

## Pattern & presentation of colorectal cancer in central Sudan, a retrospective descriptive study, 2010-2012.

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### Abstract

**Aims & objective:** To determine the age and gender distribution and clinical presentation of patients together with histological types of colorectal cancer cases presented to Ibn Sina specialized hospital.

**Patients and methods:** This retrospective study was conducted in Ibn Sina Hospital (Sudan). Seventy three (73) patients of colorectal cancer who presented in the period from January 2010 to December 2012 were included. Data were collected from their hospital records and analyzed using SPSS computer program 17.

**Results:** More than 17 % of the study populations was below the age of 40 years, and 43.84% was below 50 years. The male to female ratio was 1:1.02. Rectal bleeding is the commonest presenting symptom and well differentiated adenocarcinoma is the dominating tumor grade. 8.3 % of patients presented with liver metastasis.

**Conclusion:** Colorectal cancer in this study was found more in young age groups with a peak frequency at the fifth and sixth decades.

**Keywords:** Colorectal cancer, well differentiated, adenocarcinoma

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### Introduction

Colorectal cancer (CRC) ranked as the 4th most common cancer in males and the 2nd for females<sup>1</sup>. The estimated number of cases diagnosed worldwide in the year 2000 was 944,717 with 64.6% in more developed countries<sup>2</sup>. Hereditary factors increase the risk of development of colorectal cancer; people with positive family history in the first degree relatives have two to three folds increased risk than the general population<sup>3</sup>. Screening for CRC can reduce mortality<sup>4</sup>. Colorectal cancer presents usually with rectal bleeding, tenesmus is a common presenting symptom of low rectal cancer<sup>5</sup>. The preoperative evaluation is critically important to treat the cancer optimally and achieve sphincter preservation. With this information, surgeons must individualize the treatment and care of each patient<sup>6</sup>.

The objective of this study is to determine the age and gender distribution and clinical presentation together

with histological types of patients with colorectal cancer presented to Ibn Sina specialized hospital.

### Patients and methods

This is a retrospective descriptive hospital based study. It included patients who presented with colorectal cancer to Ibn Sina specialized hospital as elective cases in the period from January 2010 to December 2012. Total number of patients presented to the hospital with colorectal cancer was 81 patients, of them 73 patients were included in this study and the other 8 cases were excluded from the study because of incomplete data. Ibn Sina specialized hospital is a tertiary hospital which accepts cases of gastrointestinal diseases from Khartoum state and other states of the Sudan. Demographic data of all patients was obtained with their presenting symptoms. Also, the positive physical signs with positive relevant results of investigations were recorded. Incomplete patient's record was the main limitation of this study together with the fewer number of cases. The data was fed in to and computed by the statistical package for social sciences (SPSS 17).

### Results:

A total of 73 patients were included in the study. There were 37 males (50.68%) and 36 females (49.32%) for the study with a male: female ratio of 1:1.02. Their age

ranged from 18 years to 85 with a mean of 50+ 14.5 years. 17.81 % (n=13) of patients were 40 years of age or younger (table 1). The highest numbers of patients were between the ages of 41 and 60 years, the age and geographical distribution in Sudan are shown in (table 1).

**Table 1: Explanatory variables of the study.**

Explanatory variable	N [%]	95% CI
<b>Age [years]</b>		
< 40	13 [17.81]	11 – 28 %
41-50	19 [26.03]	17 – 37 %
51-60	18 [24.65]	16 – 36 %
61-70	14 [19.18]	12 – 30 %
71-80	7 [9.59]	4 – 19 %
>80	2 [2.47]	0.2 – 10 %
<b>Gender</b>		
Male	37 [51]	40 – 61 %
Female	36 [49]	38 – 61 %
<b>Residence</b>		
Northern Sudan	13 [17.81]	11 – 28 %
Western Sudan	20 [27.40]	18 – 37 %
Eastern Sudan	2 [2.73]	0.18 – 10 %
Khartoum State	26 [35.62]	26 – 47 %
Gezira State	3 [4.11]	0.93 – 12 %
Southern Sudan	9 [12.33]	6.4 – 22 %
<b>Symptoms</b>		
Rectal bleeding	52 [71]	60 – 80 %
Bowel habits changes	48 [66]	54 – 76 %
Abdominal pain	51 [70]	59 – 79 %
Tenesmus	23 [32]	22 – 43 %
Weight loss	19 [26]	17 – 37 %
Abdominal distension	7 [10]	4 – 17 %
Anal pain	4 [5]	2 – 14 %
<b>Family history of Ca colon</b>	11 [15.05]	8 – 25 %
<b>Tumor location</b>		
Colonic	44 [60.27]	49 – 71 %
Rectal	29 [39.73]	29 – 51 %
<b>Metastasis</b>		
Liver	6 [8.3]	4 – 17 %
Brain	3 [4.11]	0.9 – 11 %
Bone	1 [1.4]	0.01 – 8 %
<b>Histopathology</b>		
Well differentiated adenocarcinoma	33 [45.20]	34 – 57 %
Moderately differentiated adenocarcinoma	18 [24.65]	16 – 36 %
Poorly differentiated adenocarcinoma	19 [26.02]	17 – 37 %
leiomyosarcoma	3 [4.11]	0.9 – 11 %

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The most common presenting symptom was rectal bleeding (71.23%) and (31.50%) of them had tenesmus, the symptoms showed in (table 1&2). Palpable tumor per rectum was found in 27.34% of patients and in 72.66% it was seen during full colonoscopy and during flexible sigmoidoscopy. The diagnosis in all cases was confirmed by biopsy, in 65% the biopsy was taken at the initial colposcopy and in 20% it was taken during colonoscopy after the initial sigmoidoscopy and in 15%

it was taken after re- colonoscopy. Colonic cancer constitutes 60.27% of the cases and rectal cancer found in 39.73% of cases. The biopsy results showed 96.87 was adenocarcinoma and its shown in table 1&2. After work up of all patients 8.3 % were found to have liver metastases, 3.3 % had brain metastases and 1.7 % had bone metastasis. In 15.06%<sup>11</sup> of cases there was positive family history of colorectal cancer, 63.64 (7 out of 11) of them are below 50 years of age.

