

PROSPECTIVE STUDY OF CANCER STOMACH IN SOUTH KASHMIR: A SINGLE INSTITUTE BASED STUDY

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ABSTRACT

Background: Cancer stomach is one the most common cancer which is progressively increasing not in the west but in the India especially Kashmir. It mostly involves the south Kashmir than North. Gastric cancer is usually diagnosed in the sixth and seventh decade of life, although it may also be found in younger patients. Diets rich in salted, smoked or poorly preserved foods are associated with increased risk of cancer stomach, whereas diets rich in fruits and vegetables are associated with decreased risk. Foods rich in nitrates, nitrites and secondary amines can combine to N-nitro-compounds which induce gastric tumors in animals. Smokers have 1.5 to 3.0 fold increased risk of cancer stomach. Alcoholics also have an increased risk of developing this disease.

Methods: This is a single institute prospective study where a total of 940 patients who hail from Southern Kashmir were entertained and had histological documentation of gastric cancer. All these patients were evaluated and segregated on the basis of clinical symptomatology, dietary habits, age and sex, features on upper GI Endoscopy and distribution of cancer stomach in south Kashmir as per districts.

Results: Heart burn and pain was the most common clinical symptom with 94% and 85% involvement respectively. About 100% cases used to have dried vegetables which were followed by smoked food 70% and pickled food in 80%. Male population was involved involving 67% and maximum age was in 5 to 6 decade. Polypoid growth in 60% cases on EGD. Maximum population involved south Kashmir out of whole Kashmir valley with maximum prevalence in District Pulwama and least in Kulgam.

Conclusion: The incidence of cancer stomach is in rise in Kashmir with maximum preponderance in South Kashmir which is most likely due less awareness, deficient mass screening and excessive use of dried vegetables, smoked food and pickles.

Keywords: Malignancy, Billroth II, Dysphagia, Malena

INTRODUCTION

Cancer stomach is the fourth most common cancer worldwide and second most common cause of cancer related deaths. The change in incidence is due to variation in food habits and culture (Medina-Franco H et al 2000). Kashmir has a high prevalence of cancer stomach and it is said to increase by 40% as compared to other metropolitan cities as per Indian registries across India (Rasool *et al.*, 2012). Incidence in Kashmir among males is 36.7/lac /year, and among females is 9.9/lac/per. The incidence rate for gastric cancer in Anantnag (Southern District) is 4.1 to 5.4 times higher in males and 1.2 to 2 times higher in females than those for Kupwara (Northern District) (Rao *et al.*, 1998). Gastric cancer in the west and USA originated in the distal stomach, recently there has been a steady rise in the incidence of proximal stomach and GE junction, whereas the incidence of distal cancer has remained largely unchanged or has decreased slightly (Primrose *et al.*, 2004). 95% of cancer stomach are adenocarcinomas, followed by squamous cell carcinomas, lymphomas (non Hodgkin), leiomyosarcomas, carcinoid tumors, gastrointestinal stomach tumours (GIST) (Mercer DW Sabiston 2004). Cancer stomach has variable etiological factors, of which pernicious anaemia accounts for 2.1 to 5%,⁶ followed by chronic atrophic gastritis, intestinal metaplasia, Patients with prior gastric surgery (drainage procedures) such as Billroth II, gastroenterostomy or pyloroplasty, hypertrophic gastropathy (menetier's disease) & chronic gastric

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ulcers are lesions most closely linked to an increase risk of gastric cancer (John N Primrose *et al.*, Bailey & Love short practice of surgery 24th edition 2004) . Diets rich in salted, smoked or poorly preserved foods are associated with increased risk of cancer stomach, whereas diets rich in fruits and vegetables are associated with decreased risk. Foods rich in nitrates, nitrites and secondary amines can combine to N-nitro-compounds which induce gastric tumors in animals. Smokers have 1.5 to 3.0 fold increased risk of cancer stomach. Alcoholics also have an increased risk of developing this disease (Fuchs *et al.*, 1995).

