
ORIGINAL ARTICLE**Epidemiological, Clinico-Pathological Profile and Management of Colorectal Carcinoma in a Tertiary Referral Center of Eastern India**

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Abstract:

Background: The colorectal carcinoma is a common cancer in males and in females and second most common cause of death in Europe and third commonest cause in the United States. Recent Indian study shows that there is a significant increase in incidence of colonic carcinoma but the incidence of rectal carcinoma remains steady. **Aims and Objectives:** This prospective study was undertaken to assess the clinico-pathological profile and management of colorectal malignancy in a tertiary referral institute of eastern India and to compare the above data with the data from the western world. **Material and Methods:** The patients admitted with the diagnosis of colorectal carcinoma in IPGME and R (SSKM), a tertiary hospital in eastern India, between January 2006 and December 2010, were included in this study. These patients were prospectively analyzed for age, sex, site of the lesion, clinical presentations, nature of the growth and types of surgery performed. **Results:** 192 patients were included in this study of which 78 patients were of younger age group (≤ 35 years) and 114 patients were older (> 35 years). The mean age of this series was 44.1 years. The male to female ratio of younger and older group was 1.68:1 and 1.85:1 respectively. Rectal bleeding was the commonest symptom irrespective of age and sex. Pain in abdomen (39.7%) and intestinal obstruction (21.8%) were the predominant

presenting features in the patients of younger group whereas weight loss was commonest presenting feature in the patients of older age group. Most common histological type, irrespective of age, was adenocarcinoma (93.8%). Overall, right sided colonic growth was more common in females while rectum was the commonest site of affection in males. The patients of younger age group presented in advanced stage like Duke's C and Duke's D. **Conclusions:** The younger patients are diagnosed with colorectal carcinoma. Cancer of right colon is more common than that of left. The younger patients present more often with abdominal pain and intestinal obstruction whereas older patients present more with weight loss. The younger patients present at an advanced stage of disease where only palliative treatment is possible.

Key Words: Colon, Rectum, Carcinoma, Pathology, Epidemiology, Management

Introduction:

Colorectal carcinoma is the second most common cancer in males and fourth most common cancer in females. This is the second most common cause of death in Europe and third commonest in the United States [1]. The incidence of colorectal carcinoma worldwide is 6.5 and 7.7/100000 females and males respectively [2]. In developed countries incidence varies from 50-60/100000 population [2]. One recent In-

dian study shows that there is a significant increase in incidence of colonic carcinoma but the incidence of rectal carcinoma remains steady [3]. Colorectal carcinoma is the most common malignancy of gastrointestinal tract. The risk of developing colorectal carcinoma increases with age. It has been seen that 90% of new cases are diagnosed in patients over 50 years of age [4]. Recent literature also suggests that there is gradual shift of colon cancer towards right side of colon [5]. Previously this cancer was the disease of old age but now younger population is more commonly affected and they present in a more advanced stage [3]. It is also seen that right sided colon cancer is more in females and rectal cancer is commoner in male patients [6]. Curative surgical resection of colorectal carcinoma is associated with a 5 years survival rate of around 90% [7].

Material and Methods:

This prospective study was conducted in Institute of Post Graduate Medical Education and Research, (SSKM) hospital, a tertiary referral center of eastern India over a period of 5 years (from Jan. 2006 to Dec. 2010). Study tools were questionnaire, physical examination, investigations [routine blood tests, colonoscopy, ultrasonography (USG) and contrast enhanced CT scan (CECT)] and histopathological reports. Parameters of this study were age, sex, site of lesion, clinical presentations, type of surgery and histology of the lesion. Patients of either sex presenting with diagnosis of colorectal carcinoma were included in this study. Exclusion criteria was age <12 years. Data were analyzed by Fisher's exact test 2 tailed and chi-square tests using the standard statistical software SPSS.

