

Original Article

Demographic Profile and Site Distribution of Colorectal Carcinoma in Bangladesh

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ABSTRACT

Aim of the study: This study was designed to see the demographic profile of colorectal carcinoma in Bangladesh. **Methods:** This study was conducted at the Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM) Hospital Dhaka from 20.10.2007 to 20.10.2008. Histologically confirmed patients of carcinoma colon among all patients undergoing colonoscopy during the mentioned period were included. Their epidemiological and clinical history and investigation reports were recorded. The mean and percentages were calculated. **Result:** Out of 1297 patients undergoing colonoscopy for various indications, 140 patients had histologically proved colorectal carcinoma. Of the 98 (70%) were male and 42 (30%) were female. The mean age of CRC in males was 47.07 years (SD 16.779), ranging from 15-80 years. The age of female patients was ranging from 14 - 70 years (mean 41.41 SD 14.654, range 14-70). Carcinoma in the rectosigmoid region was

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more common among patients in an earlier age group. **Conclusion:** CRC is more common among males. But females are affected at an earlier age. Rectosigmoid carcinoma occurred predominately among patients early in the age group.

Keywords: Carcinoma, Colonoscopy, Colorectal

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INTRODUCTION

In the United States, colorectal cancer (CRC) is the second leading cause of cancer death. About 6% of Americans are at risk of developing CRC. Almost all colorectal cancers are adenocarcinomas, which usually form bulky exophytic masses or annular constricting lesions.^[1] The incidence of colorectal carcinoma was relatively unchanged during the last 30 years, while the mortality rate has decreased, particularly in females. Colorectal carcinoma generally occurs in persons more than 50 years 2. The risk of developing colorectal cancer increases with age. Age of about 90% of newly diagnosed cases are over 50 years.^[2] A recent report shows a gradual increase in the incidence of colonic carcinoma in a younger population.^[3] Incidence of Colorectal carcinoma is higher among males.^[4] Most colon cancers are found on the left side.^[5] But recent reports suggest a gradual shift of colon cancer toward the right side of the colon.^[6] Reports also show that right-sided colon cancer is more common among females while rectal carcinoma is more common among males.^[7] The report shows that rural people are more affected by carcinoma colon in comparison to urban people.^[8] Incidence of colorectal carcinoma is higher among current and ex-smoker.^[9] In our country no reliable

data regarding the epidemiological feature of colorectal carcinoma is available. So this cross-sectional study was designed to see the epidemiological feature of patients with colorectal carcinoma

OBJECTIVE

General Objective

- To observe the demographic profile of colorectal carcinoma patients

METHODS

This cross-sectional study was conducted at BIRDEM Hospital, Dhaka, Bangladesh. The study duration was 1 year, from 20.10.2007 to 20.10.2008. Patients having histologically proven colorectal carcinoma among all undergoing colonoscopy for various indications were included in this study. Patients having no suspicion of colorectal carcinoma and patients having suspicion of colorectal carcinoma but the absence of histopathological confirmation of carcinoma was excluded from this study. Monthly income of a family of more than 30,000/- was regarded as rich, 15,000/- to 30,000/- upper-middle, 5,000/- to 15,000/- lower-middle, and less than 5000/- lower class. Protein intake of more than 80 gm

per day was regarded to be high. Smoking more than 10 sticks per day for more than 10 years was regarded to be significant. Betel nut chewing more than 2 nuts per day for more than 10 years was regarded to be significant. Informed consent was obtained from all the participants prior to the commencement of the study, and ethical approval was also obtained from the ethical review committee of the study hospital.

Inclusion Criteria

- Histopathologically confirmed carcinoma cases
- Patients who had given consent to participate in the study.

Exclusion Criteria

- Mentally ill.
- No suspicion of colorectal carcinoma.
- Unable to answer the criteria question.
- Exclude those affected with other chronic diseases etc.