Role of oncogenes and tumor suppresser genes in the pathogenesis of gastric cancer has recently received considerable attention. Allelic deletions of the MCC, APC and P53 tumour suppressor gene have been reported in 33%, 34% and 45% of gastric cancers respectively. Gastric cancer rarely involves mutations in the ras oncogene. Patients with intestinal type cancers have an increased frequency of over expression of epidermal growth factor receptor, erbB-2 and erbB-3. Diffuse lesions have been linked to abnormalities of fibroblast growth factor system including the K-sam oncogene. The objective of our study is to determine the burden of cancer stomach in South Kashmir and to study the various predisposing factors, age and sex distribution and dietary association with malignancy.

MATERIALS AND METHODS

A prospective study was conducted in the Department of General And Minimal Invasive Surgery, Sher I Kashmir Institute of Medical Sciences, Soura Srinagar from June 2015 to July 2017. A total of 940 patients who hail from Southern Kashmir were entertained and had histological documentation of gastric cancer were analyzed. All those patients were included in this study that reported to the department of General Surgery with the diagnosis of gastric cancer and were either operated or were eligible for neo adjuvant treatment or were inoperable & had metastasis at presentation. Data was then analyzed for clinico-demographic information like age, sex, residence, dietary habits, tobacco consumption, association with H. Pylori, alcohol intake, presenting symptoms & signs. Patients were staged on the basis of Imaging and operative findings. Patients not subjected to surgery were staged with CECT scan & endo-ultrasound. TNM AJCC 2010 classification system was used for staging. Morphological variants, histological grades of differentiation (As depicted by the pathologist-Bormann's or Laurens) and location of tumor were other parameters which were analyzed. Patients with histologies of lymphoma, GIST & melanoma were excluded from the study

RESULTS AND DISCUSSION

In our study none of the patients presented with Gastric cancer between ages of 0-20 years. Only 2 patients presented with Ca stomach b/w age of 21-30 years. Maximum no of patients (378) belonged to age group of 50-60 years [Table 1]. From 940 total cases investigated, Heart burn was the commonest symptom present in 880(94%) followed by epigastric pain present in 795 (85%), loss of appetite present in 654 (70%), 66% patients presented with weight loss, dysphagia was presented in 1520 (15%), melena in 290 (30%) and haematemesis in 1533 (16%), pallor presented with (81%) [Table2]. In our study of 940 (100%) patients who take dried foods presented with gastric Cancer, Smoked food involves 660 (70%), Pickled foods involves 755 (80%), Salted tea involves 900 (95%), meat consumption involves 940 (100%), smoking involves 540 (57%), alcoholism involves 1660 (17%) [Table3]. 63.36 patients in our study reported from south Kashmir. As far as south Kashmir is concerned, 289 patients were from Pulwama, 277 patients from Shopian, 268 patients from Anantnag and 106 patients from Kulgam [Table 4]. On upper GI Endoscopy Polypoid growth was present in 570 (60%) followed by ulcerative growth 360 (38%). Linitus plastica was present in 10 (2%) patients [Table 5].

Table 1: Showed age distribution in the study

Age in years	Cases	Males	Females
0-10	-	-	-
10-20	-	-	-
21-30	2	2	
31-40	83	52	31
41-50	222	170	52
51-60	378	243	135
61-70	180	110	70
71-80	65	48	17
81-90	10	7	3
TOTAL	940	632	308

Table 2: Showed clinical features

Clinical features	No. of patients	%age
1.Heart burn	880	94
2. Epigastric pain	795	85
3. loss of appetite	654	70
4.weight loss	625	66
5. Dysphagia	1520	15
6.Malena	290	30
7.Haemetemesis	1533	16
8.Pallor	810	88
9.Mass epigastric	330	35

Table 3: showed dietary habits of the patients

Type of food	No. of patients	%age
1.Dried food	940	100
2.Smoked food	660	70
3.Pickled food	755	80
4.Salted tea	900	95
5. Meat consumption	940	100
6.Smoking	540	57
7.Alcoholism	1660	17

