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Presentation and Management of Gastrointestinal Stromal Tumour (GIST) Among Sudanese Patients from April 2015 to April 2019

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ABSTRACT

Background: Gastrointestinal stromal tumour is one of the common alimentary tract tumour and it have different anatomical site of occurrence; there are international data that are common to occur in the stomach but no local data about the common site in Sudanese patients and the presentation.

Objective: To asses presentation and management of gastrointestinal stromal tumour among Sudanese patients.

Methods: Prospective, retrospective cross-sectional study, hospital based. The study was conducted to Ibnsina hospital (gastroenterology centre) in Khartoum state during the period from April 2015 to April 2019. The study sample was determines as total coverage of the study period. The eligible cases fulfilled the inclusion criteria was 62 patients. Data was collected using a constructed structure questionnaire.

Results: In this study the mean age was 53.3±14.3 years. Male to female ratio was 2.4:1 Regarding characteristics of abdominal mass, the study revealed that all masses were epigastric in site. On the other hand our study showed that the mean size was 18.8±19.7 (cm). In patients with GIST the shape of abdominal mass reported in 88.5 %(n=23), irregular 11.5 %(n=3), regular surface 92.3 %(n=24), irregular 7.7 %(n=2). Firm 96.2 %(n=25) and hard 3.8 %(n=1). Motility 80.8 %(n=21) and immobility 19.2 %(n=2). Attached 11.5 %(n=3) not attached 88.5 %(n=23). The most common options of surgery were wedge resection 51.6 %(n=32), proximal gastrectomy 11.3 %(n=7), distal gastrectomy. The outcome of patients at postoperative 6 months FU was improvement 77.4 %(n=48), death 14.5 %(n=9) and recurrence 8.1 %(n=5).

Conclusion: Imatinib showed good response when used as neoadjuvent therapy to down size the tumour and also as adjuvant to prevent recurrent.

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Introduction

Gastrointestinal stromal tumours (GIST) are the most common type of mesenchymal tumours found in the gastrointestinal tract. GISTs have been defined as smooth gastrointestinal muscle tumors and have been called under various names and often misdiagnosed as leiomyomas, schwannomas and sarcomas [1].

They are typically defined as tumours whose behaviours are driven by mutations in the KIT gene or platelet-derived growth factor receptor alpha (PDGFRa) gene, and they may or may not stain positively for KIT. GISTs are thought to originate from GI pacemaker cells, the interstitial cells of Cajal (ICC), due to the presence of tyrosine kinase receptors within the tumour tissue. GISTs arise mainly from the stomach (60%) and the small intestine (30%) [1].

Five to ten percent of GISTs are located in the colon and rectum and the rest in the oesophagus. Microscopically, the majority of these tumours are composed of spindle or epithelioid cells and either morphology usually predominates (and mixed in some cases). Spindle cell or spindle cell-predominant GISTs usually show mutations in the c-kit gene, and they are positive immunohistochemically for c-kit (CD117) and can be effectively treated with imatinib mesylate. Epithelioid GISTs sometimes do not show c-kit mutations and do not express CD117 [1,2].

The distinctive feature of GIST is the mutation in the c-kit protooncogene leading to gain-of-function and subsequent cell proliferation (3-5). GISTs are rare, with relative annual incidence of 14.5 per million and prevalence of 129 per million [1].

Gastrointestinal stromal tumours may occur anywhere in the digestive tract, but are more frequently located in the stomach (60-70%) and midgut (25%) and less often in colon and rectum (5-10%). Extravisceral GIST occurs in less than 10% of patients, most

frequently in mesentery, intrabdominal, pelvis and retroperitoneal space [1]. Duodenal GISTs (dGIST) represent only 4-5% of all GISTs, but accounted for 6–21% of surgical resected ones [1].

The complex anatomy of the duodeno-pancreatic region can make their diagnosis and treatment extremely challenging. Anatomical closeness to noble structures (i.e., to the head of the pancreas, kidney and biliary structures) can lead to misdiagnosis and inappropriate management. Several factors complicate the management of GISTs such as the relative lack of experience, the ambiguous clinical manifestations that often mimic a wide range of clinical conditions, the anatomical complexity and the lack of consensus on treatment [1].

Methodology

Study Design: Analytical descriptive , hospital based study.