RESULTS

Out of 1297 patients undergoing colonoscopy, 140 histopathologically confirmed patients of colorectal carcinoma were included in this study. Of them, 98 (70%) were male and 42(30%) were female. The male-female ratio was 2.33:1. The mean age of the CRC patients was 45.64 years with a range of 14-80 years. In this study mean age of males was 47.07 years and for the female participants it was 41.41 years (Table 1). Male CRC occurred at a significantly later age than females ($z=2.02, p<0.05$)(Table-1). In this group,

121(86.5%) patients were in between 20 to 69 years of age group (Table 2). In this series, 69 (49.28%) were from upper-middle socioeconomic classes (Table -3). Among the participants, 26 (18.57%) were housewives, 30 (21.42%) were businessmen and 25 (17.85%) were service holders. 25 (17.86%) of the patients had an education of graduation or higher levels, 47(33.57%) patients were smokers and 47(33.57%) patients were betel nut chewers, and only 04 (2.85%) were alcoholics. In this group, 105 (75%) lived in urban areas and only 45(32.14%) patients used to do physical activities for more than 2 hours per day. In this series 45(32.14%) had a history of increased carbohydrate, sugar, and sweet intake and 14(10%) patients had a history of increased red meat intake. Only 1(00.71%) patient had a family history of colon carcinoma (Table 3). 81(57.86%) of CRC patient was below 50 years of age and 59(42.14%) patient were above 50 years of age. For 59 (42.14%) of the patients, CRC occurred in the right colon and for the remaining 81(57.86%), CRC occurred in the left colon. Incidence of CRC differed significantly within ages above and below 50 years. In this study, left-sided CRC is more prevalent than right ($p=0.001$) and the difference was significant (Table-2). Macroscopically (colonoscopy view) 67(47.85%) was ulcero-proliferative, 15(10.71%) proliferative, 28(20%) fungating, 8(5.7%) constrictive and 06(4.28%) annular. All but two were adenocarcinoma histopathologically. The remaining two were squamous cell carcinoma

Table -1 Mean age of Male and female colon cancer (N=140)

Sex	Mean age	SD	n	Z value	P-value
Male	47.07	16.779	98	2.02	<0.02
Female	41.41	14.654	42		

Table-2 Age and site distribution of colorectal cancer (N=140)

Age group	Gross site		Total	P-value
	Right	Left		
< 50 years	24(17.14%)	57(40.71%)	81(57.86%)	0.001
>= 50years	35(25.00%)	24(17.14%)	59(42.14%)	
Total	59(42.14%)	81(57.86%)	140(100%)	

Table -3 Demographic data of CRC (N=140)

Character	Number	Percentage
Age stratification		
10-19	5	3.6%
20-29	20	14.3%
30-39	27	19.3%
40-49	29	20.7%
50-59	19	13.6%
60-69	26	18.6%
>70	14	10%
Occupation		
Housewife	26	18.57%
Businessman	30	21.42%
Service holder	25	17.85%
Farmer	12	08.57%
Students	16	11.43%
Others	31	22.14%
Education		
Graduate and above	25	17.86%
SSC and above	29	20.71%
Upto SSC	36	25.72%
Primary	47	33.57%
Illiterate	03	02.14%
Socioeconomic condition		
Rich	18	12.86%
Upper middle	69	49.28%
Lower middle	25	17.86%
Lower	28	20.00%
Addiction		
Smoking	47	33.57%
Betel nut	47	33.57%
Alcohol	04	02.85%

Ganja	01	00.70%
Food habit		
Increased red meat	14	10.00%
Increased fat	12	08.57%
Decreased vegetable, fiber, and fruit	26	18.57%
Increased carbohydrate, sugar, and sweet	45	32.14%
Family H/O colon cancer	01	00.71%
Urban life	105	75.00%
Physical activity (< 2 hour/day)	45	32.14%

Table -4 Age distribution of rectal and caecal cancer (N=140)

	Mean age	SD	n	Z value	P-value
Caecal cancer	54.24	13.419	33	5.08	<0.0001
Rectal cancer	38.16	15.789	55		

Fig-1 Sex distribution of CRC (N=140)