Results:

192 patients included in this study were grouped under the broad headings of younger (≤ 35 years of age) and older (> 35 years of age) group. Out of 192 patients, 40.6% (n=78) were in the former and 59.4% (n=114) patients were in the latter group. The mean age of patients of the younger age group was 27.2 ± 5.8 years and that of the older age group was 55.7 ± 10.3 years. The male/female ratio in the younger and the older group was 1.68:1 and 1.85:1 respectively. The youngest patient was of 14 and oldest was of 79 years of age. The overall mean age at presentation was 44.1 years with the peak age of presentation in the 4th decade.

Irrespective of the sex, the overall commonest symptom was rectal bleeding (37.5%). Other modes of presentation included abdominal pain, altered bowel habit, anemia, intestinal obstruction, abdominal mass, weight loss and hepatomegaly. Most of the patients presented with more than one of the above symptoms and signs.

Interestingly, in this series, the common modes of presentation in the younger age group were abdominal pain (39.7%, p value < 0.001) and intestinal obstruction (21.8%, p value 0.023), which were statistically significant.

In older age group the common presentations were weight loss (79.8%), anemia (62.3%), rectal bleeding (41.2%) and altered bowel habit (19.3%). Weight loss was the commonest presentation (79.8%, p value < 0.001) which was statistically significant.

The commonest histological type of this series was adenocarcinoma (93.8%, n=180). Moderately differentiated adenocarcinoma was the commonest subtype affecting 45% of cases,

Table 1 - Number of male & female patients of ≤ 35 and > 35 years age & their clinical presentation, histopathology, site of lesions Duke's stager, type of surgery of colorectal carcinoma.

Sr. No.	Parameters	≤ 35 yrs	> 35 yrs	P value
1	No of Patients & Sex:			
	Male	49(62.82%)	74(64.92%)	
	Female	29(37.18%)	40(35.08%)	
2	Clinical presentation:			
	Rectal bleeding	25(30.05%)	47(41.22%)	0.226
	Altered bowel habit	11(14.10%)	22(19.29%)	0.437
	Intestinal obstruction	17(21.79%)	11(9.64%)	0.023
	Abdominal mass	24(30.75%)	21(18.42%)	0.057
	Weight loss	44(56.41%)	91(79.80%)	<0.001
	Hepatomegally	08(10.25%)	10(8.77%)	0.803
		0.316		
3	Histopathology:			
	Adenocarcinoma	72(92.30%)	108(94.73%)	
	Well diff	19(26.38%)	32(29.629%)	
	Mod. Diff	28(38.88%)	53(49.077%)	
	Poorly diff	25(34.72%)	23(21.29%)	
	Sq. cell carcinoma	01(1.28%)	02(1.75%)	
	NHL	04(5.12%)	02(1.75%)	
	Composite tumour	01(1.28%)	02(1.75%)	
		0.516		
4	Site of lesion			
	Rt. Colon	25(32.05%)	39(34.21%)	
	Lt. colon	25(28.20%)	30(26.31%)	
	Rectum	31(39.74%)	42(36.84%)	
	synchronous		03(2.63%)	
		<0.001		
5	Duke's stage			
	A	1(1.28%)	20(17.54%)	
	B	8(10.25%)	40(35.08%)	
	C	50(64.10%)	40(35.08%)	
	D	19(24.35%)	14(12.28%)	
6	Surgery			
	Rt. hemicolectomy	13	29	
	Extnd. rt. hemicolectomy	7	14	
	Lt. hemicolectomy	13	15	
	Extnd. Lt. hemicolectomy	7	11	
	APR	6	11	
	AP	12	10	
	LAR	6	15	
	Colostomy	16	12	
	Total colectomy		13	

out of which 39.5% were mucin secreting variety. Poorly differentiated adenocarcinoma, in this series, was 26.7%, out of which 58.3% cases were signet cell type. The proportion of poorly differentiated adenocarcinoma, mucin secreting and signet cell type, was higher in younger age group but was not statistically significant (p value 0.316).