Study Area

The study was conducted to Ibnsina hospital (gastroenterology centre) in Khartoum state. Ibn Sina Hospital is a tertiary referral hospital focused on 3 specialties: Gastroenterology (GI), Nephrology-Urology, and Ear, Nose, Throat. The establishment of the GI unit at Ibn Sina Hospital was a cornerstone in the development of gastroenterology services in Sudan. The unit was accredited and designated as the NCGLD and most of the staff running the GI services in different regions of Sudan have been trained in this unit [3].

Duration of Study: It was carried out from April 2015 to April 2019

Results

The mean age was 53.3±14.3 years (Table 1). Male to female ratio was 2.4: 1. Males were 71% (n=44) of the patients and females were 29% (n=18) of the patients (Figure 1). The majority of the patients 51.6% (n=32) were workers, 27.4% (n=17) housewives, 11.3% (n=7) unemployed and 9.7% (n=6) were employees (Table 2). Smokers were 24.2% (n=15), alcoholic 8.1% (n=5) and snuffers were 24.2(n=15) of the patients (Table 6).

History of blood transfusion was reported in 43.5% (n=27) of the patients, family history of similar condition 1.6% (n=1) and family history of small bowel cancer 1.6% (n=1) [4,5]. None of the patients reported family history of gastric cancer and/or colonic cancer or GIST (Table 7). On examination, pallor reported in 40.3% (n=25), jaundice 9.7% (n=6) and abdominal mass 41.9% (n=26) (Table 8). Characteristics of abdominal mass (n=26) shown in Table (9). All masses epigastriac in site, the mean size was 183.8±19.7cm2. Regular shape 88.5% (n=23), irregular 11.5% (n=3), regular surface 92.3% (n=24), irregular 7.7(n=2). Firm in consistency 96.2% (n=25) and hard in 3.8% (n=1). Motility 80.8 (n=21) and fixed 19.2% (n=2%). Attached 11.5% (n=3) not attached 88.5% (n=23) [6,7]. The OGD site of mass was on body in 58.3% (n=35) of the patients, fundal 15% (n=9), antral 8.3% (n=5), cardia 8.3% (n=5), prepyloric 6.7% (n=4) and first duodenum 3.3% (n=2) (Figure 3). Polypoid mass reported in 45% (n=27) of the patients, ulceration 25% (n=15), none 18.4% (n=11), submucosal 8.3% (n=5) and fungating 3.3% (n=2) (Figure 4). Improvement was more common among younger ages and females while deaths more common among older ages and males (P value < 0.05) (Tables 12 and 13). Statistically were negative correlation between the character of the mass and the outcome (table 19) [8,9].

Table 1: Age

Age group	N	%
30 - 40 years	15	24.2
41 - 50 years	17	27.4
51 - 60 years	8	12.9
61 - 70 years	16	25.8
> 70 years	6	9.7
Total	62	100.0

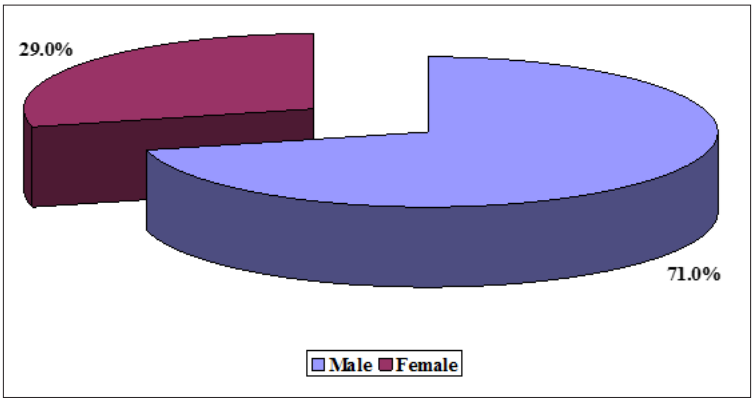

Figure 1: Gender

Table 2: Occupation

Occupation	N	%
Housewife	17	27.4
Worker	32	51.6
Employee	6	9.7
Unemployed	7	11.3
Total	62	100.0

Table 3: Tribal origin

Tribe	N	%
Western	20	32.3
Eastern	9	14.5
Northern	20	32.3
Central	9	14.5
Southern	4	6.5
Total	62	100.0

