

## Colorectal cancer in younger population: our experience

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### Abstract

**Objective:** To promote awareness regarding increased occurrence of colorectal cancer in younger population and its clinicopathological features compared to older patients.

**Methods:** The cross-sectional study was conducted from February 2010 to January 2011 on patients with diagnosis of colorectal carcinoma admitted through emergency or outpatients' departments to Surgical Unit 5, Civil Hospital, Karachi. Data regarding age, gender, presentation, site of tumour, surgery performed and Dukes staging was collected and analysed.

**Results:** A total of 23 patients were operated during the study period: 13 (56.52%) males and 10 (43.47%) females. Of them 12 (52.17%) were below the age of 40 years, while 3 (13.04%) patients were in the 11-20 age group. In 7 (30.4%) patients, tumour was irresectable at the time of presentation so a palliative procedure (diversion colostomy or ileostomy) was performed. There was a higher proportion of younger patients with metastatic disease at the time of presentation (n=9; 75%) while 10 out of 12 patients in the younger age group (83.3%) had a tumour of left colon, particularly rectum.

**Conclusion:** Although colorectal cancer is usually a disease of older patients, it is increasingly becoming more common in younger population. Data suggests a leftward distribution for colorectal carcinoma and that younger patients present with more advanced disease and poorer prognosis.

**Keywords:** Colorectal carcinoma, Duke's staging, Younger population. (JPMA 63: 1275; 2013)

### Introduction

Colorectal cancer (CRC), also known as colon cancer or large bowel cancer, includes cancerous growth in the colon, rectum and appendix. With about 65000 deaths per year, it is the fourth most common neoplasm worldwide and second leading cause of cancer-related deaths in the United States.<sup>1</sup> Nearly 600,000 new cases are diagnosed annually worldwide.<sup>2</sup> Screening for CRC can reduce mortality<sup>3</sup> and also reduce incidence by preventing cancer occurrence through the detection and removal of pre-cancerous polyps. The incidence is higher in men than women. In men, it ranges from 48.3 to 72.5 per 100,000 per year while in women, it ranges from 32.3 to 56 per 100,000 per year.<sup>4,5</sup> The same trend is seen in a number of population-based studies, from other countries including Pakistan.<sup>6-11</sup> In these studies a high tumour prevalence has been documented in young patients (<40 years) associated with advanced and poorly differentiated lesions. Young patients often have more advanced disease on presentation and their survival is lower than older patients, perhaps because of delayed diagnosis.<sup>12</sup>

We present the data on 23 patients with colorectal cancer

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with the demography and surgical procedures under taken.

### Patients and Methods

The prospective study was carried out in Surgical Unit 5, Civil Hospital, Karachi, from February 2010 to January 2011. All patients with biopsy-proven CRC admitted during the period diagnosed as having colorectal cancer were included in the study. The parameters analysed were age, gender, modes of presentation, location of the primary tumour, surgical procedures performed and staging of tumour. The patients were divided into two groups: A and B. In Group A patients, those with suspected CRCs were admitted through out-patient departments. All patients underwent colonoscopy and biopsy along with computed tomography (CT) scans of abdomen and other baseline investigations, including complete blood count (CBC), liver function tests (LFTs), serum protein A/G ratio, viral and tumour markers. The patients later had planned surgeries followed by adjuvant chemo/radiotherapy. Group B included those patients who were admitted through emergency department with signs and symptoms of intestinal obstruction or peritonitis and underwent emergent laparotomy. These patients were followed by histopathological examination of resected specimen and adjuvant chemo-radiotherapy. Cancer sites proximal to splenic flexure were grouped as right-sided while any cancer in the rectum, sigmoid, descending colon and splenic flexure

was defined as left-sided. The Duke's classification<sup>13</sup> was employed for staging of tumour. An especially designed proforma was used to collect data.

### Results

A total of 23 patients with CRC diagnosis were managed over the study period. There were 13 (56.52%) males with a mean age 42.3±16 years and 10 (43.47%) females with a mean age of 40±18 years. Twelve (52.17%) patients were below 40 years of age or younger and 11 (47.83%) were over 40 years of age (Table). Eight (34.72%) patients were admitted through out-patients' department (Group A) while 15 (65.21%) patients presented to the accidents and emergency department (Group B). Seven (30.43%) patients presented with right-sided tumours and 16 (69.56%) with left-sided tumours. Tumour sites involved were anal canal (n=1; 4.34%), rectum (n=10; 43.47%), sigmoid colon (n=4; 17.39%), descending colon (n=2; 8.7%), transverse colon (n=1; 4.3%), ascending colon (n=2; 8.7%), caecum (n=2; 8.7%) and appendix (n=1; 4.34%). The leftward trend of colorectal cancer was more prominent in the younger age group where 10 out of 12 (83.3%) had a left-sided tumour (Figure-1).

Primary resection of tumours was done in 16 (69.56%) patients, while 7 (30.4%) had irresectable tumours at the time of presentation and palliative procedures (diversion

Table-1: Age distribution of cases.

