



Colorectal Carcinoma: Should the Young Be Worried?

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ABSTRACT

Introduction: In India, colon cancer ranks thirteen among new cases as well as in terms of deaths while rectal carcinoma ranks sixteenth among new cases and fifteenth among death. **Objective:** Colorectal carcinomas are usually cancers of old age but nowadays there has been a steady increase of colorectal carcinoma among young adults. To confirm this observation, we retrospectively analyzed the data for age, sex, site of primary tumour and histopathological type in our institution. **Methods:** A retrospective study was conducted in the Department of Pathology. Histopathological reports were reviewed for all colorectal carcinoma from January 2016 to December 2020 for type and staging. Demographic data including age and sex were collected and studied. All non-malignant colorectal pathologies and carcinoma of anus were excluded. **Results:** The total of 215 patients with colorectal cancer were divided into two groups, group A (>40 years) and group B (\leq 40 years) with the majority of 142 patients falling in group A. Male:Female ratio in group A was 62:80 and in group B was 31:42, common site in both groups were colon-group A (53.5%) group B (50.6%). Histopathological grading revealed well differentiation to be most common (group A-49.2%, group B-58.9%) followed by moderately differentiated (group A-42.2%, group B-28.7%) and poorly differentiated (group A-8.4%, group B-12.3%). Most common T stage in both groups were T2 (group A-84.3% and group B-69.4%) and N0 (group A-67.1% and group B-72.2%) and most common histological type was Adenocarcinoma, NOS (group A-91.5% and group B-71.2%). **Conclusions:** Excellent screening modalities and treatment is available for colorectal cancer and remains underutilized. Awareness among health care providers and patients is the need of the hour.

Keywords: Colorectal carcinoma, Young, Histopathological, \leq 40 years

INTRODUCTION

Worldwide, colorectal carcinoma is the third most common cancer and accounts for 10% of newly detected cancers. It stands second in cancer related deaths [1].

In India colon ranks thirteen among new cases as well as in terms of deaths while rectal carcinoma rank sixteenth among new cases and fifteen among death [2].

The risk of colorectal carcinoma starts to increase after the age of 40 and then increases sharply at 50-55 years; it then doubles every subsequent decade. Data from GLOBOCAN indicates that the incidence of CRC in the United States decreases at 50 years of age, and at 20-29 years the incidence increases. The incidence of CRC at the age of 20-49 in 1975 was 9.3/100,000 and it increased to 13.7/100,000 in 2015, an increase of about 47.31%, while the incidence in the age group above 50 decreased [3].

We at our institution retrospectively analysed the data for age, sex, site, histopathological type and invasion of CRC to observe the trends in the population our institution caters to.

MATERIALS AND METHODS

The retrospective study was conducted in the Department of Pathology, Assam Medical College, Dibrugarh, which treats patients from Upper Assam.

Histopathological reports were reviewed for all colorectal carcinoma from January 2016 to December 2020 for type

and staging. Demographic data including age and sex were collected. All non-malignant colorectal pathologies and carcinoma of anus were excluded.

The patients were divided into two groups-a younger group below 40 years of age and above 40 years.

Data was analysed using SPSS 16.0 using appropriate descriptive statistical analysis. p-value ≤ 0.05 was taken as statistically significant.

RESULTS

A total of 215 patients were diagnosed with colorectal cancer.

Age range was 11-90 years and mean age at diagnosis was 42.9 years. A total of 73 (33.9%) patients were below the age of 40 years (Table 1).

Table 1 Age distribution of colorectal carcinoma

Age	Number	Percentage
<10	0	0%
11-20	5	2.30%
21-30	20	9.30%
31-40	48	22.30%
41-50	50	23.20%
51-60	51	23.70%
61-70	32	14.80%
71-80	5	2.30%
>81	4	1.80%
Total	215	100%

CRC were more common in women in both age group with 57.5% in ≤ 40 years and 56.3% in older age group (Table 2).

Table 2 Sex distribution of colorectal carcinoma

Sex	>40 years	≤ 40 years	p-value
Male	62 (43.6%)	31 (42.4%)	0.86
Female	80 (56.3%)	42 (57.5%)	

Common site for CRC for both groups was colon with only slight percentage (1.3%) predominance towards colon in the younger age group and 53.5% in older age group. However, the results were not statistically significant (Table 3).

Table 3 Site distribution of colorectal carcinoma

Site	>40 years	≤ 40 years	p-value
Colon	76 (53.5%)	37 (50.6%)	0.69
Rectum	66 (46.4%)	36 (49.3%)	

In young patients, majority of CRC were well differentiated (58.9%), followed by moderately differentiated (28.7%) and poorly differentiated (12.3%). In the older age group, differentiation was well (49.2%), moderate (42.2%) and poor differentiation (8.4%). Results were not statistically significant (Table 4).

