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Clinico-Epidemiological Features with Gastric Cancer Patients Presenting at Bangabandhu Sheikh Mujib Medical University, Bangladesh

Rajani Jha[1*], Sarwar Alam[2], Md. A. Bari[2], Khandokar Samsujjaman[1], Mohammad J. Shams[3], Minu Jha[4]

[1]Resident, Department of Clinical Oncology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh
[2]Professor, Department of Clinical Oncology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh
[3]Medical Officer, Department of Clinical Oncology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh
[4]Resident, Department of Rheumatology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh

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***Corresponding author:** Rajani Jha
Resident, Department of Clinical Oncology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh

Abstract **Original Research Article**

***Background*:** Gastric carcinoma is one of the commonest cancers in Bangladesh. The goal of this study was to assess at the clinico-epidemiological characteristics of individuals with gastric cancer. ***Methods*:** This descriptive, cross-sectional study was conducted from November 2021 to October 2022, 120 patients with gastric cancer were included at Bangabandhu Sheikh Mujib Medical University (BSMMU), Department of Clinical Oncology. A pre-made questionnaire was used to collect data from patients during face-to-face interviews. ***Results*:** The mean age of the patients was 53.0 (±11.496) years, most of the patients (46.6%) were 51 – 60 years of age, 75.0 % of enrolled patients were male, 35.0 % of patients were service holder. The bulk of the cases had H. pylori infection (73.3%). The most common histological type among the patients was adenocarcinoma (95%). In terms of primary tumor location, the gastric antrum (50.0%) was the most prevalent subsite. Most of the patients were diagnosed as locally advanced stage. ***Conclusions*:** In conclusion, gastric cancer occurs mainly in middle aged males and associated with H. pylori infection. Adenocarcinoma is the most frequent histological form, with the gastric antrum as the main location of tumors and advanced stage.

Keywords: Clinico-epidemiological, gastric cancer, cross sectional study.

INTRODUCTION

Gastric cancer is one the commonest malignancy worldwide. It is one of the most common primary sites of gastro intestinal tract malignancy. The burden of cancer incidence and mortality is rapidly increasing world-wide. An estimated 19.3 million new cancer cases and almost 10.0 million cancer deaths occurred in 2020 globally [1]. Stomach cancer remains an important cancer worldwide and is responsible for over one million new cases in 2020 and an estimated 769,000 deaths (equating to one in every 13 deaths globally), ranking fifth for incidence and fourth for mortality globally [2]. Rates are 2-fold higher in men than in women. In men, it is the most commonly diagnosed cancer and the leading cause of cancer death in several South-Central Asian countries, including Iran, Afghanistan, Turkmenistan, and Kyrgyzstan. Incidence rates are highest in Eastern Asia (Japan and Mongolia, the countries with the highest incidence in men and women, respectively) [3]. Though Bangladesh has a lacking of a definite population-based statistics for cancer, there are few hospital-based statistics; gastric cancer is the 5th most common cancer for both sexes and the 3rd most common cancer among the males [4].

Approximately 95% of all gastric cancers are adenocarcinoma. The term gastric cancer refers to adenocarcinoma of the stomach [5]. Gastric carcinogenesis is a multistep and multifactorial process that, in many cases, it appears to involve a progression from normal mucosa through chronic gastritis to intestinal metaplasia to dysplasia [6]. There are three primary anatomic sub-sites with in the stomach: fundus, antrum and body of the stomach. The majority of the tumors originate from the gastric antrum [5].

The epidemiology of gastric cancer strongly reflects the association of some etiological factors. Helicobacter pylori infection is the most common etiological factors followed by smoking and others like a high intake of salt, nitrate, smoked and salted food,

lack of dietary intake of Vitamin A and C containing food [7].

Gastric cancer tends to be more advanced at the time of presentation. Many studies shows that 60% to 90% of gastric cancer patients had primary tumors penetrating the serosa or invading adjacent organs and that at least 50% had lymphatic metastasis [8]. Because of the vague, non-specific symptoms that characterize gastric cancer the majority of patients with cancers of the hypopharynx present with advanced local or regional disease [5].

