

## Original Research Article

# Pattern of colorectal cancers at tertiary rural hospital in Central India

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### ABSTRACT

**Background:** In India the incidence of colorectal cancers is moderate to low but the five year survival of colorectal cancers in India is one of the lowest in the world. The poor survival rate warrants the assessment of reasons. Population based data is available only from few regions in India. Hospital based data may give a crude idea regarding the cancer distribution in the respective areas.

**Methods:** The present study was carried out at a tertiary rural hospital in central India. A total of 216 cases of primary malignant tumors of colon and rectum presenting over a period of 10 year interval from 1994 to 2004 were analyzed for demographic and clinical presentation.

**Results**The peak incidence of cancer of colon and rectum was in 7<sup>th</sup> and 6<sup>th</sup> decade respectively. The M: F ratio was found to be 1.6: 1 for colorectal cancers combined. The mean age of presentation was 50.6 years. 25% patients with colorectal cancers were below age of 40 years. 48.3% patients with cancer of colon and 79.5% with cancer of rectum had locoregional disease, while 38.2% and 15.7% had distant spread respectively.

**Conclusions:** Rectal cancer was found to be much commoner than colonic cancer supporting the case of independent etiologies. The incidence of colorectal cancer in young patients was high. Disease confined to the primary organ when the patient is first treated was very low.

**Keywords:** Colorectal, Cancer, Demographic

### INTRODUCTION

Colorectal cancer is the third most commonly diagnosed cancer in males and second in females with more than 1.4 million new cancer cases every year worldwide.<sup>1</sup> The five year survival of colorectal cancers in India is one of the lowest in the world and falling in some registries.<sup>2</sup> A major obstacle in improving treatment results in colorectal cancers in developing country like ours is the advanced stage patients present themselves with unfortunately. Well established population-based data is available only from very few regions in India.

Population registries in India cover only 7.45% population so some amount of under reporting is

expected.<sup>3</sup> Hospital based data can give idea of cancer distribution in those areas.

### Objectives

#### General objective

General objective was to study the pattern of colorectal cancers during 10 years at a tertiary rural institute in central India.

#### Specific objective

Specific objectives were to study the demographic variable in colorectal cancers; to study the distribution of subsites in colorectal cancers; and to study the extent of

disease at presentation in colorectal cancers at tertiary rural institute in central India.

**METHODS**

The present study of pattern of colorectal cancers was carried out at Kasturba Hospital, Sevagram which is a tertiary rural hospital in Central India. A total of 216 cases of primary malignant tumors of colon and rectum were seen and treated during the 10 years interval from July 1994 to June 2004. Out of the 269 cases seen in 10 years, 216 cases were analyzed and 53 incomplete records were not included in further analysis.

**Study design**

The design of the study was cross-sectional.

**Sampling**

Consecutive case series of all colorectal cancer patients seen at Kasturba Hospital Sevagram in between July 1994 – June 2004 were included.

**Inclusion criteria**

All colorectal cancers patients in between July 1994 – June 2004 were included in the study.

**Exclusion criteria**

Patients with incomplete records and patients not confirming with tissue diagnosis were excluded from the study. The microscopic confirmation of diagnosis

included: histopathological examination from either biopsy or operative specimen; histopathological examination from metastasis if present; and cytological diagnosis. Tumors were staged according to extent of disease i.e. local, loco regional and distant. Information was recorded in a specially designed proforma and the data later analyzed.

**Statistical methods**

This being a descriptive study, continuous variables were expressed as means whereas nominal data were expressed as numbers and percentages. Statistical analysis was performed using Microsoft excel and statistical package for the social sciences (SPSS) version 23.0 (International Business machines, Armonk, New York, USA).

Ethical approval was obtained from institutional ethics committee.

**RESULTS**

Peak incidence of cancer of colon and rectum was in 6<sup>th</sup> decade for cancer of rectum and 7<sup>th</sup> decade for cancer of colon as shown in Table 1. The male: female ratio was 1.6: 1 for colorectal cancers combined. For colon cancers it was 1.2: 1 whereas rectal cancer it was 2.09: 1.

