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A retrospective study of colorectal cancer – An audit from a rural medical college hospital over a 6 year period

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Abstract

Aim: Colorectal cancer (CRC) is one among the most common cancers all over the world. Though more number of CRC is diagnosed in India it is being underreported. Our aim was to study the data regarding demography and predominant presenting complaint of CRC patients. We also wanted to find out their correlation with the side of tumor and compare with available Indian and Western literature.

Methods: A retrospective study was done to collect the data of 214 patients who underwent colonoscopy and diagnosed with CRC over a six-year period in a rural medical college hospital. Their age, gender, anatomical distribution, symptoms and histology reports were collected and analyzed.

Results: The mean age of occurrence of CRC in our study was 59.5 years with majority of the cases in the age group 61-70 years. Twenty-seven patients (12.6%) with CRC were less than 40 years age. With 73.8% left sided tumors in our study, rectum was the most common site. As the predominant presenting symptom, bleeding per rectum [PR] and mass had statistically significant association with left sided and right sided tumors respectively.

Conclusion: The side of the tumor can be related to the predominant presenting symptom. CRC is more common on left side with majority occurring in the rectum. This can be identified early by screening sigmoidoscopy. With lifestyle changes there is an increase in CRC in younger age even in rural population. In a rural population per rectal examination, sigmoidoscopy and colonoscopy are considered embarrassing which delays the diagnosis. So, a complaint of bleeding PR should not be taken lightly in age group more than 40. Persistent motivation regarding benefits of screening colonoscopy is important particularly in rural areas for early diagnosis and treatment, to reduce disease specific morbidity and mortality.

Keywords: Colorectal carcinoma, colonic malignancy, screening colonoscopy, sigmoidoscopy

Introduction

Colorectal cancer [CRC] is one among the most common cancers all over the world. With around 1.4 million new cases per year, it is the third most common cancer in males ^[1]. In India, the incidence of CRC is rising rapidly, ^[2, 3] yet it is being underreported. In the Western countries, the conventional use of screening methods, early detection and advanced treatment has reduced the mortality rates ^[4].

CRC was thought to be a disease of old age occurring in population > 50 years of age ^[5]. Previous reports suggest that, about 2 – 3% of CRC occur in younger age < 40 years ^[6]. Recent studies (IT ALSO) also show an increasing trend of colorectal cancers in younger age in India and all over the world ^[7, 8]. In the developing countries, diet and lifestyle transformations may play an important role for the upsurge of colorectal cancers in the younger age group ^[9, 10, 11, 12]. Early detection of the adenomatous polyps and appropriate treatment can prevent the progression and occurrence of colorectal cancer ^[13]. In India, this can be achieved by using screening colonoscopy as an essential investigation. Initially colonoscopy was available only in urban regions, but now as many specialties like oncologists, gastroenterologists and general surgeons are performing colonoscopy its access has increased even in rural areas.

Many research papers have been published on colorectal cancers. But, only handful of retrospective studies has been done in a rural set-up. We outlined to conduct this study in our region and collect data regarding colorectal cancer, and to study the pattern of malignancy considering age, gender, symptoms and location of tumor. We also wanted to identify if there is any association between predominant presenting symptoms of the patient with the side of the tumor.

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Methodology

A retrospective study was conducted in a rural medical college hospital between January 2014 and December 2019. Patients who were diagnosed to have colorectal cancer during this stretch were identified and their case records were retrieved. The age, gender, presenting symptoms, location of tumor and histological reports were collected.

Medical records of the patients who have been diagnosed as colorectal cancer and have undergone complete colonoscopy till caecum were included in the study. Patients with incomplete colonoscopy were excluded. Tumors located at caecum, ascending colon, hepatic flexure, and transverse colon and up to splenic flexure were defined as right sided colon cancer. Tumors

in the descending colon, sigmoid colon and rectum were defined as left sided colon cancer. Statistical analysis was done using graphpad instant version 3.10

Results

In our study during the period of six years, data of 214 patients who underwent complete colonoscopy was collected. The mean age at presentation in our study is 59.5 years. The maximum number of colorectal cancers were in the age group of 61-70 (32.2%) followed by 26.6% cancers in age 51-60. There was a 12.6% incidence of CRC in age less than 40. The age wise distribution of colorectal tumors is shown in Figure 1.