Weight loss is the most common presentation (>80%) of gastric cancer patients followed by abdominal pain and other symptoms like anorexia, fatigue, epigastric discomfort, early satiety, nausea, vomiting etc. [9, 10].

Gastric carcinoma most commonly diagnosed after 50yeras of age [11]. Male are affected twice than female [3]. In this study, we looked at the epidemiological and clinicopathological features of individuals with gastric cancer.

MATERIALS AND METHODS

This descriptive, cross-sectional study was conducted from November 2021 to October 2022, 120 patients with gastric cancer were included at Bangabandhu Sheikh Mujib Medical University's Department of Clinical Oncology. Before collecting data, each patient provided informed consent. The approach of consecutive sampling was followed. A pre-made questionnaire was used to collect data from patients during face-to-face interviews. Age, gender, primary locations of cancer, clinical stage, histological type, risk factor, and presenting symptoms were study variables. The data was analyzed using the SPSS software program for Windows, version 26.0.

RESULTS

This study included 120 people with gastric carcinoma. The patients' mean age was 53.00 (±11.496) years. The most prevalent age group for gastric carcinoma was 51–60 years old (46.6%). There were 80 male cases (66.67%) and 40 female cases (33.3%). The gender ratio was 2:1. The bulk of the patients (42.0%) were service holder. Of the total number of patients, there were 88 (73.3%) patients had helicobacter pylori infection, 68 (56.6%) patients were smoker (Table 1).

Table 1: Distribution of patients according to demographic characteristics

Variables	**Number of patients**
Age (mean±SD)	53.00 (±11.496) years
Age groups (%)	
18-30	04 (3.33%)
31-40	07 (5.83%)
41-50	21 (17.5%)
51-60	56 (46.6%)
61-70	28 (23.3%)
>70	04 (3.33%)
Sex (%)	
Male(M)	80 (66.67 %)
Female(F)	40 (33.3%)
M: F (Ratio)	2:1
Occupation (%)	
Farmer	32 (26.6%)
Service holder	42 (35.5%)
Business	18 (15.0%)
House wife	18 (15.0%)
Others	10 (8.3%)
Risk factors	
Smoking	68 (56.6%)
Helicobacter pylori infection	88 (73.3%)
Salty and smoked food	24 (20.0%)
Type A blood group	44 (36.6%)
Lack of vegetables	24 (20.0%)

Weight loss (70 cases, or 58.3% of all cases) and epigastric pain (56 cases, or 46.5% of all cases) were the two most frequent symptoms (Table 2).

Table 2: Distribution of patients according to major complaints

Presenting Complaints	Number of patients (%)
Weight loss	58.3
Anorexia	32.8
Epigastric pain	46.5
Early satiety, indigestion , nausea and vomiting	15.8
Malena	11.6
Asymptomatic	7.5