Table 4: Clinical presentations

Presentations	Yes		No		Total	
	N	%	N	%	N	%
Abdominal pain	56	90.3	6	9.7	62	100.0
Vomiting	30	48.4	32	51.6	62	100.0
Nausea	32	51.6	30	48.4	62	100.0
Jaundice	6	9.7	56	90.3	62	100.0
Heartburn	22	35.5	40	64.5	62	100.0
Dyspepsia	33	53.2	29	46.8	62	100.0
Abdominal distension	12	19.4	50	80.6	62	100.0
Change in bowel habit	32	51.6	30	48.4	62	100.0
Loss of appetite	54	87.1	8	12.9	62	100.0
Loss of weight	51	82.3	11	17.7	62	100.0
Hematemesis	17	27.4	45	72.6	62	100.0
Meleana	20	32.3	42	67.7	62	100.0
Fresh bleeding per rectum	4	6.5	58	93.5	62	100.0

Table 5: Co-morbidity

	Yes		No		Total	
	N	%	N	%	N	%
DM	11	17.7	51	82.3	62	100.0
HTN	19	30.6	43	69.4	62	100.0

Table 6: Social habits

Habits	Yes		No		Total	
	N	%	N	%	N	%
Smoking	15	24.2	47	75.8	62	100.0
Alcoholic	5	8.1	57	91.9	62	100.0
Snuffers	15	24.2	47	75.8	62	100.0

Table 7: Distribution of the patients according to history

History	Yes		No		Total	
	N	%	N	%	N	%
Blood transfusion	27	43.5	35	56.5	62	100.0
Family history of similar condition	1	1.6	61	98.4	62	100.0
Family history of gastric cancer	0	0.0	62	100.0	62	100.0
Family history of small bowel cancer	1	1.6	61	98.4	62	100.0
Family history of colonic cancer	0	0.0	62	100.0	62	100.0
Dyspepsia	33	53.2	29	46.8	62	100.0

Table 8: Physical examination

Features	Yes		No		Total	
	N	%	N	%	N	%
Pallor	25	40.3	37	59.7	62	100.0
Jaundice	6	9.7	56	90.3	62	100.0
Abdominal mass	26	41.9	36	58.1	62	100.0

Table 9: Characteristics of abdominal mass

Characteristics	N	%
Site		
Epigastric	26	100.0
Total	26	100.0
Shape		
Regular	23	88.5
Irregular	3	11.5
Total	26	100.0
Surface		
Regular	24	92.3
Irregular	2	7.7
Total	26	100.0
Consistency		
Yes	25	96.2
No	1	3.8
Total	26	100.0
Motility		
Yes	21	80.8
No	5	19.2
Total	26	100.0
Attachment		
Yes	3	11.5
No	23	88.5
Total	26	100.0

Table 10: Others abdominal features

Other	Yes		No		Total	
	N	%	N	%	N	%
Ascites	1	1.6	61	98.4	62	100.0
Sister Mary Joseph LN	0	0.0	62	100.0	62	100.0
Virchow LN	0	0.0	62	100.0	62	100.0
Signs of met to lung	1	1.6	61	98.4	62	100.0
Signs of Mets to brain/spinal cord	1	1.6	61	98.4	62	100.0

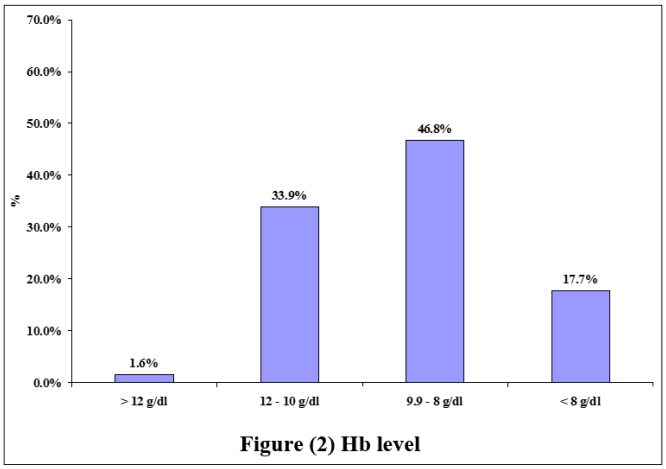

Figure 2: Hb level

Table 11: Liver function test

Enzymes	Mean	Std Deviation
ALT (SGPT)	47.0	20.3
AST (SGPT)	21.8	25.3
ALP	147.5	78.9

