SOCIO-DEMOGRAPHIC AND CLINICOPATHOLOGICAL FEATURES OF GASTRIC CANCER: A STUDY OF 114 CASES

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Summary

Gastric Cancer (GC) is one of the important malignancies which causes huge morbidity and mortality throughout the globe. This study was done to analyze the epidemiological and clinicopathological aspects of gastric cancer. It was a retrospective study conducted at National Institute of Cancer Research & Hospital, Dhaka from 1st January to 31st December 2013. In total, 114 histopathologically confirmed patients with GC were included in the study. Univariate methods (Mann-Whitney U-test, and Chi-square) were used for analysis. Among 114 cases, 81 (71.1%) were male. Sex ratio (Male: Female) was 2.45:1. The mean age of the patients was 52.9 years (SD ±12.6) at the time of the diagnosis. Weight loss, as a frequent symptom at the time of diagnosis, was observed in 85.1% of the cases. All of the patients were diagnosed with advanced pathologic stage and tumour grading was welldifferentiated 13.1%, moderate 51.8% and poorly differentiated 35.1%. In 72.8% of the patients, the tumours were located in the distal part of the stomach. All the patients were in the advanced stages of GC, which favours a poor survival. Male are more frequently affected female. lack of education, poor sanitation, high salt intake, low socioeconomic conditions are associated with increase chance of gastric cancer. Therefore, further

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comprehensive study of etiology and risk factors of GC, earlier detection in younger ages and in primary stages of tumour are needed. Weight loss, anorxia, abdominal pain and vomiting in elderly could be considered as alarm symptoms for GC diagnosis.

Key words
Gastric cancer; Socio-demographic; Clinicopathologic characteristics.

Introduction
Gastric Cancer (GC) is the 4th most common cancer worldwide and the second most common cause of cancer-related deaths [1]. In 2014 it was the 6th leading cancer at National Institute of Cancer Research & Hospital (NICRH), Dhaka [2]. Despite complete resection of GC and lymph node dissection, as well as improvements in chemotherapy and radiotherapy, there are still 700000 gastric cancer-related deaths per year worldwide [1]. In the different stages of GC the outcome differ greatly. In stage one, stage two and stage three the five years survival were reported to be around 80%, 56% and 15% respectively [3]. Unfortunately, about eight out of 10 (80%) people diagnosed with stomach cancer are stage four, meaning the cancer has already spread when they are diagnosed. Fewer than one in 20 people (5%) live for at least five years if they have stage four stomach cancer when they are diagnosed [3]. There is an absence of good epidemiologic information about GC in our country. The current study was done to observe the socio-demographic and clinicopathological features of GC among the patients attended the National Institute of Cancer Research & Hospital, Dhaka, Bangladesh.

Material and methods
This survey was a retrospective study that was conducted on 114 GC patients who reported to the department of Surgical Oncology of NICRH from 1st January to 31st December 2013. All patients with confirmed GC on the basis of pathology report were included in to the study. These patients had at least one of the following procedures

in our hospital: diagnosis, surgery or other treatment and surveillance. The data included demographic characteristics (Age, sex, education, occupation, family income, and sanitation) personal habits (Smoking, betel nut chewing and extra salt intake) pathological characteristics (Tumour location, grading, staging etc) and medical history (Symptoms) and signs were derived from patient file. A structured questionnaire was used to extract data. Tumour staging in each patient was based on pathological information. The staging was made in accordance with the TNM classification. Statistical analysis of the results was obtained by SPSS for Windows (IBM SPSS Statistics for Windows, version 19.0, Armonk, NY, IBM Corp). Categorical data were expressed as number and percentage. Continuous data were expressed as mean ± SD. Univariate methods (Mann-Whitney U-test, and Chi-square test) were used for analysis. Two tailed $p<0.05$ was considered as significant.

Results

The mean age of the patients at diagnosis was 52.9 years (SD ±12.6, range 23–80). Among 114 cases, 81 (71.1%) were male and 33 (28.9%) were female and sex ratio (Male: Female) was 2.44:1. The mean age of males at diagnosis was not significantly different than females (53.5 vs. 51.6 years, $p>0.05$). The level of education in our study was relatively low: 70.1% of the patients were illiterate or had primary education and only 7.0% had graduate education. (Table I). More than 55% were ever smokers and 41.2% were betel nut chewers (Table II). Histologic type of all the tumours was adenocarcinoma. Most of the tumours were located in the distal part of the stomach (72.8%). Regarding staging all the patients were in the advanced stage of the disease. Tumour grading was well differentiated 13.1%, moderate 51.8% and poorly differentiated 35.1%. More than two-third (71%) of cases were intestinal type, the remaining 29% were diffuse and mixed types but there were no significant differences between males and females ($p>0.05$) in these regards (Table III). The most common symptoms in patients at diagnosis were: weight loss (85.1%), anorexia (68.4%) abdominal pain & vomiting (44.7% each) and weakness (33.3%) (Table IV).

