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Clinicopathological Profile of Carcinoma Stomach: An Institutional Experience of 350 patients

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Introduction

Carcinoma of the stomach is the fourth most common cancer worldwide after lungs, breast and colorectal carcinoma and is the second most common cause of cancer related deaths [1].The incidence varies across different parts of the world due to differences in cultural and food habits. In India it is the fifth most common cancer among males and the seventh most common cancer among females. [2]

The present study is to analyse the demography, clinical features, pathological characteristics and staging of patients of carcinoma stomach who presented in Regional Cancer Centre, Cuttack.

Materials and Methods

A retrospective study was done from the hospital data of 358 patients of carcinoma stomach who presented in A.H.Regional Cancer Centre, Cuttack from January 2013 to January 2016.All patients were confirmed histopathologically and 8 cases of gastric lymphoma and GIST were excluded from the study. The final study evaluated 350 patients.

All patients were clinically diagnosed followed by endoscopic and radiological correlation. They underwent surgery in A.H Regional Cancer Centre, Cuttack followed by adjuvant treatment as indicated from postoperative histopathological features. The final analysis of the study included clinical parameters like age, sex, addictions to smoking and alcohol, clinical presentation, type of surgery, final detailed histopathology, TNM Staging and Stage Grouping. Macroscopic features in the histopathology included tumor site, size, and appearance. The gastrectomy specimens were grossed and information regarding histopathology type, depth of invasion, vascular invasion, perineural invasion, margins, residual tumor, omental deposits, number of nodes resected, number of nodes positive and largest

node resected, TNM staging and stage grouping was provided. The data was analysed using standard statistical software SPSS.

Results

350 patients of histopathologically confirmed carcinoma stomach who attended A.H Regional Cancer Centre during the period January 2013 to January 2016 were analysed for the study. All patients underwent endoscopy and biopsy followed by surgical resection based on clinical and radiological features. The male to female ratio in the study group was 3:1. The age distribution ranged from 17 years to 85 years and the mean age of presentation was 55.64 years (Table 1). History of both smoking and alcohol consumption was seen in 50.3 % patients while addiction to smoking alone was seen in 14.3% and that of alcohol alone was seen in 0.6%. None of the females in the study had addiction to either alcohol or smoking. Obstruction was the most common presentation seen in the study with 33.7 % patients having obstructive features. This was followed by pain in the abdomen in 20.6 % patients and pain along with obstructive features in another 20.6 % cases. (Figure 1) Endoscopic evaluation showed growth in the stomach in 95.4 % cases and 4.6 % cases with growth in the gastroesophageal junction. (Figure 2). Majority of the patients i.e. 60.6 % underwent a radical distal gastrectomy.

The postoperative specimen was evaluated in the Department of Oncopathology, A.H.Regional Cancer Centre, Cuttack. The tumor size ranged from 1 cm to 15 cm with a mean size of 4.45 cm. 43.4 % patients had an ulcerative growth followed by an ulceroinfiltrative growth in 29.7 % patients. In histopathology type, majority of patients i.e. 22.9 % were classic adenocarcinoma followed by tubulosecretory in 22.3 % patients and diffusely infiltrative in 21.7% cases. In 76 % the growth was poorly differentiated .The depth of infiltration was upto the subserosa in 44.6 % cases. Vascular invasion was seen in 83 % cases and perineural invasion was seen in 76.6 % cases. The margin was positive in 38.3 % patients and residual tumor was seen in 22.9 %. Omentum was involved in 10.9 % cases. The average number of nodes resected was 19 and the average size of the largest node was 1.74 cm. The average number of nodes that was positive was 7.63. (Table 2)

In the pathological staging, majority of the patients (42.9 %) were in T3, 30.3% were in N3a and none of the patients had distant metastases. Majority of patients (54.3%) were in Stage III. (Figure 3)

Table: 01 Demographic profile

Age at diagnosis	<30	2.28%
	31-40	10.8%
	41-50	22.28%
	51-60	29.14%
	>60	35.4%
Sex	Male	74.9%
	Female	25.1%
Addictions	Smoking	14.3%
	Alcohol	0.6%
	Alcohol and Smoking	50.3%
Complaints	Obstruction	33.7%
	Pain	50.9%
	Pallor	11.4%