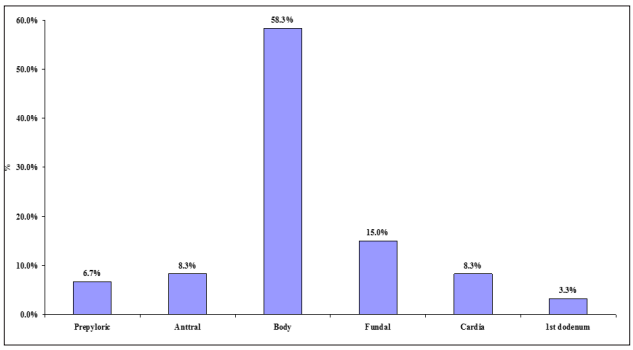

Figure 3: OGD site of mass (n=62 excluding 2 cases of EGST)

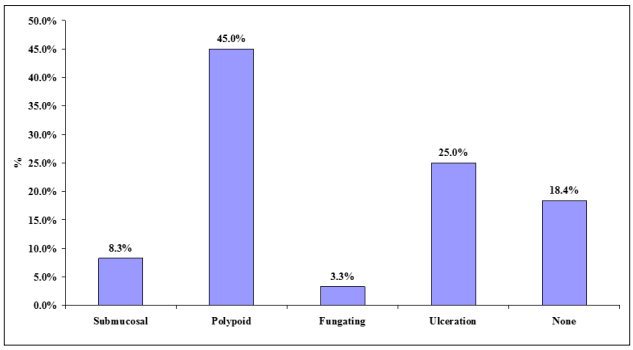

Figure 4: Looks of mass (n=62 excluding 2 cases of EGST)

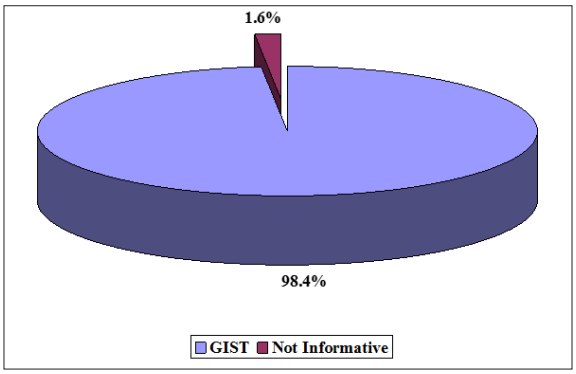

Figure 5: Histopathology specimen

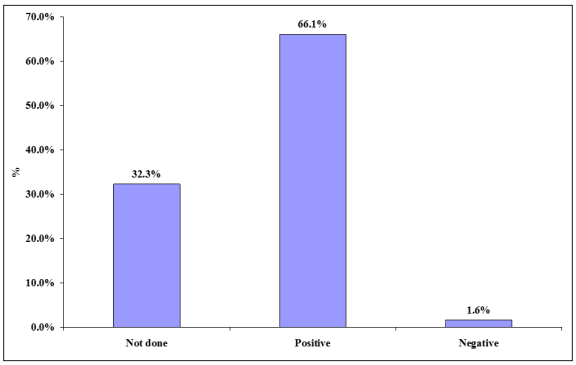

Figure 6: CD 34

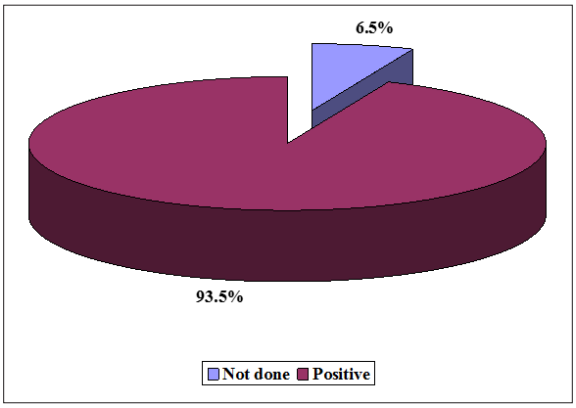

Figure 7: CD 117

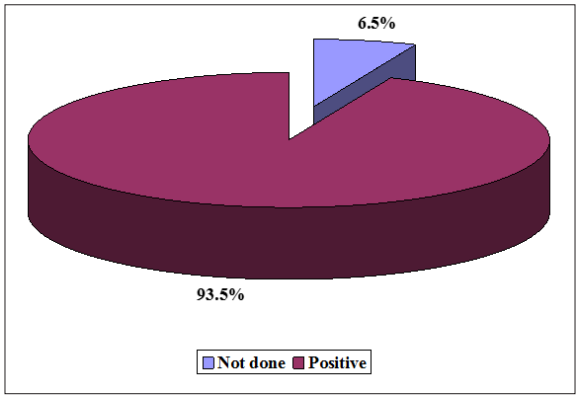

Figure 8: Other tests

Table 12: Options of surgery

Option of surgery	N	%
Not done	12	19.4
Resection of omentum +p hepatectomy	1	1.6
Resection of omentum + small bowel	1	1.6
Wedge resection	32	51.6
Proximal gastrectomy	7	11.3
Debullking	1	1.6
Distal gastrectomy	6	9.7
Excision	1	1.6
Biopsy	1	1.6
Total	62	100.0

