Section: General Surgery

Original Research Article

PREVALENCE OF COLORECTAL CARCINOMA AMONG YOUNG ADDULTS WITH SPECIAL EMPHASIS ON SOCIO-DEMOGRAPHIC FACTORS AMONG PATIENTS ATTENDING TERTIARY CARE HOSPITAL IN PURULIA DISTRICT, WEST BENGAL, INDIA

Susanta Patra[1], Prabal Kanti Mandal[2], Joy Roy[3]

[1]Assistant Professor, Department of General Surgery, Deben Mahata Government Medical College & Hospital, Purulia, West Bengal, India.
[2]Assistant Professor, Department of General Surgery, Deben Mahata Government Medical College & Hospital, Purulia, West Bengal, India.
[3]Assistant Professor, Department of General Surgery, Deben Mahata Government Medical College & Hospital, Purulia, West Bengal, India.

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Corresponding Author:
Dr. Prabal Kanti Mandal,
Email: mandalprabalkanti@gmail.com

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ABSTRACT

Background: Colorectal cancer is the dominant type of neoplasm in several countries, accounting for about 10% of cancer related mortality worldwide. In India it is the fourth most incident cancer in both sexes. This study based on proportion of young adults attending tertiary care hospital in purulia, west Bengal were studied in terms of occurrence, recent trend of diseases and sociodemographic factors associated with its etiology.**Aims and Objectives:** To study the demographic factors and prevalence, site of occurrence amd morphological varieties of colorectal carcinoma in young addults. **Materials and Methods:** This cross sectional study was carried out in OPD of a government medical college, a tertiary center in the district of purulia ,west Bengal over 1 year from July 2021 to June2022.Sixty patients presenting with Colorectal carcinoma in the surgery OPD included in the study. After the patient were explained about the study and getting their consent, proper history was taken followed by proper examination of the patients were carried out. Confirmation of diagnosis by colonoscopic and histologic appearance of cancer were evaluated. The site of affection, morphology, histologic types were collected. All these data collected, were put in preformed datasheet. The outcome was observed and result and analysis were made. **Result:** Site of affection of carcinoma significantly differ in the two age groups where patients of age 20-40 have more tendency occurrence of rectal cancer while over 40 years have more tendency of left sided colon cancer. In our study, among 60 patients, occurrence of ulceroproliferative, proliferative and annular variety of colorectal cancer were38.33%, 55% and 6.67% respectively. Moreover young adults of age between 20 to 40 years proportionately had more poorly differentiated adenocarcinoma and higher occurrence of right sided colon cancer. **Conclusion:** Colorectal carcinoma in young addults seen mostly in right colon and rectum and it was more aggressive and associated with high mortality. There should be high index of suspicion in any young patient presenting with symptoms suggestive of a colorectal malignancy and should be evaluated promptly and treated aggressively.

INTRODUCTION

Colorectal carcinoma is the most common cancer in the gastrointestinal tract.[1] It is the third most common site for development of new cases of cancer as well as death in the people of United States irrespective of sex difference. This incidence even more profound amongst young adults in Asia compared to patients in western hemisphere. The migration of people from rural to urban areas, changing in physical activity, increase in life expectancy, smoking, alcohol consumptions, obesity and others contribute to the increasing pattern of the colorectal carcinoma in india.[2] Colorectal carcinoma contributes more than 4% of India's cancer incidence and mortality.[3] The incidence of

colorectal carcinoma is higher in older age group(>90% new cases in patients older than 50 years) but in some studies it was found that the incidence is increasing in young adults. Dukes and Bussey suggested a much higher rate of lymphatic metastasis in patients less than 40 years of age. Recio and Bussey reported 53% of tumors in young patients were of high grade but 20% in older age group had high grade tumors.[4]

In this study the proportion of young adults of defined age group those were attending tertiary care hospital in purulia were studied in terms of occurrence, recent trend of diseases and sociodemographic factors associated with its etiology.

Aims and Objectives

General Objectives: To study the demographic factors of colorectal carcinoma in young adults- Age, sex, BMI, physical activity, smoking, alcohol intake, dietary habits, socio-economic status, positive family history and to find out prevalence of colorectal carcinoma in young adults in comparison to other age group.