Figure – 1: Clinical Features

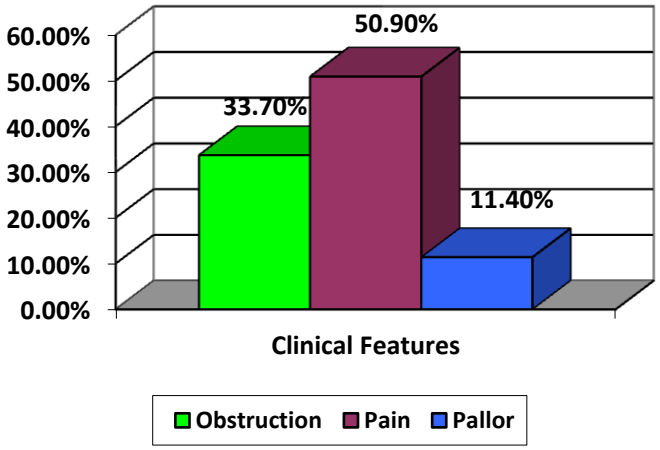


Figure – 2: Distribution of Tumor Site in Stomach

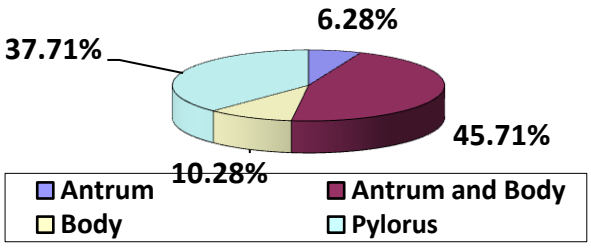
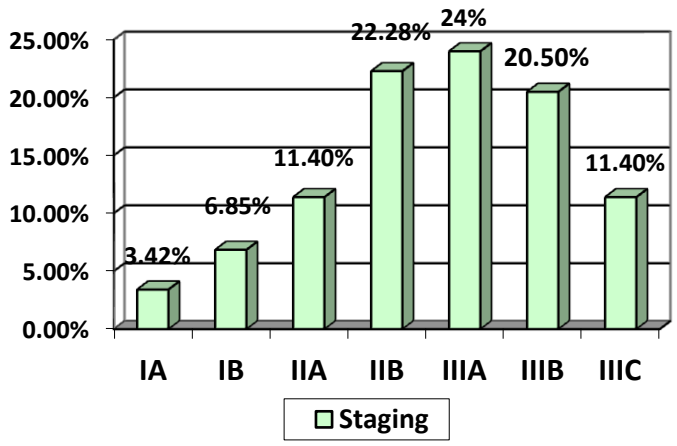


Table – 2: Postoperative Pathological features:

Tumor Size	<5cm	65.1%
	5-10cm	32.6%
	>10cm	2.3%
Appearance	Proliferative	2.3%
	Ulceroproliferative	17.7%
	Ulceroinfiltrative	29.7%
	Ulcerative	43.4%
Histopathology Type	Adenocarcinoma	22.9%
	Tubulosecretory	22.3%
	Diffusely infiltrative	21.7%
	Mucinous	6.9%
	Tubular	12.6%
Differentiation	Well diff	3.4%
	Mod diff	20.6%
	Poor diff	76.0%
Depth of infiltration	Lamina propria	9.7%
	Submucosa	1.7%
	Muscularis propria	24%
	Subserosa	44.6%
	Serosa	20%
Vascular Invasion	Positive	47.4%
	Negative	52.6%
Perineural Invasion	Positive	76.6%
	Negative	23.4%
Margin	Positive	38.3%
	Negative	61.7%
Residual Tumor	Positive	22.9%
	Negative	77.1%
Omentum	Positive	10.9%
	Negative	89.1%
Average Number of Nodes	Resected	19
	Positive	7.63

Figure – 3: Staging



Discussion

Carcinoma stomach is one of the most frequent causes of morbidity and mortality in the world. The incidence, site of involvement, clinical presentation and aggressiveness of the disease varies in different parts of the world. In the present study we have analysed 350 patients of histopathologically confirmed carcinoma stomach who presented in A.H. Regional Cancer Centre, Cuttack during the period January 2013 to 2016.

