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Original Article

Gastric Carcinoma in the Young Adults: A Disturbing Trend in the Indian Population

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Abstract

Introduction: Gastric carcinoma is an aggressive malignancy with non-specific early symptoms. It is the second most common cause of cancer-related deaths in the world.

Materials and Methods: All cases of gastric carcinomas aged <40 years presented at Sri Ramachandra Institute of Higher Education and Research from January 2016 to December 2019 were included in this study. The presenting symptoms and outcome were collected from medical records. Pathology reports of the included cases were retrieved and associated factors were analyzed.

Results: Out of the 177 known cases of gastric carcinoma, 17 were under the age of 40 (9.6%), out of which, 10 (58.8%) were female and 7 (41.7%) were male. The number of males was higher in the patients >40 years. Fourteen cases (82.3%) were between 30 and 40 years. Three cases (17.6%) were between 20 and 30 years of age. *Helicobacter pylori* associated gastritis was seen in 6 cases (35.2%). Out of the 17 cases (41.1%), 7 were poorly differentiated. The distal stomach was the site of the tumor in 15 cases (88.2%), 2 cases were present in the gastroesophageal junction. The most common presenting complaints of these patients were abdominal pain, abdominal distension, vomiting associated with food intake, and constipation, with the duration of these symptoms being 1–6 months. Two patients (11.7%) had a positive family history. Three patients (17.6%) had a positive history of substance abuse. Five patients reported a history of loss of weight and appetite. One patient had metastasis to the liver, one to the liver, bone, and lungs, and one to the liver and esophagus. Ten patients (58.8%) were treated with gastrectomy (subtotal/distal/partial) and two patients with esophageal gastrectomy. Most of the patients were given chemotherapy and one was given palliative chemotherapy and radiotherapy.

Conclusion: Tumors rarely occur in the young, hence malignancy is not suspected and diagnosis is delayed. This leads to a higher mortality rate as patients present with advanced stage of the disease. This study highlighted the "shift in trend" of incidence of gastric carcinomas in younger age group. Screening and early diagnosis and treatment are essential for young patients.

Key words: Gastrectomy, Gastric carcinoma, Mortality rate

INTRODUCTION

Gastric carcinoma is an aggressive malignancy with non-specific early symptoms depending on the location of the tumor. It is the second most common cause of cancer-related deaths in the world. Effective screening programs for this disease exist only in three countries – Japan, Korea, and Chile.[1] Malignancy is not usually suspected in the young patients, thus postponing evaluation and treatment. Surgically curable early gastric cancers are usually asymptomatic and are infrequently detected outside screening programs. There are two distinct types of adenocarcinoma – intestinal and diffuse. Intestinal type tumors are commonly related to *H. pylori*.

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MATERIALS AND METHODS

Study Type

A hospital-based retrospective cohort study done on known cases of gastric carcinoma in a tertiary care hospital (SRIHER) using histopathology records.

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Sampling
Systematic random sampling.

Sample Size
All cases of gastric carcinomas aged <40 years presented from January 2016 to December 2019 were included in this study.

Inclusion Criteria
Known patients of gastric carcinoma under the age of 40 years were included in the study.

Exclusion Criteria
Age >40 years were excluded from the study.

Non-epithelial tumors and metastasis into stomach were not included in the study.

The presenting symptoms and outcome were collected from medical records. Pathology reports of the included cases were retrieved and associated factors were analyzed.

RESULTS

Out of the 177 known cases of gastric carcinoma, 17 were under the age of 40 (9.6%). Out of 17 cases, 14 cases (82.3%) were between 31 and 40 years. Three cases (17.6%) were between 21 and 30 years of age. Ten patients (58.8%) were female and 7 patients (41.7%) were male. The most common presenting symptoms of the patients were abdominal pain, abdominal distension, vomiting associated with food intake, and constipation. The duration of these symptoms is 1–6 months. Three patients (17.6%) had a positive history of substance abuse (alcohol and tobacco). Five patients (29.4%) reported a history of loss of weight and loss of appetite. Two patients (11.7%) had a positive family history.

