

Demographic and clinico-pathological profile of carcinoma stomach in a tertiary referral centre of Eastern India

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Abstract: *Objectives:* This prospective study was done to assess the incidence, clinical presentations, histopathological subtypes of gastric adenocarcinoma in a referral institute of Eastern India. *Methods:* The patients admitted with diagnosis of gastric carcinoma in a tertiary referral hospital in Eastern India between January 2006 to December 2010 were included in this study. Data were compiled and analyzed with regards to their age, sex, socioeconomic status, their clinical presentations, site of lesion & histopathological subtypes. *Results:* 150 patients were included in this study of which 50 patients were of ≤ 50 years age. The median age group was 57 years. The male: female ratio was 2.3:1. Most of the patients were from lower socioeconomic strata (55.33%). Anemia (41.33%) and weight loss (38%) were the predominant presenting features irrespective of age, whereas gastric outlet obstruction due to antral growths was the commonest presentation in patients of ≤ 50 years age group. The most common histopathological type was adenocarcinoma; patients of ≤ 50 years of age group presented with well differentiated and moderately differentiated adenocarcinoma while those in > 50 years age group with poorly differentiated growth. Most (82.66%) of the patients presented with advanced growth (T₃/T₄). *Conclusion:* 1) The incidence of gastric carcinoma in patients younger than 50 years was more common than Western world. 2) Patients are presenting more with lesion in distal stomach than Western world. 3) Gastric outlet obstruction and metastatic disease are commoner than abdominal lump and upper GI bleeding. The latter being the commoner presentations in Western world. 4) Regarding the histological type, adenocarcinoma are commoner than in Western world and 5) Patients with signet cell subtype are much less than Western world.

Keywords: stomach, demography, carcinoma, pathology.

Introduction

Gastric cancer is the 4th most common cancer in the world (9% of all cancers) after lung, breast and colorectal cancers. Overall it is the 2nd most common cause of death but in some Asian countries, it is still the commonest cause of cancer death [1-3], in patients of > 50 years [4-5]. Worldwide the incidence of new cases of gastric cancer in 2002 was 9,34,000 of which 56% of the cases were from Asia. The incidence of gastric carcinoma is decreasing in Western countries & increasing in rest of the world [6].

Though there is a decreasing trend over the past few decades, gastric cancer remains a major public health problem in the world [7-8]. Proximal stomach is the commonest site of affection in Western countries while distal stomach is more commonly affected in Asian population. [9-10]. Proximal gastric cancer has a

more aggressive clinical course than distal ones & has a poorer prognosis [10-13]. In Asian countries the intestinal subtype of adenocarcinoma is the commonest histopathological variety [5]. Surgery is the mainstay of treatment [14-15]. Majority of the patients present with advanced disease & their prognosis is very poor despite availability of modern chemotherapeutic regimen [16-17].

Objectives: This prospective study aims to observe the demographic and clinicopathological profile of gastric cancer in a tertiary referral centre of Eastern India.

Material and Methods

This prospective study was done over a period of 5 years between January 2006 and December 2010. All cases with confirmed diagnosis of adenocarcinoma stomach were

included in the study. Contrast Enhanced CT whole abdomen was done routinely to assess the stage of the disease at presentation. In this study parameters assessed were age, sex, socioeconomic status, site of lesion, clinical presentations, histopathological subtypes, stages at presentation and types of operation performed. Inclusion criteria were patients of >12 years with biopsy proven adenocarcinoma of stomach. Exclusion criteria were patients with lesions of stomach other than adenocarcinoma. Data were analyzed by Fisher's exact test 2 tailed, chi-square tests using the standard statistical software SPSS.

Results

Total number of patients included in this study was 150. The number of patients in ≤50 years age group and >50 years age group were 50(33.33%) & 100(66.66%) respectively. The median age at presentation was 57 years. The peak incidence was in 55-65 years age group. The ages of youngest & oldest patients were 21 years & 75 years respectively. In our study males were found to be more commonly affected (n=105) than females; male: female ratio being 2.3:1. 83(55.3%) patients were from lower

socioeconomic group & only 63(42%) were literate. Irrespective of age and sex, 50.66% of the patients of our study presented with antral growth. The commonest histologic subtype, irrespective of sex, was moderately differentiated adenocarcinoma (48.66%). Signet cell type was seen in only 1.33%. In all age groups, two most common presentations were anemia (41.33%) and weight loss (38%).

Females more frequently presented with weight loss (60%) than males (28.5%) and this difference was found to be statistically significant (p value < 0.001). As shown in Table-I, in patients of ≤50 years age group, gastric outlet obstruction was the commonest mode of presentation and antral adenocarcinoma (well & moderately differentiated) was the commonest pathological type. On the other hand, patients of >50 years age group presented more commonly with anemia, asthenia, anorexia and with locally advanced and metastatic disease. In our series, 82.66% patients presented with advanced gastric cancer (T₃/T₄) and 25.33% patients presented with distant metastasis. Curative surgery could be performed in only 63 patients (42%).