Table 4: Showed District wise distribution of patients in south Kashmir Valley

Year	Shopian	Pulwama	Anantnag	Kulgam
2015	88	96	87	17
2016	93	95	90	34
2017	96	98	91	55
Total	277	289	268	106

Table 5: Showed macroscopic appearances of Tumor on UGI Endoscopy

Type of lesion	No. of patients	%age
Polypoidal	570	60
Ulcerative	360	38
Linitis plastica	10	2

DISCUSSION

Stomach cancer is the most common and leading cause of death in west with annual detection rate of approximately 25000/ year and death rate approximately 14000/year in America only (Gene *et al.*, 1997). Various factors have been put forwarded including increased intake of pickled and dried foods, increased intake of pickled and dried foods, use of preservatives like nitrites and nitrates, Long standing gastric ulcers especially those on lesser curvature. Helicobacter pylori associated ulcers and increased risk over time by as many as 6 times, exposure to chemical carcinogens like coat tar products, rubber products and asbestos, achlor hydria – these patients have 30% chance of developing stomach cancer rare genetic disease such as Plummer Vinson syndrome and Peutz- Jeghers syndrome with multiple ployyps have a higher risk of developing cancer. Patients with pernicious anemia are at higher risk for developing cancer stomach. Heart burn is the most common presentation followed by epigastric pain and others; highest incidence is found in between 50-60 years of age with more male preponderance. As per studies cancer stomach is more common in 60 years of age (Cassell Paul *et al.*, 1976). In our study 45% cases were less than 60 years of age at the time diagnosis with females being effected at younger age group as compared to male. 70% of females in our study were less than 60 years of age as compared to 26% males in the same age group. From the table 3, No patients presented with Gastric cancer between ages of 0-20 years. Only 2 patients presented with Ca stomach b/w age of 21-30 years. Maximum no of patients (378) belonged to age group of 50-60 years In our study male: female ratio was 2:1. The incidence of gastric cancer varies from region to region, as is clearly elucidated from table 5 that 63% of our patients belonged to South Kashmir with highest number of patients coming from Pulwama and Shopian belt. Only 13.38% patients reported from North Kashmir. The exact reason for this is not known. Factors like dietary habits and soil composition are believed to be responsible and need to be studied. A total 940 total cases were investigated, Heart burn was the commonest symptom present in 880 (94%) followed by epigastric pain present in 795 (85%), loss of appetite present in 654 (70%), 66% patients presented with weight loss, dysphagia was presented in 1520 (15%), Malena in 290 (30%) and haematemesis in 1533 (16%), 80% of patients were having clinically detected pallor and the high frequency can be due to advanced disease, bleeding and poor dietary habits, while as only 43% patients were reported anemic (Allum *et al.*, 1989). Diet has been the essential component while studying the cancer stomach incidence, as is ascertained from table 2, which shows that out of 940 (100%) patients who take dried foods presented with gastric Cancer, Smoked food involved 660 (70%), Pickled foods 755 (80%), Salted tea 900 (95%), meat consumption 940 (100%), smoking 540 (57%), and alcoholism involved 166 (17%).

In our study all the patients underwent diagnostic esophago-gastric duodenoscopy (EGD). Polypoid growth was seen in 60 % patients, ulcerative growth in 38% patients with linitus plastica in 2 % patients as is found in table in 4. This is in contrast to study conducted by Cassell *et al.*, (1976). In their study ulcerative lesion was seen in 51%, infiltrative lesion in 32% and polypoid lesion in 17% (Cassell Paul *et al.*, 1976).

CONCLUSION

It is clearly elucidated from the above study that the incidence of cancer stomach is in rise in Kashmir with maximum preponderance in South Kashmir. Studies are needed to know the factors responsible for

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higher incidence of cancer stomach in South Kashmir. Mass screening programme in the state by which early gastric cancer can be picked up which can improve the survival. Avoidance of dried food, pickles, smoked food items should be enacted upon with preponderance and information about their hazards.

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