



EPIDEMIOLOGICAL STUDY OF CARCINOMA STOMACH IN JHARKHAND: REFLECTION OF A TERTIARY CENTRE BASED STUDY

Surgery

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ABSTRACT

The epidemiology of gastric cancer suggests that it is not a disease caused by a single factor, but a combination of genetic, sociocultural, and environmental factors in a given region dictates its presentation. Our hospital Rajendra Institute of Medical Sciences is premier tertiary hospital of Jharkhand, and situated at its capital Ranchi. It has wide variety of population belonging to many groups mainly live in rural and sub-urban areas. All group has its own culture, food habits, habits of smoking, alcohol, mainly country made liquor & tobacco chewing. So, our study is to search epidemiological study of carcinoma stomach in Jharkhand. The present study leads to inference that gastric cancer is more prevalent in 41-60 years age-group but no age is immune. It is more prevalent in males. Most of our patients belonged to low socioeconomic group. However, there was no significant correlation between incidence and the dietary risk factors, personal habits of smoking/ alcohol/ tobacco chewing, blood groups and family history. The most common histological type is adenocarcinoma and most common site is distal stomach. Radical resection is by far the best modality available with a potential to offer cure to those, in whom the disease is detected in earlier stage.

KEYWORDS

Gastric Carcinoma; Stomach cancer; Adenocarcinoma of stomach; H. pylori.

INTRODUCTION:

Worldwide, gastric cancer is the fourth most common cancer and the second leading cause of cancer death after lung cancer.¹ It is especially prevalent in East Asia and South America and has been increasing in developing countries, which now have almost two third of all distal gastric cancer cases.² It is a disease of older individuals, with peak incidence in the seventh decade of life. The disease affects men disproportionately, with more than 60% of new cases occurring in men. Among racial groups, the disease is more common and has a higher mortality in African Americans, Asian Americans, and Hispanics compared with whites.³

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The epidemiology of gastric cancer suggests that it is not a disease caused by a single factor, but a combination of genetic, sociocultural, and environmental factors in a given region dictates its presentation. Japanese immigrants to the US maintain nearly the same incidence of gastric cancer as that of the region where they spent their first 20 years of life; the offspring of these same immigrants, however, show an incidence comparable to that of the native Americans in the same area.⁴ These findings suggest that dietary and other environmental factors exposures in early life are significant causative factors for gastric cancer. Chronic infection with H. pylori bacterium may lead to a sequence of histologic changes that result in a malignant lesion. The cascade of events begins with sustained bacterial infection with H. pylori that leads to non-atrophic gastritis that transforms into multifocal atrophic gastritis characterized by loss of parietal cells, chief cells and glandular atrophy, without metaplasia then into intestinal metaplasia and finally dysplasia develops.⁵ Eventually, foci of dysplasia can develop in the areas of metaplasia. Overtime the areas of dysplasia can invade the lamina propria defining them as invasive carcinoma.⁸ The incidence of gastric cancer varies in different regions and can fall rapidly, even in the same population in relation to levels of sanitation, standards of living, food storage and the use of salt, changes in diet with fresh fruits and vegetables being always available.³ Several physical conditions, including pernicious anemia, hypochlorhydria, and achlorhydria, have been associated with a higher incidence of gastric cancer.

AIM AND OBJECTIVES:

The aim of this study was to carry out an observational study on the gastric carcinoma in the patients coming to RIMS, Ranchi with the

objectives of:

- Making an observation on the incidences of gastric cancer and its relations with age-group, sex, dietary risk factors, socioeconomic status and lifestyle factors.
- Identifying the histological types of gastric carcinoma more prevalent in patients coming to the tertiary care centre and take it as a reflection of the Jharkhand state.
- Observation on the recent trends in gastric carcinoma especially about the site of the stomach involved.

MATERIAL AND METHODS

Material:

After getting approval from Institutional Ethics Committee, RIMS, Ranchi, the present work comprises observations on 62 patients of Gastric Cancer who has come to the RIMS, Ranchi either in the OPD/Emergency of surgery department or referred from other departments during our study period.

Methods:

Study Design- Prospective observational study

Place- Rajendra Institute of Medical Sciences, Ranchi

Duration- December 2017 to March 2020

Inclusion Criteria-Patient diagnosed as a case of gastric carcinoma and belonging to Jharkhand.

Exclusion Criteria-

1. Patients coming to RIMS but do not belong to Jharkhand.
2. Clinically suggestive of gastric carcinoma but are not biopsy proven.

OBSERVATION & DISCUSSION

Age group (years)	No. of patients	Percentage
20-30	2	3.2
31-40	12	19.4
41-50	17	27.5
51-60	18	29
61-70	11	17.7
71-80	2	3.2
Total	62	100

Preparation Of The Application:

Maximum number of gastric cancer patients (56.5%) were in 41-60 years age group in this study.

Malhotra sl. studied GI cancers in 6 zonal railway hospitals and

found that the gastric cancer was most prominent in the age-group of 35-55 years in south India and 45-55 years in north India.¹

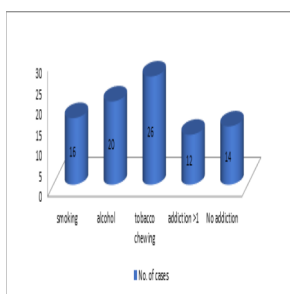
According to the western literature gastric cancer has peak incidence in the seventh decade of life but in this study and also in other Indian studies maximum incidence has been found in 40-60 years age groups i.e., a decade earlier than western literature.⁵

Sex- Ratio

- The male: female ratio in this study was 1.3:1. Gastric cancer has been found to show male preponderance in all the studies.
- Rastogi T et al conducted a population-based case-control study and found that hormonal factors associated with greater exposure to estrogen and/or progesterone may be associated with decreased risk for gastric cancer.^{5,7}
- Socio economic status: - Maximum patients (82%) were in low socioeconomic group, while 18% were in middle class.