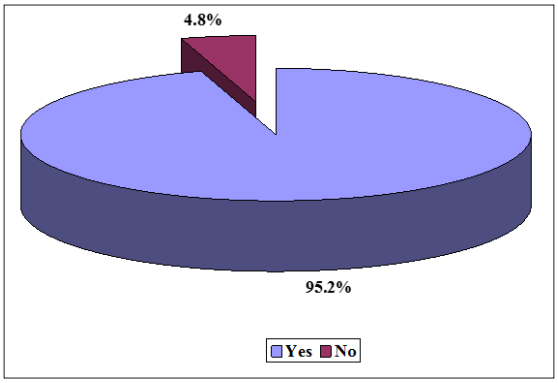

Figure 9: reception of Imatinib

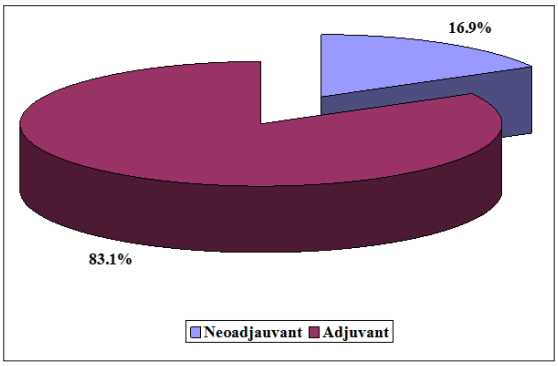

Figure 10: Type of Imatinib (n=59)

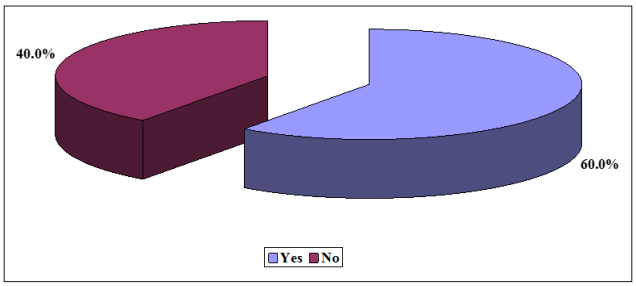

Figure 11: regression of size of the tumour in case of neoadjuvant therapy (n=10)

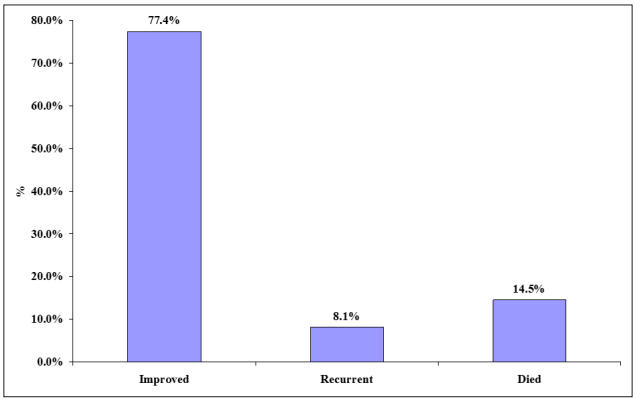

Figure 12: Distribution of the patients according to outcome (6 months FU)

Table 13: Age versus outcome

Age group	Postoperative 6 months FU					
	Improved		Recurrent		Died	
	N	%	N	%	N	%
30 - 40 years	15	31.3	0	0.0	0	0.0
41 - 50 years	14	29.2	3	60.0	0	0.0
51 - 60 years	7	14.6	0	0.0	1	11.1
61 - 70 years	9	18.8	2	40.0	5	55.6
> 70 years	3	6.3	0	0.0	3	33.3
Total	48	100.0	5	100.0	9	100.0

P value = 0.001 < 0.05 indicates significant correlation

Table 14: Gender versus outcome

Gender	Postoperative 6 months FU					
	Improved		Recurrent		Died	
	N	%	N	%	N	%
Male	33	68.8	5	100.0	6	66.7
Female	15	31.3	0	0.0	3	33.3
Total	48	100.0	5	100.0	9	100.0