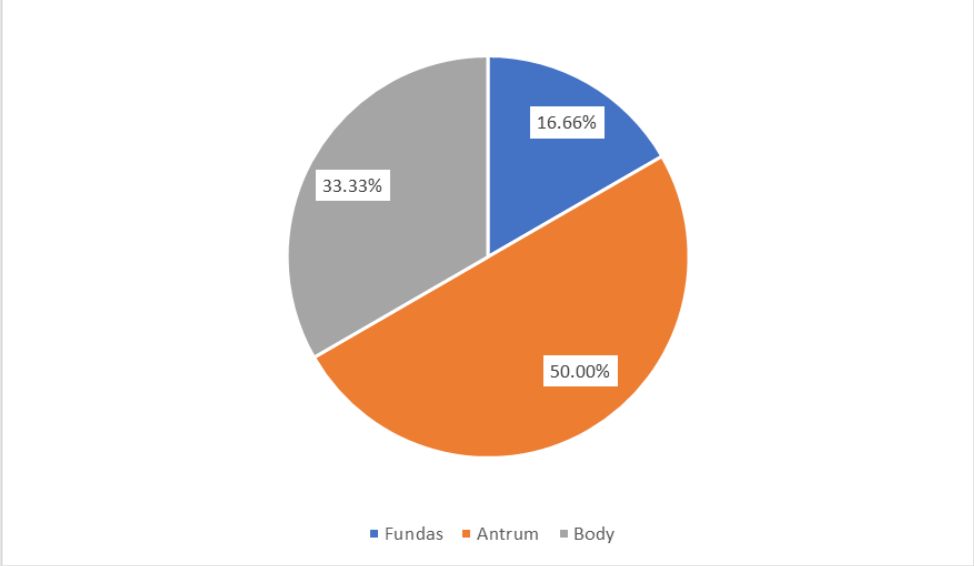

Figure 1: Distribution of the patients according to the sub-sites

The gastric antrum (50.0%), body of the stomach (33.33%), and fundus (16.67%) were the patients' primary subsites (Figure 1).

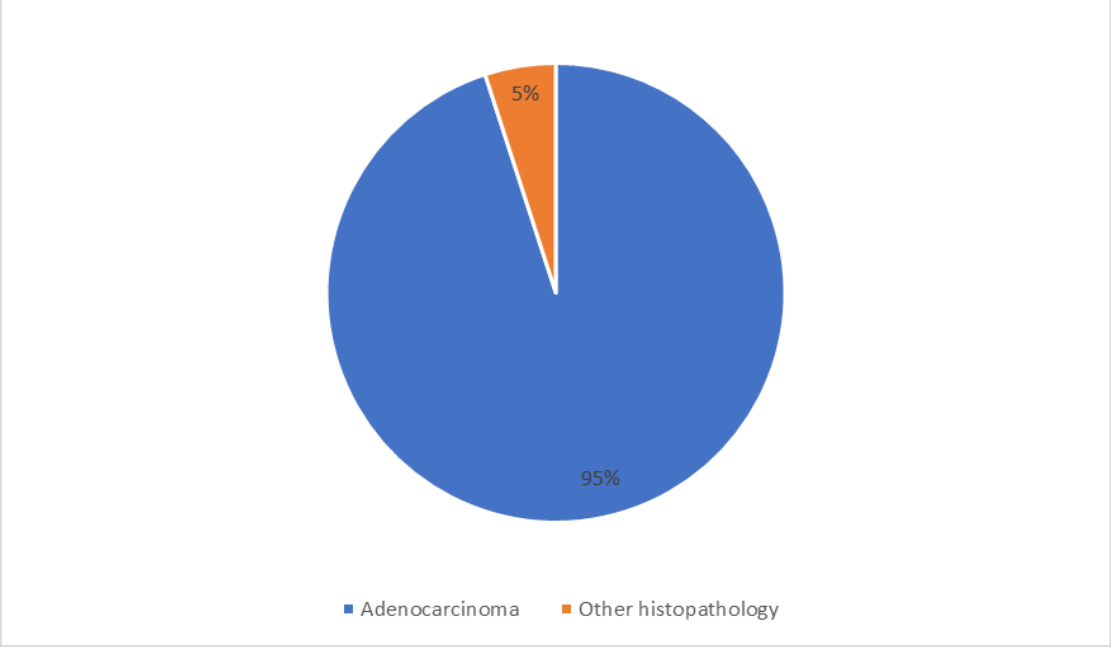

Figure 2: Distribution of the patients according to their histopathology.

Adenocarcinoma was found in 95 % of the patients on histology. The remaining histological types include neuroendocrine carcinoma, squamous cell carcinoma, lymphoma (Figure 2).

