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Original Research Article

Clinical profile and treatment outcome in gastrointestinal cancer patients: a single-center experience in Kashmir valley, India

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ABSTRACT

Background: Gastrointestinal (GI) cancers are one of the common cancers and are associated with significant morbidity and mortality. The present study was conducted to evaluate the treatment outcome of GI cancer patients undergoing follow-up in the oncology OPD of a tertiary care hospital.
Methods: Cases previously treated for any GI cancer at one center and coming for follow-up to the hospital were enrolled. Treatment outcome was ascertained in these patients and its relationship with clinical and demographic characteristics of patients at diagnosis were analysed.
Results: A total of 68 cases of GI cancers were enrolled with a mean age of 57.44±8.3 years and of 39 (57.35%) were males. The most common site for cancers was oesophagus, stomach, Colo-rectal with 22,20 and 17 cases respectively. Stage II was the most common stage at presentation in 50% cases followed by Stage III in 32.35% of cases. There was significant association between stage at diagnosis with stage I disease at diagnosis significantly related to complete cure. Site of cancer, age and smoking history had no significant correlation with treatment outcome.
Conclusions: Diagnosis of GI cancers at early stage was associated with complete cure at follow up. This finding demonstrates the importance of early screening for GI cancers and the need to have robust screening guidelines and improving access to screening with highly valid tests particularly for individuals with high risk features.

Keywords: Cancer, GI, Follow up study, Stomach cancer

INTRODUCTION

Gastrointestinal (GI) cancer is a collective term that comprises of cancers that affect the digestive system including gastric cancer (GC), colorectal cancer (CRC), hepatocellular carcinoma (HCC), esophageal cancer (EC), and pancreatic cancer (PC).[1,2] These are one of the most common cancers in terms incidence rate and also in terms of cancer mortality. Out of the estimated 13.24 Lakh new annual cases in India, 2.54 lakh (19.2%) have their origin within the GI track.[3] In terms of deaths, GI cancers contribute to 2.11 lakh (24.83%) deaths out of the total 8.51 lakh annual deaths.[4] These figures have not included cancers of oral cavity/lips which are one of the most common causes in India, particularly in males.[5-7] This data suggests that GI cancers are more likely to cause deaths as these contribute to almost 1/4th of all cancer deaths in the country.[8] The most common GI cancers are CRC, stomach cancer, EC, liver cancer, gallbladder cancer, and PC.[9,10] Malignancies at these sites differ in histopathological types and also have varied prognostic outcome. Last decades have seen remarkable advances in cancer care with great improvement in survival if cancers are diagnosed early and treatment initiated at early stages.[11] Still GI cancers have poor outcome and lead to significant decrease in routine activities and quality of life. With the increased use of neo adjuvant management, focus has shifted on further improving survival and quality of life.[8] Still a large proportion of cases do not respond completely and there may be signs of residual disease, disease progression/ relapse after cure in some cases.[12] Treatment outcome is dependent on the combination of multiple factors ranging from age at diagnosis, site of GI cancer, histopathological type, stage at diagnosis, treatment

modality adopted and presence of comorbidities.[13] It is important that treated patients are followed up regularly to ascertain response to treatment and identify factors which are associated with poor outcome.[14] There is very limited data available on follow up of patients being treated for GI cancers in India and more so in Kashmir valley. Present study conducted to evaluate treatment outcome of GI cancer patients undergoing follow-up in oncology OPD of tertiary care hospital.

METHODS

Study setting

The study was conducted at Government Medical College, Anantnag, which is a tertiary care teaching hospital in the southern part of Kashmir valley, a landlocked valley in the northeast of main Himalayan range. The hospital provides tertiary care services and offers specialized services for cancer treatment ranging from surgical management, medical management and radiotherapy services.

Study design and period

The study was conducted between Jan-Dec 2020 and all patients with a previous history of having completed primary treatment for any GI malignancy at least 3 months before were included in the study. All patients who had been previously treated for any GI malignancy and with no cognitive impairment were included in the study. Subjects who did not possess records related to staging work up at diagnosis, histopathology reports, and/or records related to treatment received were excluded.