P value = 0.038 < 0.05 indicates significant correlation

Table 15: Surgical options versus outcome

Option of surgery	Postoperative 6 months FU					
	Improved		Recurrent		Died	
	N	%	N	%	N	%
Not done	7	14.6	0	0.0	5	55.6
Resection of omentum + p hepatectomy	1	2.1	0	0.0	0	0.0
Resection of omentum + small bowel	1	2.1	0	0.0	0	0.0
Wedge resection	28	58.3	1	20.0	3	33.3
Proximal gastrectomy	5	10.4	2	40.0	0	0.0
Debullking	0	0.0	1	20.0	0	0.0
Distal gastrectomy	5	10.4	1	20.0	0	0.0
Excision	1	2.1	0	0.0	0	0.0
Biopsy	0	0.0	0	0.0	1	11.1
Total	48	100.0	5	100.0	9	100.0

P value = 0.021 < 0.05 indicates significant correlation

Table 16: Imatinib versus outcome

The patient received Imatinib	Postoperative 6 months FU					
	Improved		Recurrent		Died	
	N	%	N	%	N	%
Yes	48	100.0	5	100.0	6	66.7
No	0	0.0	0	0.0	3	33.3
Total	48	100.0	5	100.0	9	100.0

P value = 0.002 < 0.05 indicates significant correlation

Table 17: Outcome in relation to clinical presentation

Presentations	Postoperative 6 months FU						
	Improved		Recurrent		Died		P value
	N	%	N	%	N	%	
Abdominal pain	46	95.8	3	60.0	7	77.8	0.018*
Vomiting	23	47.9	2	40.0	5	55.6	0.021*
Nausea	25	52.1	2	40.0	5	55.6	0.021*
Jaundice	2	4.2	0	0.0	4	44.4	0.014*
Heartburn	16	33.3	2	40.0	4	44.4	0.022*
Dyspepsia	26	54.2	2	40.0	5	55.6	0.027*
Abdominal distension	6	12.5	1	20.0	5	55.6	0.031*
Change in bowel habit	25	52.1	3	60.0	4	44.4	0.013*
Loss of appetite	41	85.4	5	100.0	8	88.9	0.011*
Loss of weight	39	81.3	4	80.0	8	88.9	0.011*
Hematemesis	11	22.9	2	40.0	4	44.4	0.014*
Meleana	14	29.2	2	40.0	4	44.4	0.014*
Fresh bleeding per rectum	4	8.3	0	0.0	0	0.0	0.001*

* Significant correlation P value < 0.05

Table 18: Outcome in relation to co-morbidity

Co-morbidity	Postoperative 6 months FU						
	Improved		Recurrent		Died		P value
	N	%	N	%	N	%	
HTN	13	27.1	1	20.0	5	55.6	0.028*
DM	7	14.6	1	20.0	3	33.3	0.019*

* Significant correlation P value < 0.05

Table 19: Outcome in relation to tests

	Postoperative 6 months FU						
	Improved**		Recurrent		Died		P value
OGD site of mass	N	%	N	%	N	%	0.017*
Prepyloric	3	6.5	0	0.0	1	11.1	
Antral	4	8.7	0	0.0	1	11.1	
Body	27	58.7	2	40.0	6	66.7	
Fundal	7	15.2	1	20.0	1	11.1	
Cardia	4	8.7	1	20.0	0	0.0	
1st duodenum	1	2.2	1	20.0	0	0.0	
Total	46	100.0	5	100.0	9	100.0	
Looks							
Sub-mucosal	4	8.7	0	0.0	1	11.1	0.022*
Polypoid	22	47.8	2	40.0	3	33.3	
Fungating	0	0.0	1	20.0	1	11.1	
Ulceration	13	28.3	0	0.0	2	22.2	
None	7	15.2	2	40.0	2	22.2	
Total	46	100.0	5	100.0	9	100.0	
Histopathology specimen							
GIST	47	97.9	5	100.0	9	100.0	0.028*
Not Informative	1	2.1	0	0.0	0	0.0	
Total	48	100.0	5	100.0	9	100.0	
CD34							
Not done	14	29.2	1	20.0	5	55.6	0.018*
Positive	34	70.8	4	80.0	3	33.3	
Negative	0	0.0	0	0.0	1	11.1	
Total	48	100.0	5	100.0	9	100.0	
CD 117							
Not done	4	8.3	0	0.0	0	0.0	0.001*
Positive	44	91.7	5	100.0	9	100.0	
Total	48	100.0	5	100.0	9	100.0	
Other							
None	44	91.7	5	100.0	8	88.9	0.011*
DOGI	4	8.3	0	0.0	0	0.0	
S 100 proton	0	0.0	0	0.0	1	11.1	
Total	48	100.0	5	100.0	9	100.0	