Table I : Socio-demographic characteristics of patients with GC

Variable	Subgroup	n	%
Age at diagnosis (Years)	<=30	5	4.4
	31-40	17	14.9
	41-50	33	28.9
	51-60	27	23.7
	>60	32	28.1
Gender	Male	81	71.1
	Female	33	28.9
Education	Illiterate	43	37.7
	Primary	37	32.5
	SSC 1	9	16.7
	HSC	7	6.1
	Graduate	8	7.0
Occupation	Farmer	49	43.0
	Serviceman	14	12.3
	Day labour	12	10.5
	Businessman	9	7.9
	House wife	30	26.3
Family income (BDT)	< 10000	88	77.2
	> 10000	26	22.8
Sanitation	Poor	90	78.9
	Acceptable	24	21.1

Table II : Distribution of the patients by personal habits

Variable	Subgroup	n	%
Smoking	Yes	63	55.3
	No	51	44.7
Betel nut chewing	Yes	47	41.2
	No	67	58.8
Additional salt intake	Yes	51	44.7
	No	63	55.3

Table III : Pathologic characteristics of patients with GC

Variable	Subgroup	n	%
Tumour location*	Proximal	31	27.2
	Distal	83	72.8
Staging	Advanced	114	100.0
Grading	Well differentiated	15	13.1
	Moderately differentiated	59	51.8
	Poorly differentiated	40	35.1
Lauren types	Intestinal	81	71.0
	Diffuse	28	24.6
	Mixed	5	4.4
H. Pylori antigen	Present	99	86.8
	Absent	15	13.2

* Tumour location was ascertained by imaging findings.

Table IV : Distribution of the case patients by symptoms (n=114)

Symptoms	n	%
Weight loss	97	85.1
Anorexia	78	68.4
Abdominal pain	51	44.7
Vomiting	51	44.7
Weakness	38	33.3
Dyspepsia	36	31.6
Dysphagia	22	19.3
Lump	13	11.4
Melena	10	8.8
Regurgitation	05	4.4

Discussion

The pattern and incidence of GC vary widely in different parts of the world [4,5]. The epidemiologic features of GC have been studied in Japan and the Western world [6,8]. However, only a few reports from the less developed countries have been published [9-11]. Moreover, there is an absence of good epidemiologic information about GC in our country. Previous reports indicated that GC is one of the most common malignancies in Bangladesh [2]. In our series, the peak incidence of GC was in ages older than 50 (51.8%), and the mean age of the whole group was 52.9 years. We also found a male predominance of about (Male: Female) 2.5:1 (81 vs. 33) and these results are compatible with other reports [4,12,13,14]. The causes of this sex preponderance are not yet obvious. Presumably, males have more frequent and longer exposure to environmental carcinogens than females, and such exposure can be an important cause of male prominence [15]. In the study, 55.3% of the patients smoked and 41.2% were betel nut chewers; and this was consistent with other studies [16]. Considering the histological type, we found that adenocarcinoma was only histological type in patients under the study. Other studies have reported the same results [17]. Our founding reveals that 35.1% of the patients have a poorly differentiated grade at the time of diagnosis and only 13.1% of the study group had a well differentiated grade. These results are close to the results of previous researchers [18-21]. Nakamura et al analyzed the pathology and prognosis of gastric cancer and they found that 45.5% of early

gastric carcinomas were well differentiated adenocarcinomas followed by moderately-differentiated (17.4%) and poorly differentiated (37.1%) [22]. In that study, the most common histological type was poorly differentiated adenocarcinoma in advanced lesions.

With regards to depth of invasion, all patients under the study were diagnosed with advanced GC. Kim et al reported that 80.3% of young patients had advanced carcinoma, but the percentage of early gastric carcinoma was higher in the young patients compared with the old patients (19.7% vs 13.8%) [23]. The most symptoms observed in patients at the time of diagnosis were: weight loss (85.1%), anorexia (68.4%) abdominal pain & vomiting (44.7% each). In a survey in Khuzestan, Iran, the commonest symptoms of patients was abdominal pain and weight loss [16]. Out of 114 patients 99 (86.8%) were found seropositive for H. Pylori antigen which is consistent with study findigs [24].

Conclusion

All the patients were in the advanced stages of GC, which favours a poor survival. Male are more frequently affected female. lack of education, poor sanitation, high salt intake, low socioeconomic conditions are associated with increase chance of gastric cancer.Therefore, further comprehensive study of etiology and risk factors of GC, earlier detection in younger ages and in primary stages of tumour are needed. Weight loss, anoraxia, abdominal pain and vomiting in elderly could be considered as alarm symptoms for GC diagnosis.

Disclosure

All the authors declared no competing interest.

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