25% patients with colorectal cancer were below the age of 40 years as seen from Table 2. The youngest patient was male of 17 years.

**Table 1: Age distribution by sex for patients with colorectal cancer.**

Age (years)	Colon		Rectum		Rectum		Rectum		M: F
	No.	%	M	F	No.	%	M	F	
10-19	6	6.7	3	3	1	0.8	1	0	1.6: 1
20-29	3	3.3	2	1	7	5.5	4	3	
30-39	9	10.1	6	3	28	22	15	13	
40-49	12	13.5	10	2	20	15.7	12	8	
50-59	21	23.6	11	10	31	24.4	16	15	
60-69	27	30.4	18	19	24	18.9	14	10	
70-79	10	11.3	8	2	14	11	9	5	
80-89	1	1.1	1	0	2	1.6	1	1	
<b>Total</b>	89	100	49	40	127	100	78	49	

**Table 2: Colorectal cancers in the young (<40 years).**

Site	No.	%	Male	Female
Colon	18	22.7	11	7
Rectum	36	33.6	19	17

Table 3 showing the symptomatology profile of patients with cancers of colorectum depicts anorexia and altered bowel habits were the most common symptoms of presentation followed by bleeding per rectum.

Table 4 showing the distribution of colorectal cancers by anatomic subsite suggest that rectum is involved more than the colon. Ascending colon was the commonest site for cancer of colon while the flexures were the least common.

**Table 3: Symptomatology profile of patients with cancers of colorectum.**

Symptoms	No. of patients	%
Acute obstruction	13	8.7
Abdominal pain	102	47.2
Bleeding PR	123	56.9
Anorexia	154	71.2
Altered bowel habits	136	62.9
Abdominal mass	30	16.6

**Table 4: Distribution of colorectal cancer by anatomic subsite.**

Site	No. of patients	%
Caecum	10	4.6
Ascending colon	26	12
Hepatic flexure	4	1.8
Transverse colon	9	4.1
Splenic flexure	3	1.3
Descending colon	16	7.4
Rectosigmoid	21	9.7
Rectum	127	58.7
Total	216	100

The middle third of the rectum was the commonest affected subsite in the rectum as seen in Table 5.

**Table 5: Distribution of rectal cancer by anatomic subsite.**

Site	No. of patients	%
Upper third	8	6.3
Middle third	60	47.2
Lower third	59	46.5

Maximum patients presented with more than ¾ circumference involvement of the rectum as denoted in Table 6. Table 7 suggests that mean duration between onset of symptom and time of presentation was 5.4 months in cancer of rectum and 5.2 months in cancer of colon.

**Table 6: Sectoral distribution of cancer rectum.**

Circumference	No. of patients	%
Full circumference	33	20.8
¾ circumference	72	45.3
½ circumference	44	27.6
¼ circumference	10	6.3

**Table 7: Time interval between onset of symptoms and time of presentation.**

Site	Mean duration in months	Range in months
Colon	5.2	1-18
Rectum	5.4	1-24

Table 8 shows that maximum number of patients presented with locoregional disease i.e. 48.3% in cancer of colon and 79.5% in cancer of rectum while 38.2% and 15.7% presented with distant spread respectively.

**Table 8: Staging of colorectal cancer according to extent of disease.**

Site	Local no. (%)	Locoregional no. (%)	Distant no. (%)
Colon	12 (13.4)	43 (48.3)	34 (38.2)
Rectum	6 (4.7)	101 (79.5)	20 (15.7)

## DISCUSSION

The incidence rates of colorectal cancers in India are moderate to low but the survival rates are not encouraging. The study of pattern of colorectal cancers was carried out at Kasturba hospital, Sevagram which caters predominantly to the rural population of Central India.