| Table-1: Comparison of primary presentation features between subjects younger than 50 years and older subjects. | | | | | | |
|--|-----------------|-----------------|--|------------------|------------------|-------------------|
| | P4_GOO 1 | P4_GOO 9 | Row Totals | P7_Meta 1 | P7_Meta 9 | Row Totals |
| Young | 18 | 28 | 46 | 2 | 44 | 46 |
| Row % | 39.13% | 60.87% | -- | 4.35% | 95.66% | -- |
| Old | 17 | 87 | 104 | 36 | 68 | 104 |
| Row % | 16.35% | 83.65% | -- | 34.62% | 65.38% | -- |
| Totals | 35 | 115 | 150 | 38 | 112 | 150 |
| Fisher's exact test 2-tailed p value 0.003 | | | Fisher's exact test 2-tailed p value < 0.001 | | | |
| | P1_3A 1 | P1_3A 9 | Row Totals | P2_WL 1 | P2_WL 9 | Row Totals |
| Young | 11 | 35 | 46 | 12 | 34 | 46 |
| Row % | 23.91% | 76.09% | --- | 26.09% | 73.91% | -- |
| Old | 51 | 53 | 104 | 45 | 59 | 104 |
| Row % | 49.04% | 50.96% | -- | 43.27% | 56.73% | -- |
| Totals | 62 | 88 | 150 | 57 | 93 | 150 |
| Fisher's exact test 2-tailed p value 0.003 | | | Fisher's exact test 2-tailed p value 0.067 | | | |

| | Lesion Site ANTRUM | Lesion Site DIFFUSE | Lesion Site BODY | Lesion Site GEJ | Row Totals | |
|---|--------------------|---------------------|------------------|-----------------|------------|------------|
| Young | 30 | 0 | 9 | 7 | 46 | |
| Row % | 65.22% | 0.00% | 19.57% | 15.22% | -- | |
| Old | 46 | 17 | 18 | 23 | 104 | |
| Row % | 44.23% | 16.35% | 17.31% | 22.12% | -- | |
| Totals | 76 | 17 | 27 | 30 | 150 | |
| Chi-square test <i>p</i> value 0.011 | | | | | | |
| | HPE MD | HPE WD | HPE UD | HPE PD | HPE SC | Row Totals |
| Young | 31 | 12 | 1 | 1 | 1 | 46 |
| Row % | 67.39% | 26.09% | 2.17% | 2.17% | 2.17% | -- |
| Old | 42 | 22 | 12 | 27 | 1 | 104 |
| Row % | 40.38% | 21.15% | 11.54% | 25.96% | 0.96% | -- |
| Totals | 73 | 34 | 13 | 28 | 2 | 150 |
| Chi-square test <i>p</i> value 0.001 | | | | | | |
| Clubbing MD + WD versus UD + PD (and ignoring SC) | | | | | | |
| | HPE MD + WD | | HPE UD + PD | | Row Totals | |
| Young | 43 | | 2 | | 45 | |
| Row % | 95.56% | | 4.44% | | -- | |
| Old | 64 | | 39 | | 103 | |
| Row % | 62.14% | | 37.86% | | -- | |
| Totals | 107 | | 41 | | 148 | |
| Fisher's exact test 2-tailed <i>p</i> value < 0.001 | | | | | | |

Discussion

The incidence, site, aggressiveness & prognosis of gastric cancer vary in different parts of the world [18-20]. Worldwide gastric cancer is seen mostly after 50 years of age. In our series also the incidence was 66.66% in >50 years age group. Incidence in <50 years age group was 33%; the peak incidence was in 55-65 years age group. Some literatures have quoted an incidence of around 14.8% in <50 years age group [1-2,18]. Male: female ratio in some published series is 2:1 [1-2,17-18,20-21] and almost similar incidence was found in our study (2.33:1) as well. Some studies from underdeveloped countries show that incidence of gastric cancer is more in lower socioeconomic & illiterate population [22-24] and this was correlated with higher incidence of H. Pylori infection. Our study also shows that 55.33% patients are from low socioeconomic group & 58% are illiterate. Incidence of proximal gastric cancer is increasing (presently 50%) &

that in distal stomach is decreasing (presently 41%) in Western countries [25-26]. In Asian countries distal gastric cancer is more common [7,13]. In our series commonest site was antrum (50.66%). We found the commonest histological type to be moderately differentiated adenocarcinoma (48.66%). This is also supported by some reports [27]. Western series also quote similar data. In a survey in Khuzestan, common presentations were weight loss & abdominal pain [28]. In our study, the common presentations, irrespective of age & sex, were weight loss (52%) & anemia (40.66%). Gastric outlet obstruction and distant metastasis were commoner presentations than western world in our study, in contrast to which upper GI bleeding and abdominal lump were more common presentations in Western countries. In our study, incidence of growths presenting with invasion of serosa (T₃) was 46% and invasion of adjacent

structures(T_4) was 36.6% & distant metastasis(M_1) was 25.3%. These data are similar to those reported in another Asian series [29]. In Western countries and Japan, patients with early gastric carcinoma are detected more than our country due to routine upper GI endoscopy screening program which is lacking in our country.

Conclusion

The incidence of gastric carcinoma in patients younger than 50 years was more common than Western world. Patients are presenting more with lesions in the distal stomach in our country than the Western world. As regards to clinical presentation, patients in our country are presenting more with gastric outlet obstruction and distant metastasis whereas abdominal lump and upper GI bleeding are more common in

Western world. Patients are presenting with adenocarcinoma in a greater proportion in our country than in Western world. Patients with signet cell carcinoma are much less in our country than Western world. In our series, we performed curative surgery in 63 cases (42%). Our study has some obvious drawbacks like short period of study and small sample size. One large volume study will be required to draw an appropriate and accurate conclusion.

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