Information was collected using in depth personal interviews with the patients, record review of laboratory investigation and clinical records. The information collected was related to age, marital status, residence, smoking history, stage of malignancy at diagnosis, and cancer histopathological type. Histopathological diagnosis had been conducted in most of the cases in the same hospital or in accredited pathology labs in which case the slides were re-examined by a pathologist in the hospital. The current status was determined by trained oncologists using relevant investigations.

Inclusion criteria

The current status was categorized into four non overlapping categories and was categorized as (1) completely treated (if subjects at follow up had no evidence of loco-regional disease or distant metastasis), (2) stable disease/partial response (if subjects were categorized to be at same or decreased stage that at diagnosis but with evidence of residual disease and no evidence from records that the disease had completely resolved at any time, (3) progressive disease (if subjects had increased cancer staging at follow up in comparison to diagnosis and no evidence that the subject was disease free at any time from diagnosis and (4) recurrence (if there is evidence of a disease free state from diagnosis but the follow-up shows malignancy.

Ethical considerations

The study was approved by ethical review committee of the institution and written informed consent was taken from all subjects for participation in the study. Names and any other identifying information was removed from the final analysis sheets.

Statistical methods

The data was collected in excel and analysed using Stata version 17. Descriptive statistics (Mean ± SD), Median (interquartile range), frequency (%) were used to depict the baseline profile of the study participants. The relationship of disease status at follow up with categorical variables was assessed using chi-square test whereas the association with continuous variables (age and duration of follow up in our case) was assessed using ANOVA.

RESULTS

A total of 68 individuals with a GI malignancy were included in the final analysis for the study. The baseline characteristics of participants are depicted in table 1. The mean age was 57.44±8.3 years and of 39 (57.35%) were males. The mean follow up period was 20.37±8.5 months. The most common sites for GI cancers were oesophagus 22, stomach 20, colo-rectal 17. Hepatobiliary cancers comprised of 6 cases and one case was of GIST. The most common stage at presentation was stage II followed by stage III which comprised of 34 (50%) and 22 (32.35%) cases respectively.

Table 2 depicts association of treatment outcome with selected patient characteristics at diagnosis and follow up. Significant association between stage at diagnosis with stage I disease at diagnosis significantly related to complete cure. Site of cancer, age and smoking history had no significant correlation with treatment outcome.

Table 1: Demographic and clinical profile of participants.

Variables	Value	N	Percentages (%)
Age (Years) (At diagnosis)	≤ 40	3	4.41
	41-50	19	27.94
	51-60	33	48.53
	≥ 61	13	19.12
Follow up period (Months)	Mean ± SD	20.37 ± 8.5	

Continued.

Variables	Value	N	
Gender	Male	39	57.35
	Female	29	42.65
Site of primary	Oesophagus	22	32.35
	Stomach	20	29.41
	Rectum	9	13.24
	Colon	8	11.76
	HCC	4	5.88
	GE junction	2	2.94
	Gall bladder	2	2.94
	GIST	1	1.47
Smoking status	Non smoker	39	57.35
	Current smoker	10	14.71
	Ex-smoker	19	27.94
Stage at diagnosis	Stage I	8	11.76
	Stage II	34	50.00
	Stage III	22	32.35
	Stage IV	4	5.88
Treatment modality	Surgery	47	69.12
	Radiotherapy	37	54.41
	chemotherapy	54	79.41
Status at last follow up	Complete response	33	48.53
	Partial response /stable disease	7	10.29
	Progression	19	27.94
	Recurrence	9	13.24

Table 2: Table depicting association of key characteristics with outcome.

Variables		Overall	Complete response	Partial response /stable disease	Progression	Recurrence	P value
Age (Years)	Mean ± SD	57.44±8.3	53.58	59.5	63.42	57.42	0.0942
Follow up period (Months)	Mean ± SD	20.37±8.5	32.7	13.2	10.4	25.2	0.0623
Gender, n (%)	Male	39	17	4	11	6	0.926
	Female	29	15	2	8	4	
Site	Oesophagus	22	9	1	8	4	0.764
	Stomach	20	11	2	5	2	
	Colon and rectum	17	10	2	3	2	
	Hepatobiliary	6	1	1	3	1	
	GE Junction	2	1	1	0	0	
	GIST	1	1	0	0	0	
Stage at diagnosis, n (%)	Stage I	8	7	0	0	1	0.013
	Stage II	34	19	3	8	4	
	Stage III	22	7	3	9	3	
	Stage IV	4	0	1	2	1	
Smoking history, n (%)	Non-smoker	39	23	4	8	4	0.232
	Current smoker	10	3	1	3	3	
	Ex-smoker	19	7	2	8	2	
Treatment modality, n (%)	Surgery	47	21	2	11	2	0.087
	Radiotherapy	37	7	3	6	3	
	Chemotherapy,	54	5	2	2	4	