The age distribution of the study population varied from 17 to 85 years and majority of the patients i.e. 35.4% were above 60 years age group. The present study showed a steady increase in the incidence gradually from 30 years onwards with a peak at 60 years. Various studies also suggest that gastric carcinoma peaks at the 5th to 6th decades followed again by a decline after 60 years [3, 4].

The ratio of male to female was 3:1. Throughout the world there is a male preponderance of the disease [5, 6, 7] .This male preponderance of gastric cancer may be attributed to the high incidence of smoking among males as compared to females [8]

In the present study, 88% patients were addicted to smoking and alcohol while none of the females enrolled in the study were addicted to either to smoking or alcohol. Majority of females presented in 50 to 60 years age group while males presented later, the majority being in the 60 to 70 years age group. This observation correlates with established literature which also showed females to be affected earlier as compared to males with gastric carcinoma [9].

50.9 % of the patients presented with pain. Pallor alone was the presenting feature in 11.4% while gastric outlet obstruction was seen in 33.7% patients as shown in Figure 1.Most of the other studies also showed pain to be the most common presenting feature[10,11] . The relative site of the lesion in the present study is shown in Figure 2. Out of the total 350 patients, 16 (4.6%) patients were diagnosed to be carcinoma of the gastroesophageal junction and the remaining 334 patients (95.4 %) were in the stomach. In the stomach, majority of the growths i.e 45.7% involved both the antrum and the body followed by the pylorus in 37.71% cases. Studies conducted by Suvarna and Sashidharan revealed the incidence of gastric cancer was highest in the pylorus [12]. All patients underwent endoscopy and biopsy prior to surgical resection.

60.6 % patients underwent radical distal gastrectomy and only 1.6 % patients underwent a total radical gastrectomy. The postoperative histopathology has been described in detail in Table 2. The tumor size in 65.1% cases was less than 5cm. In 43.4 % patients the growth was ulcerative in appearance followed by ulceroinfiltr-ative growth in 29.7 % cases.

The histopathology type was classic adenocarcinoma in 22.9 % cases, tubulosecretory in 22.3 % cases and diffusely infiltrative in 21.7% cases. This finding also supports established literature [13]. The growth is poorly differentiated in 76% patients and moderately differentiated in 20.6 % patients. The growth had infiltrated the subserosa in 44.6 % patients. Vascular invasion was negative in most of the cases i.e. 52.6 % and perineural invasion was positive in 76.6 % cases. Margin was not involved in 61.7 % cases, residual tumor was seen in only 22.9 % cases and omentum was involved in 10.9% cases. Majority of the tumors with large size were poorly differentiated with infiltration to the subserosa and metastasis to regional lymph nodes. Most of the tumors which were smaller in size were also well differentiated, without lymph node involvement and of lower stages. The present study supports finding from the literature that well differentiated tumors present at an early stage as compared to poorly differentiated tumors [14, 15].

The mean number of nodes resected was 19 and the mean of the largest node resected was 1.738cm. 42.9 % patients presented with T3 while 30.3% patients had N3 disease. None of the patients evaluated had metastatic disease. .54.3 % patients had stage III disease. Table 2 shows the frequency of overall staging of carcinoma stomach in the present study. Majority of patients had locally advanced gastric cancers at the time of presentation as compared to early gastric cancer. However, majority of the patients in the Western countries present in early stage due to awareness and stringent screening programmes [16].

Conclusion

The present study suggests that carcinoma stomach mostly peaks around the 5th to 6th decade. Obstruction is the commonest presentation followed by pain which is frequently vague and therefore ignored. Most of the patients in India present as advanced disease. Increasing awareness among the public can help us to detect the disease in an early stage and achieve higher cure rates.

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