**Table 2: Frequency of the explanatory factors by symptoms**

	Rectal bleeding	Abdominal pain	Bowel habits	Tenesmus
Age less than 40	13	9	13	7
Male sex	23	18	31	21
Family history	8	1	6	5
Rectal cancer	26	9	29	26
Metastasis	6	7	8	4

**Table 3: Frequency of the explanatory factors by histopathology**

	Well	Moderate	Poorly	lieomyosarcoma
Age less than 40	2	6	5	0
Male sex	13	8	15	1
Family history	4	6	1	0
Rectal cancer	15	11	3	0
Metastasis	2	1	7	0

## Discussion

Colorectal cancer (CRC) is a common cancer worldwide. CRC affects men and women of all racial and ethnic groups, and is most often found in people aged 50 years or older in developed countries<sup>7</sup>. No age group is exempt; an adenocarcinoma of the colon has been reported in a nine-month-old girl<sup>8</sup>.

In this study the colorectal cancer among young (<40 years old) is 17.81%, near similar results found in Egypt by Gado A et al<sup>9</sup> where 25% of cancers occurred in patients aged less than 40 years. Higher incidence was reported by Ahmed et al<sup>10</sup> in Khartoum hospital where 35.4% of patients were 40 years or less. In this study as well 43.83% of cancer occurred below age of 50 years. Data from the West emphasized that less than 20% of CRCs occur under 50 years<sup>11</sup> but in other survey from

Iran<sup>12</sup> 34.5% of patients were below 50 years of age. CRC was diagnosed in patients aged 40 years or younger in 2–6% of CRC cases in Italy, France and Taiwan and in 17–36% in Saudi Arabia, Sudan and Iran<sup>8,13-16,10</sup>. All these data reflects that the colorectal cancer in Middle East and Africa is more common in the young than in Western countries.

Agrawal S et al<sup>17</sup> recommended screening of African Americans at a younger age (45 rather than 50 years) as they were found to have a higher incidence of developing colorectal cancer at a younger age. Colorectal cancer affecting the younger population (<40 years old) is associated with poor prognosis<sup>18</sup>. Dukes and Bussey suggested a much higher rate of lymphatic metastasis in patients less than 40 years of age due to a more rapid progression of the disease in young patients<sup>18</sup>. Miyake Y

et al and Bedikian AY et al demonstrate that the 5 year survival rate for young patients (30 years old or younger) is only 25–30%<sup>19,20</sup>. The need for early recognition of CRC in young adults is emphasized by the greater incidence of advanced disease and the high treatment failure rate<sup>21</sup>. However, if detected early, young patients with Dukes' stage A or B lesions have better overall 5 year survival rates<sup>22</sup>.

On the other hand the highest incidence was identified in the age group 41- 60 years (50.68%) which coincides with that reported by Ahmed et al<sup>10</sup> but differs from David et al whose peak incidence was at 75 years<sup>23</sup>.

In this study males were more than females but the ratio was almost similar (1: 1.02) which can be compared to that shown by Verschueren RC et al<sup>24</sup> and other studies<sup>10,25,26</sup>. On the other hand Guraya S Y showed a different male to female ratio of (4: 1)<sup>27</sup>.

The most common presenting symptom was rectal bleeding (71.7%) and then 31% of them had tenesmus almost similar to the Payam Samareh<sup>12</sup> study in Iran and unlike that shown in a study done in Wad Medani hospital in Sudan by Ahmed et al<sup>26</sup> who described rectal bleeding as the main presenting symptoms in 97.2 % and tenesmus was 77.8 %. Payam Samareh<sup>12</sup> reported a 2.5% positive first degree family history of colorectal cancer compared to a higher percentage in our group of 13.3 % of the cases.

Tumor grade pattern in our study was mainly well differentiated adenocarcinoma (45%) then poorly differentiated (26.67%), in a similar study in Saudi Arabia<sup>25</sup> moderately differentiated was the most common followed by poorly differentiated adenocarcinoma. Metastasis to the liver at presentation in this group of patients was dominating other sites and it looks similar to the Iranian study<sup>12</sup> they found a higher incidence of liver metastases were associated with rectal cancer followed by transverse colon cancers.

## Conclusion

Colorectal cancer was found to affect Sudanese patients at younger age groups (43.84% was below 50 years) with a peak frequency at the fifth & sixth decades. A greater awareness of the potential for colorectal cancer in young people must be emphasized to all physicians. Further study is required to be undertaken to find out whether colorectal cancer affecting young population

is due to regional factors or whether it is indicative of a changing pattern of occurrence of colorectal cancer. If the latter, additional studies are required to define genetic factors.

## Notice

The authors declare that ethical approval was obtained from Ibn Sina hospital ethical committee and they have not received any financial support from any sector for preparation of this manuscript

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