Data from present study was analyzed to find out the mean age of presentation of cancer of colon and rectum and compared with other authors. Corman et al, Falterman et al, and Me Deumott et al reported a mean age of 62 years, 63 years and 60 years.<sup>4-6</sup> In the present study the mean age was found to be lower as compared to these studies. In was 50.6 years. The peak age of incidence in colorectal cancers was in the 6<sup>th</sup> and 7<sup>th</sup> decade in present study. This was higher when compared to other India study by Leena et al and Corman et al reported age of presentation as ranging from 22-99 years.<sup>7</sup> In present study this was from 17 to 89 years. The incidence of colorectal cancers in young i.e., less than 40 years of age was analysed in the present study and it was found that 25 % patients were below the age of 40 years. The youngest of them was 17 years only. This is high as compared to that reported by Tahiliyani et al as 8.09%. While O'Connel and Goligher et al reported an incidence of 7% and 7.5% respectively.<sup>8-10</sup> Parkin et al and Dinshaw have reported that for reasons that are largely speculative a high percentage of Indian patients with colorectal cancers are below 40 years.<sup>11-12</sup> This is of concern because colorectal cancers in young tend to be aggressive and associated with a poorer prognosis.

Corman et al reported M: F ratio of 1.08: 1 in patients with colorectal cancers while McDermott et al reported M: F ratio of 2: 1. In the present study it was 1.6: 1 and higher than that reported by Corman et al. The male predominance in colorectal cancers was in agreement with both the studies. Considering cancer of colon it was found to be 1.2: 1 while in cancer of rectum it was 2.09: 1.

Abrams observed 29% cancers in ascending colon and 28% in sigmoid colon.<sup>13</sup> Report from Tata Memorial Hospital indicates that in 53.4% patients, rectum was the site of cancer followed by sigmoid colon in 8.2% and

caecum in 7.4% patient. In the present study it was found that 58.7% cancers were located in the rectum followed by 12% in ascending colon and 9.7% in sigmoid colon. Flexures were the least common sites of involvement; the splenic flexure being involved in 1.3% and hepatic flexure in 1.8% patients. Thus, incidence of rectal cancer was found higher in both Indian studies i.e. the one from Tata Memorial Hospital and the present study as compared to studies by Abrams and Corman et al where cancer of colon was more common.<sup>14</sup>

The clinical features of cancer of colon and rectum were analyzed and it was found that altered bowel habit was seen in 62.9% patients while rectal bleeding was seen in 56.9% cases. Anorexia was seen in 71.2% cases. Williamson reported that 77% patients had altered bowel habit while 53% had loss of appetite.<sup>15</sup> Falterman reported abdominal pain in 65% patients, altered bowel habit in 58%, loss of weight in 54% patients, rectal bleeding in 51% patients, and growth in rectum in 40% patients. The finding of lower incidence of rectal growth in report by Falterman once again correlates well with the fact that it is less common than in Indian patients.

Smiddy reported that 17.6% patients of colorectal cancer present with acute obstruction.<sup>16</sup> Dutton reported this in 13.6% patients while Ohman found it in 14% patients.<sup>17</sup><sup>18</sup> In present study 8.7% patients presented with acute obstruction. Goligher reported that the upper third of rectum was involved in 36% patients with rectal cancer while 35% patients had growth in lower rectum while McDermott had reported maximum incidence in the middle third. In the present study it was found that the middle third of the rectum was involved in 47.2% cases and was the commonest site followed by the lower third in 46.5% cases. In the present study it was observed that only 6.3% patients with rectal cancer had involvement of 1/4<sup>th</sup> circumference of rectum. The remaining patients had half the circumference or more involved indicating late presentation.

The time interval between onset of symptoms and the presentation is important with regards to the nature of treatment.

Unfortunately, majority of the patients presenting to Kasturba Hospital had a mean interval of duration of symptoms above 5 months.

### **Limitations**

This being a retrospective cross-sectional study, data may not have been recorded in the same way or the same accuracy and consistency over time.

### **CONCLUSION**

In the present study rectal cancer was found to be much common than colonic cancer. This finding would support the case of independent etiologies for colonic and rectal

cancer. The incidence of colorectal cancer in young was high. The proportion of cases in which the lesion was confined to the primary organ when the patient was first treated is a disappointing index of the failure to educate the patient regarding the need for early diagnosis and treatment of colorectal cancers.

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