ORIGINAL ARTICLE

Gastrointestinal Malignancy in Sudanese Patients: Where we are?

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ABSTRACT

Background: Gastrointestinal cancers areleading cause of cancer related death worldwide (after lung cancer).There is significant geographic variation in gastrointestinal cancers. The aim of this study is to identify variety, pattern of presentation, management and hospital mortality of gastrointestinal malignancy in Sudanese patients. **Methods:** Data from 337 patients with GI malignancies were collected prospectively and retrospectively, it is cross section hospital based study. It included all patient with GI malignancy except those with thoracic oesophageal cancer and it was conducted in two years' period, data collected, and analysed using Statistical package of social science(v 19.0), frequencies, descriptive statistic and test of significant Chi squire, t test were used when appropriate and P value was considered significant if < 0.05. **Result:** The mean age was 50.5 years (SD+/- 10.5), male to female ratio was 1.3:1, there were 28% (n=97) live in Khartoum and 22.8% (n=77) were come from centre and west of Sudan, about 12.8 % (n=43) from east Sudan, and 11% (n=37) from north Sudan while 1.8 % (n=6) were live in South Sudan. The commonest GI malignancy in our study was pancreatic cancer followed by colonic then gastric malignancies in 36.5%, 26.7% and 16% respectively, the majority of pancreatic cancer (58%) from west Sudan and 31% from north Sudan. **Conclusion:** The commonest GI malignancy in our study was pancreatic cancer, followed by colonic &gastric malignancies. Khartoum and west of Sudan were common states for pancreatic and colonic cancer. Colonic cancer tends to occur in young age group.

Key words: Gastrointestinal, cancer, GI malignancy, Pancreatic, africa, Sudan.

INTRODUCTION

Gastrointestinal (GI) cancers are leading cause of cancer related death worldwide (after lung cancer). The diagnosis often requires endoscopy and biopsy of suspicious tissue. The treatment depends on the location of the tumour, as well as the type of cancer cell and whether it metastasise to other organs of the body, these factors also determine the prognosis. Overall, GI tract and the accessory organs of digestion (pancreas, liver, and gall bladder) are responsible for more cancers and more deaths from cancer than any other system in the body. There is significant geographic variation in gastrointestinal cancers.

PATIENTS AND METHODS

Data from 337patients with GI malignancies were collected prospectively and retrospectively, it is cross sectional,

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descriptive hospital based study, it included all patients with GI malignancies in Ibn Sina Specialized Hospital, those patients with thoracic oesophageal cancer were excluded, follow up of patients were done in clinic. Data analysed used computer program statistical package of social sciences (SPSS) version 23, frequencies, descriptive statistic and test of significant Chi squire, t test were used when appropriate. The P value was considered significant if < 0.05.

RESULT

The mean age was 50.5 years (SD+/- 10.5), and male to female ratio was 1.3:1, there were 28% (n=97) live in Khartoum and 22.8% (n=77) were come from centre and west of Sudan, about 12.8 % (n=43) from east Sudan, and 11% (n=37) from north Sudan while 1.8 % (n=6) were live in south Sudan .The commonest GI malignancy in our study was pancreatic cancer followed by colonic then gastric malignancies which comprises 36.5%, 26.7% and 16% respectively, the majority of them (58%) from west Sudan and 31% from north Sudan,the rest of malignancies were less than 10% for each.