Age Group	No. of Cases	Percentage
11-20 years	03	13.04
21-30 years	03	13.04
31-40 years	06	26.1
41-50 years	02	8.7
51-60 years	04	17.4
61-70 years	02	8.7
71-80 years	03	13.04

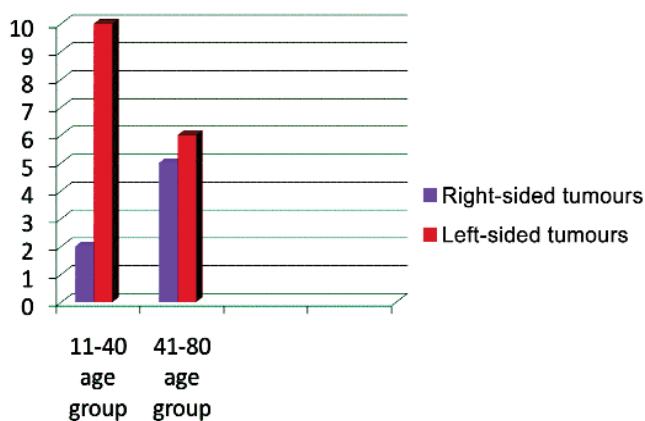


Figure-1: Sub-site distribution according to younger and older age groups.

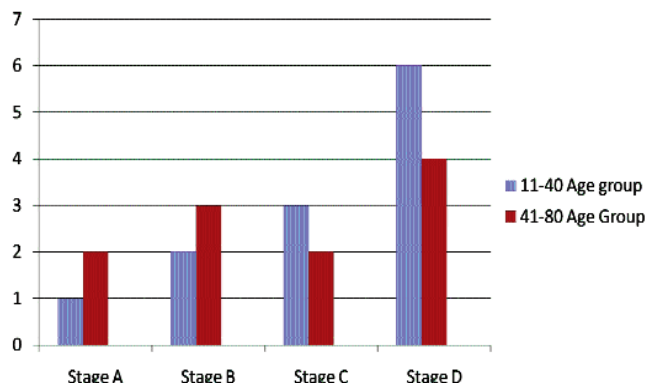


Figure-2: Dukes staging in different age groups.

colostomy/ileostomy) were performed. Different surgical procedures which were performed included right hemicolectomy in 6 (26.1%) patients, abdomino-perineal resection (APR) in 4 (17.4%), anterior resection (AR) in 2 (8.7%), Hartman's procedure in 3 (13.04%) and left hemicolectomy in 1 (4.34%). The stage distribution according to Duke's Classification was stage A in 3 (13.04%) patients, stage B in 5 (21.74%), stage C in 5 (21.74%) and stage D in 10 (43.47%). The younger patients presented with more advanced disease as only 3 (25%) in the younger age group presented in early stages (stage 1 and 2), while 9 (75%) presented in late stages (stage C and D) (Figure-2).

### Discussion

CRC is primarily a disease of the elderly but its incidence in younger age group is increasing.<sup>14</sup> It is generally assumed that due to a predominant vegetarian diet, people in developing countries, particularly Asia and Africa, have a low incidence of CRC. But recently many local studies show a substantial increase in the number of patients with CRC, particularly at a younger age group<sup>3,9,10</sup> which was also evident in the current study where two patients were less than 20 years of age and more than 50% of the study group was below 40.

Overall, the incidence of CRC has been decreasing in the United States at a rate of 2.8% per year in men and 2.2% per year in women.<sup>15,16</sup> This rapid decrease is mainly due to an increase in CRC screening, particularly colonoscopy among individuals aged 50 years or older.<sup>17,18</sup> Unfortunately in Pakistan, CRC screening is not done routinely and due to high illiteracy rate in rural areas, people are unaware of its importance. Even in urban areas, where people have more access to specialised centres, they are not checked routinely and are diagnosed only at a very late stage. This fact also reflected in our study in which not a single case was diagnosed by screening colonoscopy. The prognosis is even worse

when the disease occurs in young adults due to the advanced stage at presentation and delayed diagnosis.<sup>19</sup> In the National Cancer Registry, Saudi Arabia 1997-1998,<sup>20</sup> the median age at diagnosis of CRC was 60 years for males and 55 years for females whereas in 1999-2000,<sup>21</sup> the reported incidence was 59 years for males and 56 years for females. Our study revealed an estimated mean age of 42.3±16 years for males and 40±18 years for females.

Our series reaffirmed the general trend towards a distal left-sided migration of CRC, especially in young individuals<sup>3,6,9,14</sup> as 83.3% of the tumours were located distal to splenic flexure compared to 54.54% left-sided tumours in older age group. Common sites involved were rectum (43.48%) and sigmoid colon (17.39%).

Younger patients had more advanced disease at the time of first presentation (Duke's C and D) in 75% of cases compared to 54.54% cases of older patients. These findings are comparable with other studies.<sup>22-24</sup>

It would be important to note that the size of the study is too small to draw representative conclusions. It does point though towards a need to expand on this subject perhaps with the formation of an effective cancer registry in Pakistan. This is a preliminary study and we intend to continue it prospectively for an extended period. It would be prudent to try and find the risk factors in patients presenting at an early age with colorectal neoplasms that may have contributed to the pathology.

## Conclusion

The incidence of rectal and rectosigmoid cancer appears to be increasing in patients aged less than 40. Data confirms that in an ethnically diverse young population, CRC tends to be at an advanced stage, aggressive and frequently non-operable at the time of diagnosis. It is important for physicians to recognise the poor outcome of CRC in a younger population and consider an aggressive approach to early diagnosis and treatment. Young patients with rectal bleeding or other alarming signs should be evaluated with early endoscopy rather than attributing these symptoms to haemorrhoids which is unfortunately the current practice here due to lack of awareness. More frequent endoscopic evaluation may be able to decrease the documented delay in diagnosis among young population.

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