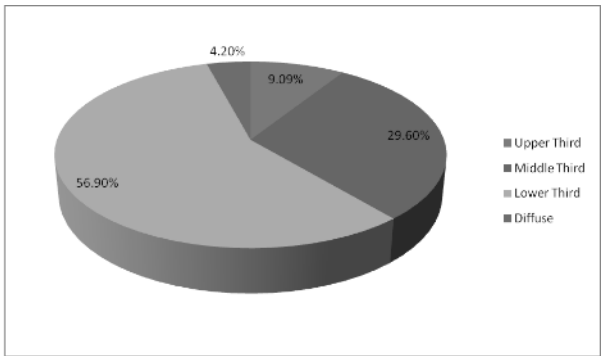
Age group (yr)	No of cases (%)	Male	Female	Male: Female
~ 29	11(6.6%)	06	05	1.2
30-39	46(27.8%)	26	20	1.3
40-49	52(31.5%)	38	14	2.7
50-59	38(23.0%)	28	10	2.8
60-69	14(8.4%)	10	04	2.5
70~	04(2.4%)	03	01	3.0
Total	165(100.0%)	111	54	2.05

Table-2: Relation of age with location of tumour (n=165)

Age (years)	Site					
	Total				Total	P=0.84
	Upper third	Middle third	Lower third	diffuse		
≤40	6(10.5%)	16(28.0%)	33(57.8%)	2(3.5%)	57	>0.05.
>40	9(8.3%)	33(30.5%)	61(56.4%)	5(4.6%)	108	
Total	15(9.09%)	49(29.6%)	94(56.9%)	7(4.2%)	165	NS

NS= non-significant

Figure 1 : Site of involvement of gastric carcinoma (n=165)



Discussion

The present study sought to discern the changes in trends of gastric carcinoma in Bangladeshi population. The incidences of adenocarcinoma of the gastric cardia and gastro-esophageal junction has been increasing in both the United States and Europe over the last 15 years[7].In present study , the distal stomach has continued to be the most common site of affliction. And malignancy of proximal stomach including the gastro-esophageal junction is low. So our study did not show significant change in distribution .The possible reasons for unchanged due to high H. Pylori prevalence and low occurrence of gastro-esophageal reflux diseases (GERD) in our population. This observation is fairly contradictory to the soaring incidence of adenocarcinoma of gastric cardium in the west, Iran ,Sweden , and Kerala of India[8-10]. But it conform well with the study results conducted in Tamil Nadu, Japan and Korea[11-12]. Two major studies from South Asian countries of Japan spanning thirty years and a hospital based study from Korea also had not shown an increasing trend in cancer of gastric cardium[11]. A population based study from Swiss Cantom of vaud had shown no increase in incidence of adenocarcinoma of gastric cardium between 1976 and 1987[13] . A recent small sized study done in DMCH where the commonest site of involvement is distal stomach (56.1%) followed by body (32.9%) and least (11%) in Cardia [14]. Our study is also mirror image of that study. Therefore the increase trend of gastric carcinoma in cardia in the west and United States can be explained by higher incidence of gastro-esophageal reflux disease and its consequences. This study also have not shown any sub-site specific change with age of patient ($p>0.05$). Ying et al has shown in their study that the proportion in the middle third and the entire body of stomach decrease with increasing patients age while that of lower third increasing with increasing age. The proportion of tumour in the upper third remained relatively a stable with increasing age [15]. 106(64.2%) out of 165 patients were serologically positive for *H. pylori* infection. This observation is relatively lower than other studies in Bangladesh and other countries [13, 16]. This can be explained by sensitivity of the method used.

Conclusion

Distal gastric carcinoma is still the commonest site of involvement in our population. But before making any concrete conclusion large scale multicenter studies is necessary.

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