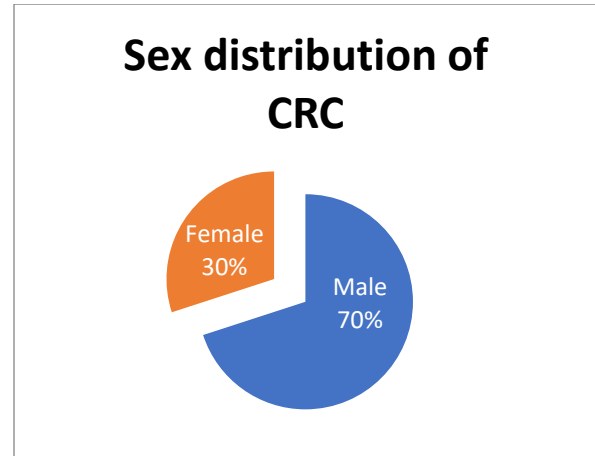
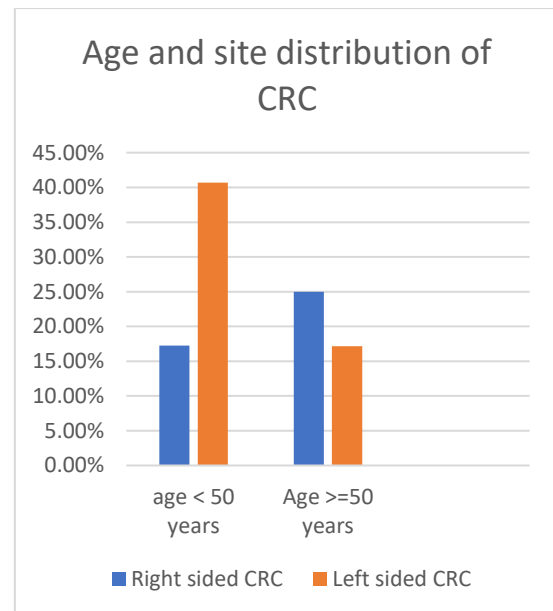


Fig-2. Age and site distribution of CRC (N=140)



DISCUSSION

In our study mean age of CRC patients was 45.64 years, which is consistent with that of Bangladeshi patients at the Royal London Hospital (44.2years),^[10] but markedly lower than that of patients of other nationals at Royal London Hospital and that of Bulgarian patients.^{[10],[11]} Colon cancer occurs in Bangladesh in an earlier age group than in patients of developed countries. Patients of Bangladeshi origin even

residing abroad are presenting with CRC at an early age. So genetic factors may be the cause. The age distribution of CRC showed a bimodal pattern, where females were affected at a significantly earlier age than males. Rectal carcinoma occurred earlier (mean age 38.16, SD 15.798) than caecal cancer (mean - 54.24, SD13.419). More than half of the total cases of CRC were below the age of 50 years in this study, which was consistent with other Bangladeshi reports.^{[12],[13]} In this study, males were affected almost two times more than females, which was consistent with other reports from our country.^{[12],[14]} Male female ratio in Bangladeshi patients at Royal London Hospital was similar to our report.^[10] Bangladeshi males were more affected in comparison to the western population.^{[10],[11]} Left-sided CRC occurred in the earlier age groups compared to the right side in our study, which was also supported by the study.^[15] In non-metastatic CRC, patients with right-sided CRC tend to be older, and females with larger tumors, are at a more advanced stage, and poorly differentiated, compared to patients with left-sided CRC.^[15] Colorectal cancer was accompanied by solitary or multiple polyps in 10.78% which was not consistent with a study conducted in Greece.^[16] This difference may be due to genetic and environmental factors. This study found no significant relations between alcohol intake with CRC in Bangladesh. Alcohol is less consumed in our country and a very small number of patients were alcoholics in our series. So no remark could be made regarding the causal

association of alcohol with CRC. In this series, rectosigmoid lesions were found among the younger group and caecal carcinoma was found in the older age group. Our study showed that right-sided colon cancer occurred more frequently than western population which may be due to genetic and environmental differences between the population groups.

Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSION

The study demonstrates that colorectal carcinoma occurs in Bangladesh at an early age and right-sided CRC is higher than in the western population. Male are more affected. So screening for CRC in Bangladesh should be at the age of 40 years with total colonoscopy.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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