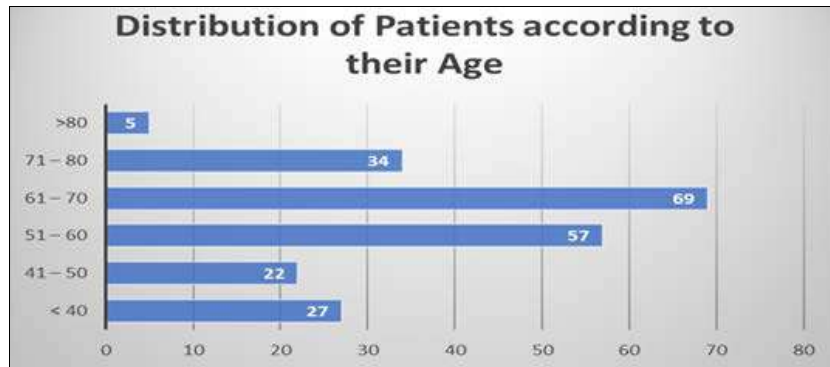


Fig 1: Distribution of Patients according to Age

Of the 214 patients, 141 [65.9%] were male and 73 [34.1%] were female. The data related to the gender and side is shown in Figure 2.

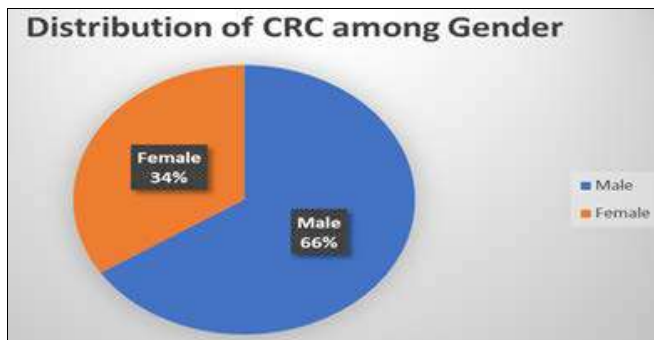


Fig 2: Distribution of CRC among Patients based on their Gender

Fifty-six patients [26.2%] had tumor in the right side and 158 [73.8%] had tumor in the left side. The distribution of number of patients according to the site of tumor is depicted in the Figure 3.

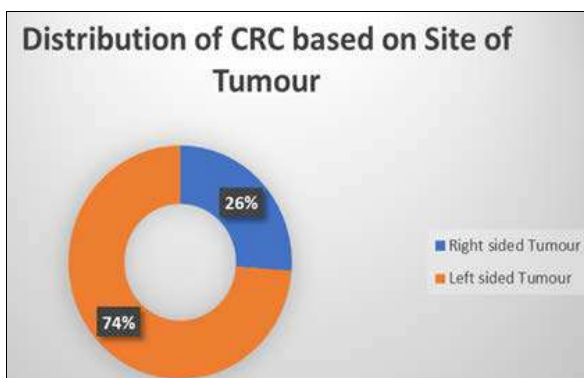


Fig 3: Distribution of CRC among Patients based on the site of Tumour

Bleeding per rectum was the predominant symptom in 144 patients, of which 121 were left sided tumors which was statistically significant (with a p-value of 0.0001). Of the 39 patients with abdominal pain as the predominant symptom, 14 patients had right sided tumors and 25 had left sided tumors. There was no association of abdominal pain and side of the tumor [p value-1.0]. Of the 31 patients who had right iliac fossa mass, 19 were right sided and 12 were left sided which showed a statistical significance [with p value-0.0001]. The distribution of the presenting symptom and side is shown in the Figure 4.

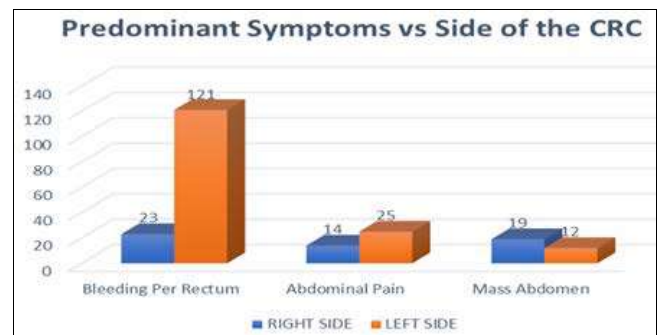


Fig 4: Distribution of Predominant Symptoms and side of the Tumour

The morphological distribution of the tumors was proliferative growth (59%), ulcero-proliferative growth (27%) and ulcer (14%) respectively as shown in Figure 5.