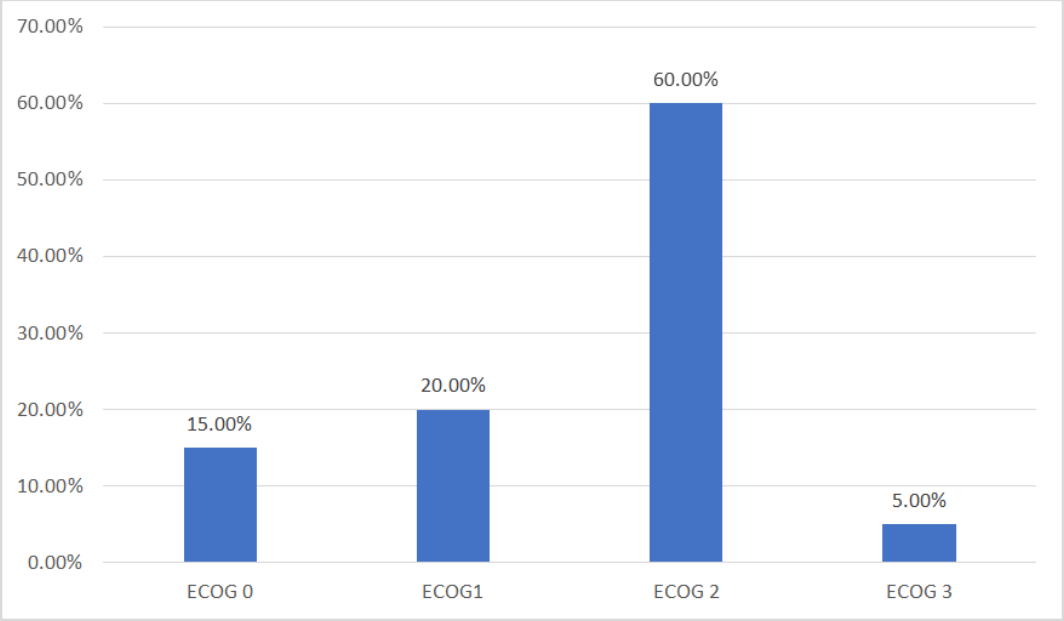

Figure 3: Distribution of the patients according to their performance status.

In this study, 72 (60.0%) patients found to have performance status ECOG 2, 24 (20.0%) patients with performance status ECOG 1, 18 (15.0%) patients and 6 (5.0%) patients with performance status ECOG 1 and 3 respectably.

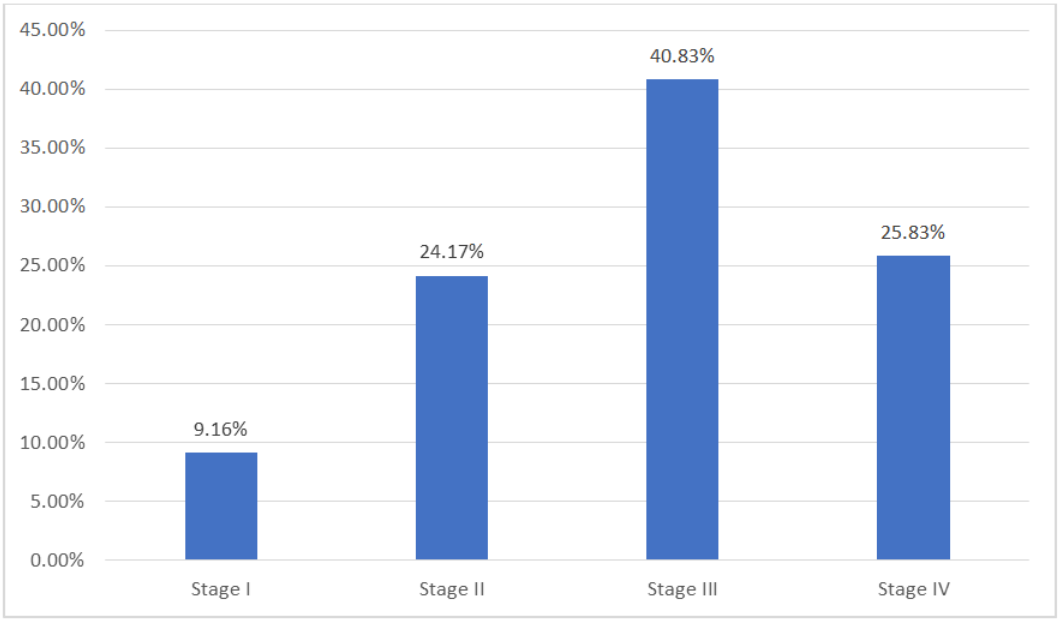

Figure 4: Distribution of the patients according to their clinical stage.