* Significant correlation P value < 0.05 ** Total of Improved patients with OGD group 46 because 2 EGST were excluded

Table 20: Characteristics of abdominal mass in relation to outcome

Characteristics	Improved		Recurrent		Died		P value
Surface	N	%	N	%	N	%	
Regular	17	89.5	1	100.0	6	100.0	0.42*
Irregular	2	10.5	0	0.0	0	0.0	
Consistency							
Firm	18	94.7	1	100.0	6	100.0	0.47*
Hard	1	5.3	0	0.0	0	0.0	
Mobility							
Yes	14	73.7	1	100.0	6	100.0	0.24*
No	5	26.4	0	0.0	0	0.0	
Attachment							
Yes	2	10.5	0	0.0	1	16.7	0.51*
No	17	89.5	1	100.0	5	83.3	

Not significant P value > 0.05

Discussion

Discussion

In this study the mean age was 53.3±14.3 years. Male to female ratio was 2.4: 1. Nearly similar to Sudanese that gastrointestinal stromal tumours (GIST) are rare tumours, commoner in males than females, with a mean age of 54.7 years [10-15].

Who reported that among Sudanese patients with GIST male to female ratio was 3.3:1. The great majority of patients were between 50 and 79 years of age [16,17]. Radiation and Isotope Centre-Khartoum-Sudan concluded that age of study samples ranged between one to 75 years with mean age of 51 years [18,19].

The most common clinical presentations of gastrointestinal stromal Tumour (GIST) were abdominal pain 90.3 %(n=56), in addition to loss of appetite in 87.1(n=54%) and loss of weight 82.3 %(n=51) of the patients. In Brazil, who found the main symptom in patient with GISTs, was abdominal pain [20-21].

Regarding characteristics of abdominal mass, the study revealed that all masses were epigastric in site. The tumours were localized in the stomach (62.9%), extra intestinal areas (14.8%), intestine (7.4%), oesophagus (7.4%), and rectum (7.4%) [22,23]. Among Saudi patients with GIST reported that thirteen cases were primary localized GISTs and one was metastatic. The organs involved were the stomach in five cases, ileum in four cases, jejunum in two cases, duodenum in two cases, and rectum in one case [24,25].

On the other hand our study showed that the mean size was 18.8±19.7 (cm). The average size of GIST was 75 mm (range: 4 mm to 35 cm). Different from result [26,27]. Al case study in which their patient showed nodule range in size from 1cm to 5cm. In patients with GIST the shape of abdominal mass reported in 88.5 %(n=23), irregular 11.5% (n=3), regular surface 92.3% (n=24), irregular 7.7 % (n=2). Firm 96.2 %(n=25) and hard 3.8 % (n=1). Motility 80.8% (n=21) and immobility 19.2% (n=2). Attached 11.5% (n=3) not attached 88.5% (n=23). Clinical presentation is very heterogeneous, depending on tumour site, size, and growth pattern [28,29].

CD34 was positive for 66.1 %(n=41) of the patients, negative 1.6 %(n=1) and not done for 32.3%(n=20). CD 117 was positive for 93.5 %(n=58) of the patients and not done for 6.5 %(n=4). Gastrointestinal stromal tumours (GIST) most cases were 95% positive for CD117 and 60% for CD34. Out of thirty samples of Sudanese patients CD117 result were positive in 28 (93.3%), and negative in 2 (6.7%). Concerning the association between CD117 and biological behaviour of tumour in study samples revealed that 22 (73.3%) positive expression and 1 (3.3%) were benign, 6 (20%) positive expression and 1(3.3%) negative expression were malignant [30,31]. In Brazil who found that in 92% of in patients with GISTs, the immunohistochemistry exams were positive for CD117 [32,33]. Another case study reported that a 47 years-old female patient showed an intestinal GIST with high aggressive potential (five mitosis per field), with CD117 positive at the immunohistochemical [34,35]. On the other hand in case of a patient who was diagnosed with a huge and atypical GIST in the stomach. The GIST was completely resected and finally diagnosed as c-kit-negative GIST based on immunohistochemical staining of tumours cells, which were negative for CD117 and CD34 and positive for Discovered on GIST-1 (DOG1) [1].