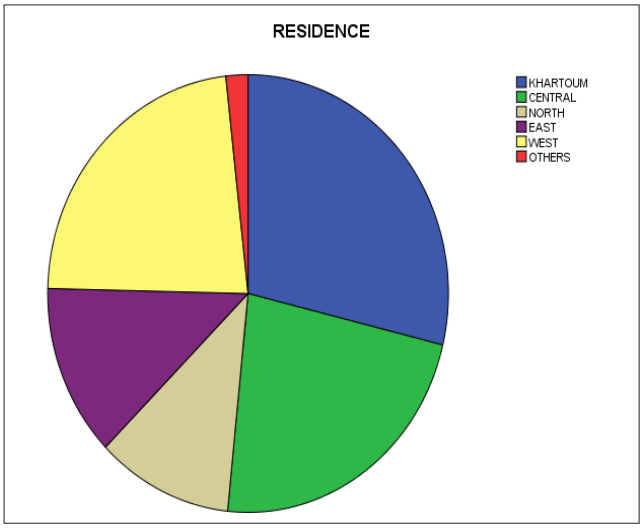

Figure 1: Showed Distribution of Residence

Table 1. The frequency and percentage of GI malignancies

Type of GI Malignancy	Frequency	Percent
GASTROEOSOPHAGEAL	4	1.2%
GASTRIC	54	16.0%
SMALL BOWEL	15	4.5%
COLONIC	90	26.7%
GB	8	2.4%
CHLANGIOCARCINOMA	16	4.7%
GIST	11	3.3%
PANCREATIC	123	36.5%
HCC	5	1.5%
Others	11	3.3%
TOTAL	337	100.0%

Table 2.The crosstab between the type of GI malignancy and the age groups

	AGE GROUPS				TOTAL
Type of GI malignancy	< 20	21-40	41-60	> 60	
GASTROOESOPHAGEAL	00	02	01	01	04
	00.0%	50.0%	25.0%	25.0%	100.0%
GASTRIC	01	11	19	23	54
	01.9%	20.4%	35.2%	42.6%	100.0%
SMALL BOWEL	01	03	04	07	15
	06.7%	20.0%	26.7%	46.7%	100.0%
COLONIC	01	26	42	21	90
	01.1%	28.9%	46.7%	23.3%	100.0%
GB	00	00	05	03	08
	00.0%	00.0%	62.5%	37.5%	100.0%
CHLANGIOCARCINOMA	00	03	07	06	16
	00.0%	18.8%	43.8%	37.5%	100.0%
GIST	01	02	04	04	11
	09.1%	18.2%	36.4%	36.4%	100.0%
PANCREATIC	00	10	55	58	123
	00.0%	08.1%	44.7%	47.2%	100.0%
HCC	00	00	02	03	05
	00.0%	00.0%	40.0%	60.0%	100.0%
Total	**04**	57	**139**	**126**	**326**
	01.2%	17.5%	**42.6%**	**38.7%**	**100.0%**

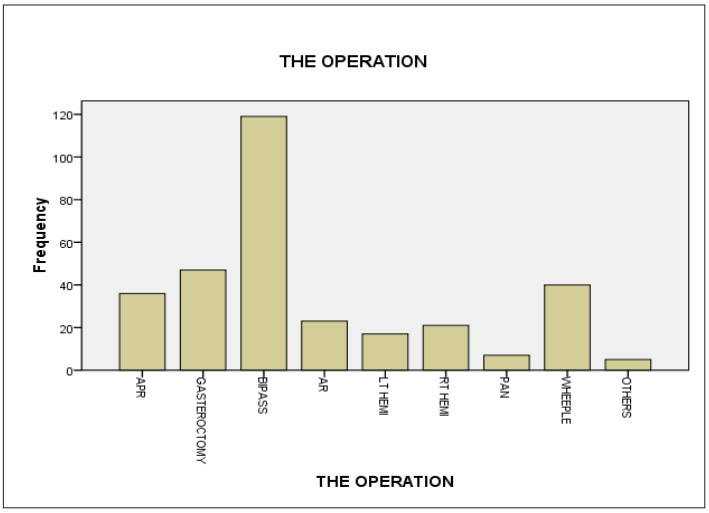

Figure 2: Showed Frequency of Types of Operations

Correlation between the type of malignancy and the gender was insignificant in our study, where, the males were generally more than the females, but reversed in gall bladder and pancreatic malignancies and equal in cholangiocarcinoma.

The common presentation was abdominal pain, dyspepsia& loss of appetite (Table 3)

Table 1. The frequency and percentage of GI malignancies.

