International Journal of Health Sciences and Research
www.ijhsr.org ISSN: 2249-9571

Original Research Article

An Evaluation Based on Systemic Review of Etiological Factors of Gastric Cancer: A Two & Half Years Study

Ambika Ramani Baru[1], T. Sravanthi[2], K. Pavitra[3], K. Durga[4]

[1]Intern, [2]Under Graduate, Kakatiya Medical College, Warangal, Andhra Pradesh, India.
[3]Post graduate, [4]Prof. and HOD, Department of Pathology, Kakatiya Medical College, Warangal, Andhra Pradesh.

Corresponding Author: K. Durga

Received: 19/06//2014 *Revised: 09/07/2014* *Accepted: 18/07/2014*

ABSTRACT

Introduction: Gastric cancer was the leading cause of cancer. A marked decrease in its incidence has been observed, because of increased use of refrigeration and increased use of antibiotics. Second most common site of cancer occurrence worldwide. Third most common cancer in South India. Adenocarcinomas account for more than 90% of gastric cancers.
Aim of the study: To evaluate the effect of lifestyle habits and dietary factors in causation of Gastric cancer in patients attending Mahatma Gandhi Memorial Hospital, Warangal, Andhra Pradesh.To create awareness regarding THE RISK FACTORS of this entity.
Material and methods: A hospital based study was conducted from March 2012 to July 2012 including 2yrs retrospective cases from July 2010 in Mahatma Gandhi Memorial Hospital, Warangal, Andhra Pradesh.97 histologically confirmed cases of adenocarcinoma of stomach were studied. Patients were interviewed using a structured questionnaire.
Results: Out of 97 cases majority were in the age group 60-69 yrs 50 (51.5 %)and lowest affected age group was of 40-49 yrs 30(30.9%). Male preponderance 57(58.6%) than females 40(41.2%) . 50((51.5%)presented with history of alcohol ,Smoking: 9 (9.2%) and Tobacco chewing:11 (11.3%). 24 out of the 97 cases (25%) have given a history of chronic gastric acidity. Only one case has reported stomach cancer in the family (brother).Combined risk factors:Alcoholic + Non vegetarian diet: 16 (18%),Smoking + Non vegetarian diet: 14 (15.7%),Alcoholic +Smoking + Non vegetarian diet: 26 (29%) high intake of pickled and spicy food, dried fish, smoked and fried food.
Conclusion: Gastric cancer is a disease of old age with around 50% of the patients presenting after the age of 60yrs. It has a male preponderance with a ratio of 2:1. There is a definite correlation between combined intake of non vegetarian food, alcohol and smoking. In our study we could not find the correlation with blood group A. In order to bring awareness among the relatives of the patients we have explained to them the risk factors. Advice was given about the dietary habits and cessation of addictions.

***Key words**:* Gastric cancer, Risk factors, old age.

INTRODUCTION

Gastric cancer was the most common and most lethal cancer in the world during most of the 20th century. Gastric cancer still ranks as the fourth most common cancer and the second most frequent cause of cancer

deaths, accounting for 10.4% of cancer deaths worldwide. [1] Stomach cancer is the second-most common cancer among men and third-most among females in Asia and worldwide. [2] The symptoms and signs of the stomach cancer are often reported late when the disease is already in advanced stages and 5-year survival is less than 30% in developed countries and around 20% in developing countries. [3]

H. pylori is a cause of stomach cancer in humans, the International Agency for Research on Cancer (IARC) state this is a major risk factor for stomach cancer, and risk increases with the extent of the atrophy.[4,5] Heavy alcohol consumption may increase risk. [6] Smoking increases the risk both cardia and non-cardia stomach cancer. [7] High intake of any pickled food increases risk by 32–56%. [8]

It has been estimated that 1–3% of stomach cancers occur as a result of inherited stomach cancer predisposition syndromes. [8] Other risk factors : Previous stomach surgery,Pernicious anemia,Menetrier's disease,Blood group type A,Stomach lymphoma ,Stomach polyps, Ebstein barr virus infection.

Aims and Objectives

1. To evaluate the effect of lifestyle habits and dietary factors in causation of Gastric cancer in patients attending Mahatma Gandhi Memorial Hospital, Warangal, Andhra Pradesh.
2. To create awareness regarding THE RISK FACTORS of this entity.

MATERIALS AND METHODS

A hospital based study was conducted from March 2012 to July 2012 including 2yrs retrospective cases from July 2010 in Mahatma Gandhi Memorial Hospital, Warangal, Andhra Pradesh.97 histologically confirmed cases of adenocarcinoma of stomach were studied. Patients were interviewed using a structured questionnaire.

Statistical analysis: Odds ratio in the presence of a particular factor was used to measure the strength of association and were presented with 95% confidence intervals (CI)

- Variables with p value <0.2 were subjected to multivariate analysis using multi logistic regression analysis
- The statistical package for social sciences version 11.0 (SPSS Inc, Chicago, IL, USA) was used for the analysis.

RESULTS

Age: Out of 97 cases majority were in the age group 60-69 yrs - 47 (48.5 %),50-59yrs - 32 (33%) ,40-49 yrs 8 (8.2%) ,30-39yrs,10(10.3%)

Our study showed male preponderance 57(58.6%) than females 40(41.2%).