The most common options of surgery were wedge resection 51.6 %(n=32), proximal gastrectomy 11.3 %(n=7), distal gastrectomy. Comparable to Mohammed showed that in cases of gastrointestinal stromal tumours (GIST) one of the main treatments is surgery. In a case study by the patient underwent debulking surgery and received imatinib. Systematic review reported that surgical resection remains the gold standard option of GISTs treatment. Complete resection of the tumours is the main predictor of the postoperative patient's survival. The standard treatment of GIST without metastasis is surgical resection [36,37].

The patients received Imatinib were 95.2 %(n=59), of them 83.1% (n=49) received adjuvant therapy and 16.9 %(n=10) neoadjuvant. Among the 10 patients who received neoadjuvant therapy 60 %(n=6) showed regression in tumours and 40 %(n=4) did not. Concluded that imatinib 400 mg for 1 year after resection of high risk primary GIST prolonged RFS and OS compared with historical controls in addition reported that it is rare to see incremental tumours shrinkage after 9 months, and the median time to progression on imatinib is approximately 2 years. In Sudan Mohammed showed that the one of the main treatment of GIST is tyrosine kinase inhibitor, (Imatinib) targeted therapy. In a case study by the patient underwent debulking surgery and received imatinib. Another case study of Sudanese female patients with unusual case of a gastric GIST showed that the patient underwent wedge resection of the stomach and received treatment with

imatinib [38,39]. Demonstrated that over 80% of patients with advanced GIST derive some clinical benefit. Demonstrated that the median time to overall response in patients with advanced GIST treated with imatinib was 13 weeks, and that 80% (of the 80% of patients who responded) did so within 6 months of therapy[40,41].

The outcome of patients at postoperative 6 months FU was improvement 77.4 %(n=48), death 14.5 %(n=9) and recurrence 8.1 %(n=5). Similar to study reported that OS and DFS rates for the 10 duodenal GIST patients undergoing limited resection were 100% and 93.7% at 1 year and 75% and 67.8 % at 3 years. Also showed that total of 58 patients (60.4 %) underwent LR, while 38 (39.6 %) underwent PD. Most patients (n = 86; 89.6 %) had negative surgical margins (R0) (P = 0.34). The 1-, 2-, and 3-year actuarial recurrence-free survival was 94.2, 82.3, and 67.3 %, respectively. Moreover, Kim et al concluded that complete resection (R0 resection) was achieved in 1018 patients (96.3%). Eighty-six patients (8.1%) had postoperative complications, and 2 patients (0.2%) died within 30 days after surgery. According to the 7th UICC/AJCC TNM system, 5-year recurrence-free survival rates were 95% to 99% in stage I, 94.1% in stage II, 74.1% in stage IIIA, 48.6% in stage IIIB, and 50.0% in stage IV patients. On survival analysis of high-risk patients according to the TNM system, the 5-year recurrence-free survival rates were 91.6% in stage II, 74.1% in stage IIIA, and 48.6% in stage IIIB patients. Also Unalp, et al found that 5 patients (12.2%) died in the early postoperative period. The mean follow-up period was 38.7 months. The median length of survival was 53 months and the 5-year survival rate was 49.4% [42,43].

Conclusion

GISTs are more common in male specially those age between 40 to 70 year old ,and the most common presentation of gastrointestinal tumour is abdominal Pain, loss of appetite and weight almost the same percentage. Gastrointestinal tumour is almost equally distributed between north and west Sudan and with very low incidence in south Sudan. the mass is located almost in epigastric with the stomach is the commonest site.

The commonest positive immunohistochemistry CD117 The surgical management consist of curative and palliative options; with wedge resection is the comments operation. Imatinib showed good response when used as neoadjuvent therapy to down size the tumour and also as adjuvant to prevent recurrent

Recommendations

1. Gastrointestinal stromal tumour (GIST) belong to the group of sarcomas, that are un common tumour of digestive tract ,more than half of the GISTS start in the muscular wall of the stomach, most others in the small intestine ,rarely ,GISTs are found at other GI sites
2. GISTs should managed in multidicipillanary team (oncologist, surgeons and radiologist), if possible, find a GISTs specialist at a sarcoma centre or major cancer centre.
3. to create good contact between the surgeon and the oncologist in the management
4. make clear protocol when to use the imatinib as neoadjuvent therapy or adjuvant
5. Close monitoring for the patients of GIST

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