H. pylori associated gastritis was seen in 6 patients (35.2%). The number of males was higher in the patients >40 years. The distal stomach was the site of the tumor in 15 cases (88.2%), 2 cases were present in the gastroesophageal junction. Seven (41.1%) of tumors were poorly differentiated.

Signet ring cells seen in 5 patients (29.4%), indicating diffuse type of carcinoma stomach. Two patients had metastasis to the liver, one patient had metastasis to the liver, bone, and lungs. Ten patients (58.8%) treated with gastrectomy and 2 patients with esophagogastrectomy. Five patients given palliative chemotherapy.

DISCUSSION

Carcinoma stomach is considered a disease of the middle aged and elderly. Indeed, its peak incidence is considered to occur in persons over 50 years of age.[2-4] However, the incidence of gastric carcinoma in the young, although not high, has been recorded in many studies. Approximately 3% of all cases of carcinoma of the stomach may occur in patients 35 years of age or younger patients.[4] A near universal finding in young patients has been observed that there is high frequency of advanced lesions and undifferentiated tumors at presentation in comparison with older patients; this has often been attributed to the delay in diagnosis.[5] Gastric cancer in the young patients spreads more rapidly and is biologically more aggressive.[6] Young patients less likely present as gastroesophageal junction growth as compared to antral growth.[7]

The incidence percentage of gastric carcinoma in patients <40 years of age in our study is 9.6%. The findings of my study were consistent with studies done by Katai *et al.*,[1] Matley *et al.*,[8] and Dhobi *et al.*[9] [Table 1]. The number of female patients (58.8%) was more than male patients consistent with the studies done by Matley *et al.* and Dhobi *et al.* A positive family history of gastric carcinoma was found in 11.7% of patients which was concurring with a study done by Dhobi *et al.* [Table 2].

Location of tumor occurs commonly in the distal stomach than GE junction [Table 3]. The location of tumor in our study concurs with the study done by Matley *et al.* Table 4 shows the percentage of poorly differentiated tumors having a poor prognosis among young gastric carcinoma patients which was around 41.1%, this percentage is slightly higher in comparing to a study by Katai *et al.* Signet ring

Table 1: The number of patients with gastric carcinoma under 40

Study	% gastric Ca under 40 years
My study	9.6
Katai *et al.*	7.1
Matlay *et al.*	7.2
Dhobi *et al.*	10

Table 2: Patients with family history of gastric carcinoma

Study	% family history
My study	11.7
Matlay *et al.*	5.4
Dhobi *et al.*	10

Table 3: Location of tumor occurs commonly in the distal stomach

Site	Distal stomach (%)	GE junction (%)
My study	88.2	1.6
Matlay *et al.*	89.1	5.4

Table 4: Percentage of poorly differentiated tumors: Show a poor prognosis among young gastric carcinoma patients

My study	41.1
Katai *et al.*	34.8

Table 5: Percentage of patients developing metastasis

My study	17.6%
Dhobi *et al.*	17.4%

Table 6: Mode of treatment

Management	Surgery (%)	Palliation (%)
My study	58.8	29.4
Matlay *et al.*	14	32
Katai *et al.*	79	14.6
Dhobi *et al.*	68	26

cells were seen in 29.4% of patients among the poorly differentiated carcinomas. About 17.6% of patients developed metastasis in the course of the disease which correlates with a study done by Dhobi *et al.* [Table 5].

In our study, 10 patients (58.8%) treated with gastrectomy and 2 patients with esophagogastrectomy. Five patients were given palliative chemotherapy. Table 6 gives the mode of treatment given to these patients and a comparison with other similar studies.

Gastric cancer is one of the leading causes of death. When we compared them with older patients, the differences we recorded were the high proportion of females, the frequency of the diffuses signet ring and infiltrating histological types and no associated gastritis. Average age of patients in Indian population is 55 years (according to Indian Council of Medical Research). Majority of tumors in the young are poorly differentiated.

CONCLUSION

Tumors rarely occur in the young, hence malignancy is not suspected and diagnosis is delayed. This leads to a higher mortality rate as patients present with advanced stage of the disease. This study highlighted the "shift in trend" of incidence of gastric carcinomas in younger age group. Screening and early diagnosis and treatment are essential for young patients.

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