Domiciliary state: Rural area – 63 (65%),Urban area – 34 (35%).

History of chronic gastritis and gastric acidity – 24 cases (25%).Positive Family history of gastric carcinoma was seen in one case where the brother was diagnosed with gastric cancer earlier.

Dietary factors:

Non vegetarian diet (mutton, chicken, liver, beef, pork) – 89 (92%),Vegetarian diet - 8 (8%), Intake of fresh fruits > 3 times weekly – 12 (12%), Intake of pickled foods > 3 times weekly -92 (95%).

Personal habits and life style:

Alcohol-out of 97 cases 50 (51.5%) presented with history of alcohol, Smoking: 9 (9.2%) & Tobacco chewing:11 out of 97 cases(11.3%)

Combined risk factors:

Alcoholic + Non vegetarian diet: 16 (18%), Smoking + Non vegetarian diet: 14

(15.7%), Alcoholic +Smoking + Non vegetarian diet: 26 (29%)

Blood group –could be obtained in only 45 patients.

Blood group	No of patients	%
A	08	18
B	10	22
AB	12	27
O	15	33

Among the various factors analysed smoking (15.136;p<0.01) and alcohol consumption were found to be significantly associated (5.966 p<0.05) with gastric cancer.

DISCUSSION

Stomach cancer is the second most common cancer among men and third most among females in Asia and worldwide. [9] The gastric cancer rates show marked geographical variation, with high rich areas in Japan, China, Eastern Europe, and certain countries in Latin America.

Several factors are suspected to play a role in gastriccarcinogenesis which include diet, genetic factors, and infectious agents. In this study we evaluated the association between few epidemiological factors and gastric cancer risk.

In India the number of new stomach cancer cases in 2001 was estimated to be approximately 35,675 and 23,785 in males (66.4%) 11,890 in females(33.6%).

We have included 97 gastric cancer patients and 100 healthy age and sex matched controls in the study. Out of 97 cases, 57 were males (67%) and 40 females (33%).the male to female ratio is 1.425 :1which is in correlation with study conducted by Affridi 1.5:1. [10] Most cases of gastric cancer in our study were seen in age group above 60 years (51%).

Globally tobacco smoking has been indicated as a risk factor for gastric cancer in case control and cohort studies. [11,12] In India not only tobacco smoking but also tobacco chewing is highly prevalent. In our study 9(9.2%) were tobacco smokers with an odd's ratio(OR) of 1.2, as compared to cancer institute Chennai OR 3.2, and TMH Mumbai OR 0.9. [11,13] Cigarette smoke contains 19 known chemical carcinogens and 2radioactive carcinogens along with nicotine which are ample for developing gastric cancer.

Increased risk was also observed among the tobacco chewers. [14] In our study 11% of cases were tobacco chewers who regularly used to chewed tobacco for a period of more than 3 yrs, as compared to cancer institute Chennai OR 1.4, and TMH OR 1.03. [11,13]

Literature suggests that alcohol may be carcinogenic to the esophagus and cardia cancer but not distal gastric cancer. In a study conducted in Mumbai, alcohol intake did not emerge as a risk factor for gastric cancer with and OR 1.0. [15] In our study alcohol consumption was noted in 51.5% of cases with an OR 1.6, as compared to Chennai OR 1.4. Heavy alcohol intake can induce chronic gastritis, which is known to be a predisposing factor for stomach cancer. Alcohol might also increase stomach cancer risk by inducing alterations in gastric juice acidity, and some alcoholic beverages may be contaminated with carcinogenic substances like N-nitrosodimethylamine in large amounts and this may be an important factor for the high risk of gastric cancer associated with alcohol consumption. [16]

Diet plays a major role in gastric carcinogenesis. Global literature suggest that none or low starch vegetables including green yellow vegetables, garlic and onion, and fruits are considered as probable protective factors. [17,18] Pickled food , high rice intake, spicy food especially consumption, consumption of high temperatures food smoked dried salted meat, and consumption of dried salted fish have emerged as significant dietary risk factors. [13,15,19] In our study non vegetarian diet was seen in 92% of cases, and was the

most commonly associated dietary factor with cancer stomach.

In our study the blood group of all the cases registered could not be obtained, but out of 45 cases, where blood group was also recorded 12 cases i.e. 33% belonged to blood group O and no significant correlation with blood group A i.e 18% cases, though other studies have found a significant correlation.

H. pylori have been postulated as one of the risk factors for stomach cancer. An association of the infection with gastritis's and gastric ulcer, precursors of stomach cancer has been reported. [20] In our study chronic gastritis with gastric acidity was seen in 24 out of 97 cases (i.e. 25%), but none were proved to be due to H. pylori infection.

CONCLUSION

Gastric cancer is a disease of old age with around 50% of the patients presenting after the age of 60yrs. It has a male preponderance with a ratio of 2:1. There is a definite correlation between combined intake of non vegetarian food, alcohol and smoking. In our study we could not find the correlation with blood group A. In order to bring awareness among the relatives of the patients we have explained to them the risk factors. Advice was given about the dietary habits and cessation of addictions.

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How to cite this article: Baru AR, Sravanthi T, Pavitra K et. al. An evaluation based on systemic review of etiological factors of gastric cancer: a two & half years study. Int J Health Sci Res. 2014;4(8):54-58.

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