DISCUSSION

This is one of the first comprehensive study on follow up of patients with a primary GI cancer in Kashmir valley. The present study aimed to identify factors that were correlated with a better treatment outcome among patients coming for follow-up to oncology OPD and/or radiotherapy department. The hospital has a well-developed cancer registry which is used to follow patients after specified intervals to assess treatment outcome.

The mean age of participants was 57.44±8.3 years and 57.35% subjects were males. Globally and in India, other studies have found a higher incidence of GI cancers among men, possibly due to a higher genetic predisposition and higher prevalence of risk factors among men.[15,16] The prevalence of intake of charcoaled meat, tobacco smoking and is higher in males than females which has been supported by multiple studies.[17-19] Smoking is an established risk factor for GI cancers and J and K has one of the highest prevalence for smoking. In addition, the dietary pattern is also different in Kashmir valley than the rest of the country with higher intake of red meat, intake of salted tea, and use of smoked food, all of which have previously been associated with GCs.[20] The most common age at diagnosis is more than 50 years which depicts that the age at presentation comparable to national as well as international estimates. Multiple other studies have estimated that GI cancers presents mostly after the age of 50 years and its incidence increases with advancing age. The age at diagnosis did not have any significant association with treatment outcome.[21,22]

The most common site for primary cancers in our study was oesophagus, followed by stomach, rectum and colon. Shakuntala et al in their study describing the GI cancers in India also concluded that the most common site for GI cancer in India is oesophagus followed by stomach and rectum.[7] A study based on hospital based cancer registry in Kashmir valley by Qurieshi et al reported stomach cancer to be most common followed by colorectal and then cancer oesophagus.[20] The difference may be on account of different study profile as our participants included only subjects coming for follow up and not only incident cases as was the case with the other study. It is possible that cases with faster disease progression and poor outcomes may not be included in our study due to lack of active follow-up.

Hepatobiliary cancers only comprised of six cases but other studies based on population based registers have estimated higher incidence for Hepatobiliary cancer.[23,24] The higher mortality and rapid progression in hepatobiliary cancers may be a reason for under representation of these cases in our study. The participants were managed using the approved hospital protocol based on staging and other patient characteristics which included a combination of surgical resection, adjuvant chemotherapy and adjuvant radiotherapy. Stage at diagnosis had a significant association with treatment outcome. Complete response was seen in 87.5%, 55.88%, 31.81% and 0% for stage I, II, III and IV respectively. This finding is consistent with multiple other studies that have found better outcome for early-stage GI cancers.[25,26] This finding demonstrates the importance of early screening for GI cancers and the need to have robust screening guidelines and improving access to screening with highly valid tests particularly for individuals with high risk features. 2021 US preventive service task force (USPSTF) guidelines advocate routine screening for CRCs from ages 45 to 75, and individualized consideration of screening ages 76 to 85.[27,28] There are no specific policy guidelines for other GI cancers in developed countries. screening for GI cancers is currently not part of the non-communicable disease screening program in India and only includes breast cancer, oral cavity cancers and cervical cancers which are top three sites for cancers in India overall.[29] In men, stomach, colorectal, and oesophagus cancer are the most common cancers after cancers of the oral cavity.[22,23] Target 3, 4 of sustainable development goals 2030 aspires to reduce premature mortality by 1/3rd from cardiovascular disease, cancer, diabetes or chronic respiratory disease. It is imperative to screen for GI cancers so that mortality from these can be reduced.

CONCLUSIONS

The treatment outcome of GI cancers presenting beyond stage I is poor which is a clinically important as most of the cases diagnosed currently report to health facilities in stage II and above. As GI cancers are one of the most common cancers particularly for males, there is need to have a tailored and practical screening policy so that eligible subject can be screened as per the guidelines. Keeping in view the rapidly changing lifestyle with increase in intake of processed foods, decreased fruit intake and sedentary lifestyle, we expect further increase in burden of cancers.

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