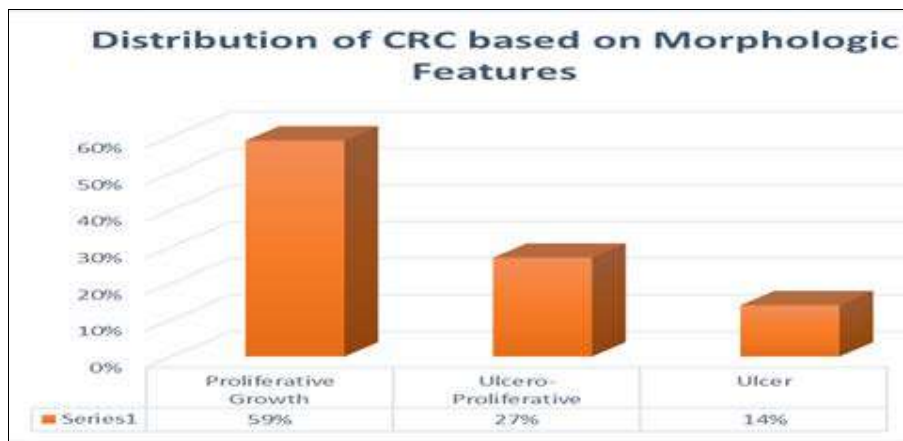


Fig 5: Distribution of CRC based on Morphological Features

Discussion

Though colorectal cancer is a common cancer in developed countries worldwide, the incidence is on the rise in developing countries [14, 15]. The risk of CRC occurrence increases with advancing age. In our study, 32.2% of patients were in the age group of 61-70 years. In US, more than 90% CRC showed up in age group of >50 years [16]. Studies from Korea and Japan show an increasing trend of CRC in Asia, mainly attributed to food habits and lifestyle changes [17, 18]. Like other developing countries, colon cancer in India is less when compared to the West, but the incidence is steadily increasing. According to recent studies, in India there is a rise in CRC in younger age [19, 20]. In our study, 27 patients [12.6%] were under 40 years of age. Another study from Central India shows 39% of the patients were less than 40 years of age and the mean age was 43 years [21]. The early CRC can be the effect of genetic mutation and predisposing factors like inflammatory bowel disease and hereditary polyposis syndrome, along with alcohol, lack of physical activity, junk food and tobacco use acting as associated risk factors [22]. Another understanding for the current rise in incidence could be easy availability and accessibility of advanced investigations like colonoscopy, even in rural areas.

Of the 214 patients, 141 (65.9%) were male and 73 (34.1%) were female. From our data we interpreted that the proportion of CRC in male was higher than in female. The ratio of male to female was 1.9:1. This male preponderance of colorectal cancers in our study is similar with other national data [1, 3].

In our study, 26.2% patients had right side tumors and 73.8% had left sided tumors which was similar to a study done by Gomez *et al.* which showed 69% were left sided colorectal cancers [23]. Though our study showed majority of tumors on the left side, studies from Korea and Japan show an increase in right sided tumors.

Among the 158 patients with left colon cancer 96 patients (60.8%) had tumor in the rectum. Intake of less fiber diet and added junk food, along with changes in biliary metabolism may be a reason for preponderance of cancers in the rectum. Corroborative studies in India, similar to ours, have shown rectum as the most common site involved.

Our study showed statistical significance between bleeding per rectum with left sided tumors and mass with right sided tumors respectively. The study done by Peedikayil *et al.* also showed association between bleeding per rectum with left side cancers and palpable mass with right side cancers substantiating our result. Though there is association between bleeding PR with distal CRC and palpable mass with proximal CRC, it may not be the same all over India and the world.

Limitations of our study

There are studies showing association between diabetes and colorectal cancer. Studies from United States and Europe show association of obesity in 9-15% colorectal cancers. We were not able to collect data pertaining to diet, comorbid illness and BMI of the patient which could have had an association with colorectal cancer.

Conclusion

From our analysis, though the occurrence of CRC is more common in the age group of 61-70, there is an increasing trend in younger age (<40). Majority of cancers in our study were on the left side with male preponderance. Our study showed bleeding per rectum as the predominant symptom for colorectal cancer with significant association with left sided tumors which can be easily identified by screening sigmoidoscopy. In rural population like ours, per rectal examination, sigmoidoscopy and colonoscopy are considered embarrassing making it difficult for us to convince the patient. Hence, any patient more than 40 years of age with bleeding per rectum should be explained the need and benefits of screening sigmoidoscopy/colonoscopy and must be encouraged to undergo the same. Persistent motivation regarding the need for screening colonoscopy is important in rural areas for early diagnosis and treatment, to reduce disease specific morbidity and mortality.

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