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

Original Research Article

Gastric Cancer- Clinical Profile from a Single Center Experience in South India

Giri GV, Lakshmaiah. KC Govind Babu.K, Linu Abraham Jacob, Suresh Babu M.C, Lokanatha D, Suparna

Department of Medical Oncology, Kidwai Memorial Institute of Oncology, Bangalore, Karnataka, India

Corresponding Author: Giri GV

ABSTRACT

Gastric cancer is one of the major causes of mortality in South East Asian countries with India being no exception. We carried out this retrospective observational study to highlight the clinical profile of gastric cancer in south India as there is sporadic data regarding the same. This study was carried out at a tertiary care oncology center in South India and 52 patients of gastric adenocarcinoma confirmed histopathologically and by immunohistochemistry were studied from January 2012 to December 2014. The male to female ratio was 2.25:1. The main presenting symptoms were pain abdomen and loss of appetite. The stage wise distribution of the cohort was as follows –2 patients of stage 1, 12 patients of stage 2, 3 in stage 3 and 8 patients of metastatic disease (stage 4) . There were 21 patients who had locally advanced cancer at presentation. Histologically, all were adenocarcinoma, with 6 being signet ring and 7 poorly differentiated carcinoma. The treatment procured was as follows- 17patients were operated upon and 36 patients received chemotherapy. The regimens administered were as follows - ECF in 24 patients, Mc Donald's regime in 1 patient, DCF in 4 patients, Cisplatin +5 Fluorouracil+ Leucovorin in 3 patients, paclitaxel+carboplatin in 1 patient, FOLFOX in 1 and docetaxel +cisplatin in 2 patients. 5 patients didn't complete evaluation and received no treatment. Further studies are required to analyse the outcome of this dreaded malignancy in India.

Key words: Gastric cancer, clinical profile, gastric adenocarcinoma, south India.

INTRODUCTION

Gastric cancer is an aggressive malignancy with a dismal outcome. Gastric cancer is the fourth most common cancer in the world behind lung, breast, and colorectal cancers and the second leading cause of cancer death worldwide after lung cancer, [(1)] accounting for 736,000 deaths (9.7% of the total). Currently, gastric cancer is more common in Asia than in the United State of America (USA) or Europe. Notably, 42% of cases occur in China alone [(2)]

The incidence in India is found to be decreasing. The number of new gastric cancer cases is approximately 34,000 per annum, with a male predominance (male-to-female ratio, 2:1), although it remains as the second most common cause of cancer death in our population. [(2)] There are very few studies looking at the clinical profile and outcome from the sub- continent. Hence we undertook this retrospective observational study at a tertiary care cancer center in India to analyze these parameters.

METHODOLOGY

Fifty two patients who were diagnosed of gastric adenocarcinoma (histopathologically with immunohisto-chemistry) from January 2012 to December 2014 were included in the study. All patients underwent staging/ diagnostic investigations in the form of Computed tomography scan (CT) of abdomen and pelvis, esophagogastroduodenoscopy, chest x-ray and investigations prior to chemotherapy which included haemogram, comprehensive metabolic profile, HIV, HBsAg and anti HCV, electrocardiogram and echocardiogram.

Patients were stratified into resectable, locally advanced or metastatic based on CT criteria.

Patients who were potentially resectable but locally advanced were subjected to perioperative chemotherapy according to MAGIC trial. All patients who were resected upfront received adjuvant chemo radiation (Mc Donald regimen) or adjuvant chemotherapy.

Staging was done according to AJCC staging system post operatively.

RESULTS

Fifty two patients were studied. Median age of the study population was 55 years (26 to 78). The male to female ratio was 2.25:1. The main presenting symptoms were pain abdomen and loss of appetite. The stage wise distribution of the cohort was as follows –2 patients of stage 1, 12 patients of stage 2, 3 in stage 3 and 8 patients of metastatic disease (stage 4) . There were 21 patients who had locally advanced cancer at presentation. Histologically, all were adenocarcinoma, with 6 being signet ring and 7 poorly differentiated carcinoma. The treatment procured was as follows- 17patients were operated upon and 36 patients received chemotherapy. The regimens administered were as follows - ECF in 24 patients, Mc Donald's regime in 1 patient, DCF in 4 patients, Cisplatin +5 Fluorouracil+ Leucovorin in 3 patients, paclitaxel+carboplatin in 1 patient, FOLFOX in 1 and docetaxel +cisplatin in 2 patients. 5 patients didn't complete evaluation and received no treatment.

Table 1: Stage wise distribution of DFS in adjuvant and OS in metastatic (including range)

STAGE	NUMBER	MEDIAN AGE	M: F	SURGERY	CHEMO	RT
I	2	62	2 to 0	Radical and subtotal gastrectomy	None	none
II	12	55	8 to 4	12 patients- 1 subtotal, 8 distal, 1 total gastrectomy , THE in 2 patients	Adjuvant CF in subtotal, 5 ECF in distal, two distal – no chemotherapy, one distal –adjuvant ECF, ECF in total, NACT- ECF in 1 THE, no chemotherapy in the other	none
III	3	60	3 to 0	1 distal, 1 post radical and 1 THE	Mc Donald's in the 1st, no chemotherapy in the post radical & 1 ECF in THE	1 patient with Mc Donald's
IV	8	44	4 to 4	none	Palliative – 5 ECF, 1 DCF and 1 FOLFOX	none
Locally advanced	22	56	16 to 6	none	18 patients – 10 received ECF, 3 patients DCF, 2 patients CF, 1 patient Carboplatin+paclitaxel, 2 patients received docetaxel+cisplatin	