Complain	% (n)
abdominal pain,	62.9% (n=212)
vomiting	78.9% (n=266),
nausea	11% (n=37),
jaundice	40.7% (n=137),
heartburn	18.4% (n=62),
dysphagia	1.2% (n=4)
dyspepsia	77.7% (n=262)
early satiety	16.3% (n=55)
abdominal distension Change	10.7% (n=36)
in bowel habit	23.7% (n=80)
loss of appetite	50.7% (n=171)
loss of weight	77.2% (n=260),
hematemesis	3.9% (n=13)
melena	11.9% (n=40),
mucous discharge	10.7% (36)
fresh rectal bleeding	17.5% (n=59).

The relation between the types of GI malignancy and the presenting complain showed that abdominal pain was presentin more than 80% in gastric, small bowel and gall bladder malignancies, and not uncommon in gastro-oesophageal, HCC, Colon, cholangiocarcinoma and pancreatic malignancies (*P* value = 0.0001). Vomiting was present in Gastric, small bowel and GIST in 61%, 46%, 36.4% respectively, and less than 10% in the other GI malignancies (*P* value = 0.0001). Jaundice was present in HCC, cholangiocarcinoma and pancreatic malignancies in 100%, 93.8%, 86.2% of the patients respectively as a presenting complain and only few patients of GIST, gastric and colonic malignancies had jaundice.(*P* value = 0.0001), melena was the presenting symptoms in 20% of those patients with GIST, small bowel and colonic malignancies (*P* value = 0.0001). Other symptoms like early satiety was only seen in Gastric malignancies, as well as, change in bowel habits and rectal mucous discharge in lower GI and colonic malignancies (*P* value = 0.003). There was no statisticalcorrelation between the type of GI malignancy and chronic illnesses like diabetes. Family history of GI malignancy was found only in patients with colonic malignancy (0.3%). There was 2.1% of patients were smoker (*P* value = 0.041), 1.5% were alcoholic and1.5% were Snuffer.Clinically ascites was found in 65 patients (19.3%), and it common among those patients with HCC, Pancreatic and gastroesophageal malignancies (*P* value = 0.0001).Liver enzymes were highly deranged in more than half of the patients with GI malignancies 182 (54%) but, it was not statistically significant when correlated with the type of malignancy. Tumour markers (CEA, CA 19-9, AFP) were requested in three fourth of the patients. There is statistical significant correlation between tumour marker and one month mortality and morbidity (P value less than 0.05), there is statistical significant correlation between age and tumour marker andone month mortality and morbidity (P value less than 0.05), there is statistical significant correlation between lung metastasis and tumour marker and one month mortality and morbidity (P value less than 0.05), there is statistical significant correlation between liver enzymes and tumour marker and one month mortality and morbidity (P value less than 0.05), there is statistical significant correlation between tumour markers and type of cancer (P value less than 0.05), there is statistical significant correlation between type of cancer, age, liver enzyme derangement and lung metastasis (P value less than 0.05). Histopathological diagnosis of all patients were variable between adenocarcinoma, lymphoma, GIST and others (retroperitoneal sarcomas), and among all patients CT abdomen was as sensitive as 96.7 %(n=326) to show a mass. Due to late presentation of pancreatic cancer; bypass surgery was the most common procedure in 119 (35.3%) patients. Gastrectomy was the second procedure to be done for malignancy in our hospital, in 47 (14.9%), followed by colonic surgery like abdominoperineal resection (APR) 11.4%, anterior resection (AR) 7.4% and Right hemicolectomy 6.7%while Whipple's operation was done for 12.7%.Neoadjuvant chemotherapy was provided for 4 patients, 2 of them showed regression. Adjuvant therapy was delivered for 286 patients (84,9%).There is statistical significant correlation between type of cancer and the effect of neoadjuvant chemotherapy and/or radiotherapy especially for those with colonic malignancy (P value less than 0.05).One month follow up showed that about 57.3 %(n=193) were improved, 29.4%(n=99) were static, 5.3%(n=18) were deteriorated and 3.3%(n=11) were died and no available data for the remaining one.