Specific objectives: To determine the site of affection in young adults in relation to different age groups and occurrence of different morphological varieties of colorectal carcinoma in young adults.

MATERIALS AND METHODS

This cross sectional study was carried out in OPD of a government medical college, a tertiary center in the district of purulia ,west Bengal over 1 year from July 2021 to June2022.Sixty patients presenting with Colorectal carcinoma in the surgery OPD included in the study.

Inclusion Criteria

Patients present with colorectal carcinoma (carcinoma arising from the caecum to the rectum)

Exclusion Criteria

Patients not willing to register in the study

The patients fulfilling the eligibility based on inclusion criteria and excluding exclusion criteria are interrogated, examined and verification of reports done after taking full informed consent after discussing all about the procedure, its utility, their responsibility.

Study tools used were written consent form, proforma for data collection, measuring tape and weight machine.

After the patient were explained about the study and getting their consent, proper history was taken. Interrogation about name, age, sex, religion and age was done. History about physical activity (sedentary, moderate or hard working), dietary habits, smoking (amount and duration), alcohol (amount and duration), socio-economic status (monthly per capita income, education level), family history (whether any generation was affected by colorectal carcinoma).

After taking thorough history patients were examined properly. Using measuring tape and weighing machine the height and weight of the patients were measured in centimetre and kilogram respectively.

Body Mass Index was calculated from the height and weight.

The reports were examined and confirmation of diagnosis by colonoscopic and histologic appearance of cancer were evaluated. The site of affection, morphology, histologic types were collected.

All these data collected, were put in preformed datasheet. The outcome was observed and result and analysis were made.

RESULTS

Sixty patients were enlisted in our study. The data collected from history and examination were statistically evaluated. Among 60 patients 24(40%) patients were between the age group of 20 to 40 years and 36(60%) patients were above 40 years and 35 were male and 25 were female.

Table 1: Distribution of patients by BMI in two age groups

Age (years)	BMI <18.5	BMI 18.5-24.9	BMI 25-29.9
20-40	2(3.33%)	19(31.67%)	3(5%)
>40	1(1.67%)	27((45%)	8(13.33%)
Total	3(5%)	46(76.67%)	11(18.33)

In our study most of the patients had normal BMI (Body Mass Index) with Chi square-1.66, degree of freedom-2, P-value-0.435(insignificant). Hence, BMI does not significantly affect the outcome.

Table 2: Distribution of patients by physical activity

Age(years)	Sedentary	Moderate worker	Hard worker
20-40	0	18(30%)	6 (10%)
>40	8(13.33%)	24(40%)	4 (6.67%)
Total	8(13.33%)	42(70%)	10 (16.67%)

Chi-square-7.14, degree of freedom-2, P-value-0.028(significant).

Hence, physical activity make a significant difference in outcome.

Among 60 patients only 9(15%) patients had food habits were animal based and remaining (85%) were plant based with chi square-1.37, degree of freedom-1, P-value-0.24 and it do not make significant difference in result.

Smoking habits and alcoholism were also insignificant effect (p-value-0.188 and 0.078 respectively) among patients in our study.

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Table 3: Distribution of patient by their family history of having the disease to any relative of the patient in the family

Age in years	Family history present	Family history absent
20-40	1(1.67%)	23(38.33%)
>40	1(1.67%)	35(58.33)
Total	2(3.33%)	58(96.67%)

Table 4: Distribution of patients by the morphology of the cancer in two age groups

Age in years	Ulcero-proliferative	Proliferative	Annular
20-40	12(20%)	11(18.33%)	1(1.67%)
>40	11(18.33%)	22(36.67%)	3(5%)
Total	23(38.33%)	33(55%)	4(6.67%)

Table 5: Distribution of patients by the site of affection of the cancer in different age groups

Age(years)	Right sided colon	Left sided colon	Rectum
20-40	4(6.67%)	2(3.33%)	18(30%)
>40	4(6.67%)	17(28.33%)	15(25%)
Total	8(13.33%)	19(31.67%)	33(55%)

Chi-square-10.12, degree of freedom-2, P alue-0.006(significant)

Site of affection of carcinoma significantly differ in the two age groups where patients of age 20-40 have more tendency occurrence of rectal cancer while over 40 years have more tendency of left sided colon cancer.