Table 4 Histopathological grading among colorectal carcinoma patients

Grading	>40 years	≤ 40 years	p-value
Well differentiation	70 (49.2%)	43 (58.9%)	0.233
Moderate differentiation	60 (42.2%)	21 (28.7%)	
Poor differentiation	12 (8.4%)	9 (12.3%)	

For statistical analysis, moderate and poor differentiation was grouped together.

The results were not statistically significant.

Overall T2 stage (invasion up to muscularis propria) was seen in majority of cases (Table 5).

Table 5 pT staging in CRC patients

pT	>40 years	≤ 40 years	p-value
T1	4 (6.2%)	3 (8.3%)	0.138
T2	54 (84.3%)	25 (69.4%)	
T3	2 (3.1%)	8 (22.2%)	
T4	4 (6.2%)	0 (0%)	
Total	64	36	

For statistical analysis, T1 and T2 were grouped together and T3 and T4 were grouped together.

The results were not statistically significant.

N0 is in clear majority in both the groups (Table 6).

Table 6 N staging in CRC patients

N	>40 years	≤40 years	p-value
N0	43 (67.1%)	26 (72.2%)	0.764
N1	13 (20.3%)	7 (19.4%)	
N2	08 (12.5%)	3 (8.3%)	
Total	64	36	

For statistical analysis, N1 and N2 were considered together.

The results were not significant.

The pT and N staging was in only 100 patients as for the other 115 patients only small biopsy specimens were sent.

The two most common histological type of CRC is Adenocarcinoma, NOS (>40 years: 91.5%, ≤ 40 years: 71.2%) and Mucinous Adenocarcinoma (>40 years: 7%, ≤ 40 years: 27.3%) (Table 7).

Table 7 Histological type among CRC patients

Type	>40 years	≤ 40 years
Adenocarcinoma, NOS	130 (91.5%)	52 (71.2%)
Mucinous adenocarcinoma	10 (7.0%)	20 (27.3%)
Carcinoma with sarcomatoid component	1 (0.7%)	0 (0%)
Signet-ring cell carcinoma	0 (0%)	1 (1.3%)
Adenosquamous carcinoma	1 (0.7%)	0 (0%)

DISCUSSION

The definition of age to be considered young is controversial. In the analysis of 6425 patients from 55 publications, O'Connell, et al. found that 37 manuscripts considered young those below 40 years of age, while 14 (25%) and 4 (7%) defined as young those below 30 and 35 years of age, respectively. In the literature, most publications refer the CRC incidence in patients less than 40 years of age [4-7].

The mean age at this study was 42.9 years while in a similar study by Motpalli PR, et al. was 47 years [8].

33.9% of patients were young and diagnosed with CRC in my study which is comparable to studies by Kumari P, et al. and Sudarshan V, et al. in which 24.17% and 39.05% were young [9,10].

Majority of the CRC patients were women in our study contrary to other studies which showed male predominance [9,10].

In our institution colon (50.6%) was the more common site, well differentiated (58.9%) with T2 (69.4%) and N0 (72.2%) stage and majority being Adenocarcinoma, NOS (71.2%) followed by mucinous carcinoma (27.3%) in the young. In the older age group similar findings were seen.

In the study by Sudarshan V, et al. showed rectal predominance in both age group however younger patients majority had poorly differentiated mucin-secreting adenocarcinoma and higher T3 (54.94%) and N1 (49.45%) staging [9].

In the study by Kumari P, et al. in which rectum was the predominant site (62.64%) with poor differentiation (76.22%), T3 stage (48.67%) and N1 (55.9%) in the young [10].

In the study by Laskar RS, et al. showed male predominance (57.1%) with poorly differentiated rectal carcinoma (55.7%) and T4 (50.0%) among the young [11].

In a study by Chou CL, et al., younger patients had a higher incidence of mucinous cell type, poorly differentiated adenocarcinoma and more advanced diseases [12].

In our study there was no statistical difference among the age groups >40 and ≤ 40 years in terms of sex, site or staging of colorectal carcinoma, indicating in our setting the old and the young have relatively same presentation.

The major limitation of the study is the lack of data on survival. This is attributed to majority of patients belonging to lower socio-economic strata, hence lack of available resources to come for follow-up.

CONCLUSION

Colorectal carcinoma is considered a disease of the elderly however various studies have shown that colorectal carcinoma in the young is more aggressive. In the present study it was observed that in case of young patients only punch biopsy specimen was usually sent, this could be the reason for early detection of colorectal cancers unlike other studies. Excellent screening modalities and treatment is available for colorectal cancer and remains underutilized. Awareness among health care providers and patients is the need of the hour.

DECLARATIONS

Conflicts of Interest

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