DISCUSSION

A study done in by Intisar et al on the period 2009-2010 in Sudan showed that GI cancer was made up 21,1% of all reported primary cancer sites during 2009–2010 [6]. It showed that nearly 28% (n=97) were live in Khartoum and 22.8% (n=77) came from centre and west of Sudan. In our study most common GI cancers was pancreatic cancer (36.5%) Which is against international literature (colorectal and gastric cancer came first [1, 2], also against local literature (oesophageal,

colonic and gastric came first [5] and international literature, as in less developed regions have low rates of pancreatic cancer [17], it is relatively rare in Africa and Asia [18]. The majority of pancreatic cancer 58% from west Sudan and 31% from north Sudan. Unfortunately, pancreatic cancer in our study was associated with greater morbidity and mortality and they presented late, in comparison to study done by Feriel Sellam et al which showed pancreatic cancer characterized as a highly aggressive disease with dismal overall prognosis and an incidence rate equalling mortality rate [15,16,17]. Colonic cancer is the second most common GI malignancy in our study (26.7%), this is the same local literature in which colonic cancer was 33 % (after oesophageal 37%)[5], but against international literature in which colonic cancer is most common GI malignancy [1,8].Common clinical presentation in our study for patients with colonic cancer was fresh rectal bleeding (60%) and chronic abdominal pain (62%), this is going with international literature, 60% of patients came with fresh rectal bleeding [10]. In comparison with local study done in Ibn specialized hospital by Saggad et al showed that fresh rectal bleeding is common presenting symptoms [11]. In international literature, change in bowel habits occur in 43% of patients, while in our study change in bowel habits occur in 23% of patients. [10]

In our study a 28.9% of patients with colonic cancer occur in less than 40 years' age and one patient age was 16 years old. In comparison with local similar study was conducted by A A Abdalla, M T Musa et alshowed that, two hundred and seventy seven patients showed that 17.4% of them were below the age of thirty[12] which is much higher than that mentioned in the international literature [13]. Worldwide,gastric cancer is fifth most common cancer and second most common GI cancer after colonic cancer and leading cause of cancer related death after lung cancer [1-2], while in our study, gastric cancer was the third most common GI cancer after pancreatic and colonic cancer (16%), in compare with local study conducted, first results from the Cancer Registry. Common affected age group in our study for gastric cancer were above 60 years (25%) which is nearly like international literature [3-4]. Another study done on in Ibn sina specialized hospital by al saggad et al showed that out of 53 patients,the peak frequency was at the age group 55-70 years.[7] Cholangiocarcinoma were 4.7% (n=16) in our study, while in international literature was average incidence is one case per 100,000 persons per year. A study by Singal et al found that the frequency of intrahepatic cholangiocarcinoma has increased over time and is most commonly noted in women older than 60 years [20]. Other incidence in most Western countries ranges from 2 to 6 cases per 100,000 people per year. The highest annual incidences are in Japan is 5.5 cases per 100,000 people, and in Israel is 7.3 cases per 100,000 people [30]. GIST tumour in our study were 3.3% (n=11)and it is like the local literature [5,7].

Over all hospital mortality in our study were 3.4%. Colonic cancer has better prognosis and pancreatic cancer has worse prognosis. Gastric cancer is the third commonest cause of cancer related mortality which accounts 8.8% of cancer mortality [1-2]. Colonic cancer is the third most common cause of cancer death in the United States [9]. In comparison to other study showed Postoperative morbidity was 38 %[14] and in our study post-operative morbidity was 29%.Gallbladder cancer survival is nearly 6 months, while 5-year survival rate is only 5 %[21], while in our study hospital mortality was 15%. Another study done by Abdo et al showed that those 92% of patients with HCC were Okuda stage II and III, with overall mean survival of five months [19].

CONCLUSION

The commonest GI malignancy in our study was pancreatic cancer and majority of them from west Sudan and north Sudan,it followed by colonic and gastric malignancies. Colonic cancer tends to occur in young age group below age of 40. Pancreatic cancer associated with greater morbidity and presented late with advance malignancy.

LIMITATION

It is a hospital based study

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