Distribution by stages demonstrates the patients in various stages of gastric carcinoma; stage I patients made up 9.16% of the total, stage II 24.17%, stage III 40.83%, and stage IV 25.83% of the total (Figure 4).

DISCUSSION

In Bangladesh, the estimated number of new cases of gastric cancer in 2020 was around 7599, among them 6642 gastric cancer patients died in 2020, it ranked 6th according to the incidence and ranked 5th in terms of mortality in 2020, found 5th predominant cancer in male [5]. Helicobacter pylori infection was the most common risk factor (73.3%), which corresponds to Karimi *et al.*, 2014 and Shams Mj *et al*,.2022, who found that H. pylori causes 65 percent to 80 percent of all gastric cancer cases [7, 15]. The vast majority of people with gastric cancer are detected at a late stage (73.23%), these observations nearly correlate with Salah-Eldin *et al.*, 2009 [11]. A total of 120 patients were studied for this study in order to assess the

epidemiological and clinicopathological features of gastric cancers.

The mean age of the patients at diagnosis was 53.00 (±11.496) years, these observations nearly correlate with Salah-Eldin *et al.,* 2009, who noted that the majority of the patients were in their fifth or sixth decade of life [11]. The majority of the patients (73.23%) were diagnosed after the age of 50. This finding is consistent with the findings of DeVita *et al.*, 2019, who discovered that the majority of patients were over the age of 50 [5].

Regarding the gender of the patients,66.67% patients were males, On the other hand, 33.3% patients were females with male: female ration was 2:1, this finding is consistent with that of Sung *et al.,* 2020, who found that the incidence of stomach cancer is 2-fold higher in men than in women [3]. Helicobacter pylori infection was the most common risk factor (73.3%), which corresponds to Karimi *et al.,* 2014, who found that H. pylori causes 65 percent to 80 percent of all gastric cancer cases [7]. Smoking was found as second most common risk factor (56.6%), this observation correlates with AMY Nomura *et al.,* 2011 who showed a strong association of smoking with gastric carcinoma. Other risk factors of gastric cancer included some dietary factors and genetic factors [12].

The most common histological type we observed in this study was adenocarcinoma (95%), which is in line with previous study [5]. In terms of location of tumor, 16.7% patients had the primary tumor in the fundus whereas 50.0% patients had the same in the antrum of the stomach, 33.33% patients had it in the body of the stomach, according to Crew *et al.*, 2006, and antrum is the most common site of gastric cancer [14]. According to incidence, Asia has the greatest incidence of gastric carcinoma [3]. The reason for this is the high incidence of helicobacter pylori infection and practice of smoking, poor dietary habit, sedentary life style in these countries [7, 12, 13]. The majority of the patients in this study were in advanced stages (90.76%), which is consistent with Majewski *et al.*, 2013 [8]. The most prevalent symptom in this study was weight loss (58.3%). Epigastric pain was the second-most prevalent symptom (46.5%), followed by anorexia which was (32.8%). Saragoni *et al.*, 2013 found that most gastric cancer patients experience weight loss, persistent abdominal pain, dysphagia, anorexia, nausea, early satiety [9].

CONCLUSION

The findings indicate that middle and older aged males with helicobacter pylori infection and who smoke have a higher incidence of gastric cancer. The gastric antrum was most frequently affected primary sub-site. The most frequent histological type was adenocarcinoma. As the majority of the patients had advanced disease, early diagnosis is essential to stop the disease's progression.

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DECLARATIONS

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Conflict of Interest: None.

Ethical Approval: The study was approved by the Institutional Ethics Committee.

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