In this series we had considered all growths involving the colon from caecum up to right 2/3rd of transverse colon as the “right colonic” growth and those involving the left 1/3rd of the transverse colon up to the recto-sigmoid junction as “left colonic growth”.

When colonic and rectal carcinomas were considered together, the commonest site was the rectum (39.7% and 36.8% in younger and older age groups respectively). Irrespective of age, 33.3% of colorectal carcinomas involved the right colon. If colonic carcinoma was considered in isolation then right colon became the commonest site of affection. The female patients irrespective of age presented more with the lesions in the right colon. The incidence in younger age group was 41.4% and in older age group was 42.5%.

In our series, overall, the commonest stage at presentation was Duke Stage C (46.9%). The patients of younger age group presented in advanced stage such as Duke C (64.1%) as well as Duke D (24.6%) which was statistically significant (p value <0.001). 28 patients presented in the emergency for intestinal obstruction and needed emergency colostomy. Of these 16 patients were in the younger age group and 12 in the older age group. After doing routine investigations and histopathological confirmation, all patients received neo-adjuvant therapy. 14 out of 16 patients in the younger age group under-

went definitive treatment, anterior resection ($n=9$) and abdomino-perineal resection ($n=5$) while 2 patients resistant to neoadjuvant therapy, had to live with palliative colostomy. In the older age group 4 patients underwent definitive treatment in the form of abdomino-perineal resection. Remaining 8 patients were unfit for definitive procedure due to multiple comorbidities.

Discussion:

Though colorectal carcinoma is a disease of old age, now-a-days more younger patients are seen [8]. Proportion of the disease in the younger age group in this study has been 40.6%. A study on white and oriental population with colorectal carcinoma has showed the mean age at diagnosis to be 69.8 years in white patients vs. 48.3 years in oriental patients. In our study the mean age has been 44.1 years. According to the study by Paymaster, ratio of colorectal carcinoma in India in male to female is 2.9:1 [3]. Our study has shown a ratio of male to female in the younger and older age group as 1.68:1 and 1.85:1 respectively, indicating an overall male preponderance. Some reported series show the commonest presentation to be bleeding per rectum [9, 10]. This has been true for our study also (37.5%). Proportion of other symptoms, as shown in Table-1, are approximately same as in other series. The commonest histological type of our series has been moderately differentiated adenocarcinoma (45%). This finding simulates well with those reported by Dukes of 56.7% in the year 1937 [11]. Mucinous adenocarcinoma and signet ring cell tumors in some reported series have been 5-15% [12, 13] and 1% [4] respectively. Our study also corroborates the above reported find-

ings. Western literature shows 2/3rd of the colonic carcinoma are left sided [14]. Review of recent literature suggests that there is a gradual shift of colon cancer towards right side [15-18]. In our series we also have found that the right colon is more commonly affected (33.3%) than left colon if we consider colonic cancer in isolation. If growths involving rectum are also taken into consideration then rectum becomes the commonest site of affection in either age group. About 60-67% of young patients with colorectal cancer present with advanced disease [19, 20], infiltrating tumor edge, venous, lymphatic and perineural invasion [21]. In our series, overall presentation in Duke C stage has been 46.9%, while that in the patients of younger age group has been 64.1%.

Conclusion:

Our study indicates a shift in the incidence of colorectal carcinoma towards younger age group. It also reaffirms the general trend towards a proximal right sided migration of colonic carcinoma which has been reported in a number of population based studies [22]. The commonest presenting symptom of colorectal malignancy is bleeding per rectum. The younger patients present more often with abdominal pain and intestinal obstruction than their older counterparts whereas older patients present more with weight loss as compared to younger patients. Our study also corroborates the recent worldwide trend where younger patients are presenting at an advanced stage of disease where only palliative treatment is possible. Our study has some obvious drawbacks like short period of study and small sample size. A large sample size is necessary to draw an ap-

propriate and accurate conclusion.

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