Relation between stomach cancer and social class was analyzed by Lawrence Jr W and he revealed increasing stomach cancer incidence with decreasing socioeconomic status.⁶

Personal Habits And Its Relation With Carcinoma Stomach



Different studies trying to link gastric carcinoma with smoking, tobacco chewing and alcohol have come to different conclusions.

In this study 16% patients were smoker, 20% patients were alcoholic, 26% patients were addicted to tobacco chewing, 12% patients were addicted to more than one substance and 14% patients were teetotaler.

In this study smoking, alcohol & tobacco chewing have not emerged as risk factor.⁹

Blood-group distribution: - In this study there were 29% patients who were having blood group A positive, but 32% patients belonged to blood group O, rest patients were distributed in other blood groups.¹⁰

Dietary Risk Factors

Consumption of salted foods, dry fish, smoked foods, spicy foods, well water has been considered as risk for carcinoma stomach in different studies.

Based on the above findings' questionnaire were prepared and information gathered from the cases for this study. In this study there were 39% patients whose dietary factors were increasing the risk while 61% do not used to consume factors which are supposed to increase the risk.

The present study revealed no consistent opinion in regard to dietary factors.

Site Distribution:

- In this study 2/3rd of the patients was having growth in antro-pyloric region, 5% patients were having complete involvement of stomach and 8% patients were having involvement of gastro-esophageal junction and cardia.
- Comparing cardia and non-cardia growth 8% were having cardia growth while 92% were having non-cardia growth.
- Gross and Histological Morphology of Tumor: -
- In this study there were 36% patients who were having ulcerative growth, 32% patients were having fungating growth, 22% patients were having polypoidal growth and 10% patients were suffering from linitis plastica. These macroscopic findings are based on endoscopic, radiological and intra-operative findings

On histopathological examination there were 95% patients who were suffering from Gastric adenocarcinoma.

Duration Of Symptoms Prior To Admission: -

Only 13% patients presented within 2 months of onset of symptoms. Maximum patients (36%) presented in the 3-5 months of illness. 20% patients were having symptoms for >1 year.

Because of the vague, nonspecific symptoms of gastric cancer, most patients used to present late.

Presence of GOO and Ascites in the study subjects: -

In this study 65% patients presented with features of gastric outlet obstruction. 34% patients presented with clinical ascites.

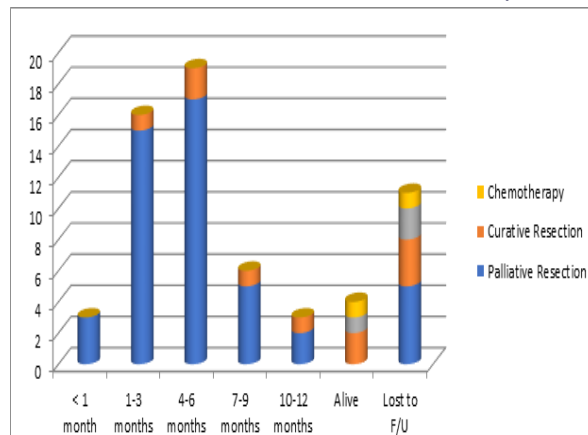
Management Of Gastric Carcinoma Patients Done In This Study: -

- In this study 76% patients underwent palliative surgeries while 16% patients were put on curative surgeries. 2 patients were put on neoadjuvant chemotherapy, while 3 patients refused treatment.
- Most patients of gastric cancer are in the advanced state of disease at the time of diagnosis therefore curative resection rate is low.

Sites Of Metastasis & Ln Involvement In The Current Study: -

- In this study 76% patients were having metastasis, out of which maximum patients were having metastasis to liver (40%) then to peritoneum (23%) and omentum (6.5%). 24% patients were not having any feature of metastasis.
- Out of 62 patients 84% patients were having lymph nodal involvement.
- Patients who underwent surgeries with palliative intent, 98% were having lymph nodal involvement.
- Patients who underwent curative resection 60% patients were having lymph nodal involvement while 40% patient's lymph nodes were not involved

Survival Of Carcinoma Stomach Patients In This Study



- In the present study 74% patients who underwent palliative resection survived up to 6 months duration. Only 15% patients survived >6 months while 11% were lost to follow-up.
- Out of 10 patients who underwent curative resection 3 patients survived up to 6 months and 2 patients survived >6 months. 2 patients are alive till the end of this study and 3 were lost to follow-up.

CONCLUSION:

The present study leads to inference that gastric cancer is more prevalent in 41-60 years age-group but no age is immune. It is more prevalent in males. Majority of the patients belonged to low socioeconomic status. However, there was no significant correlation between incidence and the dietary risk factors, personal habits of smoking/ alcohol/ tobacco chewing, blood groups and family history. The most common histological type is adenocarcinoma and most common site is distal stomach. Radical resection is by far the best modality available with a potential to offer cure to those, in whom the disease is detected in earlier stage.

The overall outlook for gastric cancer patients remains poor, since three fourths of patients have either physical or operative findings that eliminate the possibility of surgical cure.

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