On histopathological examination majority of Colorectal malignancy was found to be adenocarcinoma which were subdivided into well, moderate and poorly differentiated adenocarcinoma. Other histopathological variants were mucinous adenocarcinoma, signet ring cell carcinoma and adenosquamous carcinoma and their incidence according to age shown in the following tables.

Table 6: Distribution of histological grade of adenocarcinoma in different age groups

Age in years	Well differentiated	Moderately differentiated	Poorly differentiated
20-40	3(5%)	9(15%)	11(18.33%)
>40	11(18.33%)	12(20%)	10(16.67%)
Total	14(23.33%)	21(35%)	21(35%)

Chi-square-3.37, degree of freedom-2, P-value-0.185(insignificant). Hence, histological grades had no significant difference between age groups.

Table 7: Distribution of patients according to histological types

Age in years	Adenocarcinoma	Mucinous adenocarcinoma	Signet ring cell adenocarcinoma	Adeno-squamous carcinoma
20-40	23(38.33%)	1(1.67%)	0	0
>40	33(55%)	1(1.67%)	1(1.67%)	1(1.67%)
Total	56(93.33%)	2(3.33%)	1(1.67%)	1(1.67%)

Chi square-1.44, degree of freedom-3, P value-0.695(insignificant). Hence, histological types had no significant difference between age groups.

DISCUSSION

There is major shift of age of new onset cases from more than 50 years to below 40 years has been seen. In our study young adults aged between 20 to 40 years comprised 40% of total 60 patients studied which were similar to other studies viz study by American cancer society researchers by Rebecca L. Siegel, looked at trends colorectal cancer incidence 1992 to 2005 among young adults (20-40 years). In other study it was found that early onset colorectal carcinoma were increasing both in developed and developing countries.[5]

In our study most of the patients (77%) had normal BMI and 18% patients had overweight. Hence, BMI does not significantly affect the outcome though other studies showed BMI more than 29 had increased risk of colorectal carcinoma.

According to previous studies physical activity had inverse relationship with occurrence of colorectal carcinoma. This study also compared two groups and supports this.

Despite the fact that animal base foods render more threat to colorectal carcinoma than plant based foods, our study was inconclusive in this matter.

Colorectal cancer occurs in hereditary, sporadic and familial forms. Hereditary forms have been extensively described and are characterised by family history, young age of onset and the presence of other specific tumors and defects. Sporadic cancer occurs in the absence of family history and generally affects an older population (60-80 years of age) and usually presents as an isolated colon or rectal lesion. The concept of familial colorectal cancer is relatively new. If the index case is young (<50years of age) and the relative is close (first degree)and more in number, the lifetime risk for colorectal cancer is high for other family members in family.[6] Only 2 patients(3.33%) among 60 gave positive family history in our study.

In our study, among 60 patients occurrence of ulcer proliferative, proliferative and annular variety of

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colorectal cancer were38.33%, 55% and 6.67% respectively.

In our study young adults of age between 20 to 40 years had proportionately more poorly differentiated adenocarcinoma and higher occurrence of right sided colon cancer which was corborated with other studies where higher proportion of young adults were diagnosed with tumors in the proximal colon and rectum and more aggressive disease(eg.poorly differentiated).[7,8] It was also found in other study that high incidence of poorly differentiated, right sided tumour were present in majority of young patients presenting with advanced disease and resulting in their poor prognosis.[9] Moreover Recio and Bussey reported that 53% of tumors in young patients were of high grade while 20% of tumor were of high grade in older age group.

In our study gross histological types do not significantly differ among different age groups.

There is insignificant association of most of the socio-demographic factor (except physical activity) and colonic carcinoma in our study.

Physical activity, site of affection of colorectal carcinoma and histological pattern and age related tendency were found to be significant and showed similarity with others studies.

CONCLUSION

Colorectal carcinoma is an emerging health problem in the developing countries like India. Changing lifestyle in the form of dietary pattern, obesity and lesser physical activity were the risk factors to this subset of patients. Colorectal carcinoma in young adults seen mostly in right colon and rectum and it was more aggressive and associated with high mortality. There should be high index of suspicion in any young patient presenting with symptoms suggestive of a colorectal malignancy and should be evaluated promptly and treated aggressively.

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