THE= Transhiatal esophagectomy; CF= cisplatin, 5-fluorouracil; ECF = epirubicin, cisplatin, 5-fluorouracil;NACT= neo-adjuvant chemotherapy; DCF = docetaxel, cisplatin, 5-fluorouracil

Table 2 – Comparison with other studies

Study	Median Age	M: F	Stage wise distribution	Symptoms	Surgery	Chemo	RT	DFS/ OS
Present study	55	2.25 to 1	stage 1- 2 (4.25%), stage 2- 12(25.53%), stage 3- 3(6.38%) , stage 4 – 8(17.02%), Locally advanced- 21(44.68%)		17 patients	36 received	1 with Mc donald's	
Barad AK*et al*2014 (3)	>60	2.16 to 1	Early stage- 7.6% and locally advanced – 62.7%	Abdominal pain (61.4%) and weight loss (59.5%),				
Shin A *et al* 2011(1)								The 5-year survival - 43.0% in males and 42.6% in females between 1993 and 1995 to 63.8% in males and 61.6% in females b/w 2004 & 2008
Jeong O*et al*2011(4)	59.2	2 to 1	IA - 50.4%, IB - 16.3%, II - 12.1%, IIIA - 7.2%, IIIB - 3.2%, IV - 10.8%		Most common- distal gastrectomy f/b Billroth I reconstruction			
Ahmed A*et al* 2011(5)	51	1.4 to 1	stage 1 – 0, stage 2- 5.6%, stage 3- 63.1%, stage 4- 31.3%		155 (86.6%) operated including gastric resection in 87 (56.1%). Subtotal gastrectomy in 50, 14 had partial &total gastrectomy in 23 (n=4)	57 (31.8%) patients including 38 that had gastric resection		MedianOS-13.6 months. Median OS after gastric resection was 15 months (95% CI; 7.7-20.4) comparedto6 months (95% CI; 2.1-7.3) following non-resection surgery (p< 0.01). Of the 25 patients that had curative resection 14(56.0%) were alive 5 years after surgery. Overall,70.1% that had gastrectomy survived one year while 49.4% and 21.8% survived 2 & 5years respectively.

DISCUSSION

Gastric cancer is the 4th most common incident cancer worldwide and has shown a decline in its incidence. In India, the incidence rate of gastric carcinoma is low compared to that in western countries, and the number of new gastric cancer cases is approximately 34,000, with a male predominance (male-to-female ratio, 2:1).Over the years, from 1982 to 2005, the incidence of gastric cancer has remained more or less stable (although increases/ decreases have been noted in some years) both in Chennai and in Bangalore, whereas, in Mumbai, the incidence has shown a decline from 7.1 to 4.9 per 100,000 during the same period. [(2)] Reasons for the remarkable worldwide decrease in incidence and mortality rates are not fully understood, but are thought to be due to decreased consumption of salted and preserved foods, increased availability of fresh fruits and vegetables, reduction in smoking, decreased prevalence of chronic H. pylori infection due to improved hygiene, use of antibiotics and increased screening activities. [(6)] Similar to trends of stomach cancer globally, Indian registries have also observed statistically

significant decreasing trend over the last 20-year period. [(7)] Although the incidence and mortality of gastric cancer are decreasing in most countries, the number of new cases and deaths from gastric cancer are expected to increase due to population aging. [(1)]

The study at our centre revealed clinical characteristics similar to other studies. The median age in our study was 55 years, similar to other studies wherein the median age is in the 6th decade. [(4,5)] The sex ratio in our study is 2.25 males for each female, this is at par with other studies where the incidence in males is twice as high as amongst females. [(1,5)]

The higher incidence in men in our centre could be due the higher tobacco and alcohol consumption seen amongst men than women in our communities. Our study had patients who presented predominantly with locally advanced (44%) and metastatic disease(17%). This was concordant with the Indian study [(3)] where 62.7% of the patients presented with locally advanced disease. The reason as to why our patients present an advanced stage is probably due to the lack of screening programmes and awareness which would help in early detection and an earlier stage at presentation, as seen in the Korean study. [(4)] The histology in our study was adenocarcinoma alone, similar to other studies.

Since our patients present at an advanced stage, most patients received chemotherapy and few were operated upon. The most common chemotherapeutic regimen used in our hospital was the epirubicin, cisplatin and 5- fluoro uracil (ECF) followed by Docetaxel, cisplatin and 5 Fluoro uracil (DCF) regime. The ECF regimen is used following the evidence of benefit of perioperative chemotherapy in those with locally advanced inoperable cancer as in the MAGIC trial. [(8)] The chemotherapy used in patients with metastatic cancer was mainly ECF, which was given in accordance with the evidence from the REAL 2 study [(9)] which revealed equivalent outcomes with all the 4 regimens administered (ECF, ECX, EOF, EOX).

The most common surgery performed was distal gastrectomy and was in those patients who presented with early stage, resectable gastric cancer. The outcomesseen in our centre were dismal, with many patients developing toxicities and having poor tolerance to standard regimens. Further studies are required to analyse the response and outcomes of our patients.

One of the limitations of our study included a poor follow up due to which the disease free survival and overall survival couldn't be calculated.

CONCLUSIONS

The clinical profile of gastric patients at our hospital revealed characteristics similar to other studies with the middle aged and the male gender more affected with the malignancy and with most presenting with advanced disease. The reason for poor outcomes with this malignancy could be due the poor nutrition, comorbidities and advanced presentation at diagnosis. Further studies need to be conducted to analyse response and survival outcomes in our patients.

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How to cite this article: Giri GV, Govind Babu KLKC, Jacob LA et.al. Gastric cancer- clinical profile from a single center experience in South India. Int J Health Sci Res. 2019; 9(12):305-309.

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