# Clinico-pathological Study of Colorectal Carcinoma

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## ABSTRACT

**Introduction:** Colorectal carcinoma (CRC) ranks as the fourth most frequent cancer in men (after lung, prostate and stomach cancer), and third in women (after cancers of breast and uterine cervix). Adenocarcinoma of the colon is the most common malignancy of the GI tract and is a major cause of morbidity and mortality worldwide. It is also one of the most common cancers in Nepal.

**Methods:** A descriptive study was conducted in a Kathmandu based Hospital. This study included 50 cases of colorectal carcinoma diagnosed on colonoscopic/sigmoidoscopic biopsies over a period of two years.

**Results:** A total of 50 patients were studied out of these, 29 (58%) patients were male, whereas 21 (42%) were with male:female ratio of 1.3:1. Age ranged was from 20 years to 80 years. Maximum number of cases were observed between the ages of 61-70 years. The most common histological type of colorectal carcinoma was moderately differentiated adenocarcinoma and seen in 37(74%) cases. Left sided tumor constituted 40 (80%) cases of all tumors and rectum was the predominant site with 26 (52%) cases followed by sigmoid colon with 7 (14%) cases.

**Conclusions:** Colorectal carcinoma (CRC) is not an uncommon disease in this part of the world. The use of sigmoidoscopy and colonoscopy along with biopsy when required should be encouraged as a screening program for colorectal carcinoma in an elderly age group for the detection of CRC at an earlier stage.

**Keywords:** *biopsy; colonoscopy; colorectal carcinoma; histopathology; sigmoidoscopy.*

## INTRODUCTION

Adenocarcinoma of the colon is the most common malignancy of the GI tract and is a major cause of morbidity and mortality worldwide.[1] It is also one of the most common cancers in Nepal.[2]

An estimated 1.23 million new cases of colorectal carcinoma (CRC) occurred in worldwide in 2008, representing about 9.75 of all new cancers. CRC ranks as the fourth most frequent cancer in men (after lung, prostate and stomach cancer), and third in women (after cancers of breast and uterine cervix).[3]

The incidence and pattern of colorectal cancer varies remarkably from one country to another depending upon various genetic and environmental factors.[4]

Colorectal carcinoma is most prevalent in the United States, Canada, Australia, New Zealand, Denmark, Sweden, and other developed countries. The incidence of this cancer is as much as 30-fold lower in India,

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South America, and Africa. In Japan, where incidence was previously very low, rates have now risen to intermediate levels (similar to those in the United Kingdom), presumably as a result of changes in lifestyle and diet.[1]

The aim of this study is to find out the clinic - pathological pattern of colorectal carcinoma seen in Medicare National Hospital and Research Centre, Chabahil, Kathmandu from March 2011 to February 2013.

## METHODS

All the cases diagnosed as colorectal carcinoma after colonoscopic/sigmoidoscopic biopsy at Medicare National Hospital and Research Centre, Chabahil, Kathmandu from March 2011 to February 2013 were included.Their age, gender and site of the lesion was recorded.The biopsy specimens were fixed in 10% formalin and routinely processed. Paraffin wax sections were cut at 4 micron thickness and stained with Haematoxylin and Eosin (H&E) stain. Then the cases were analyzed according to age, sex, anatomical site of tumor and histological diagnosis. Clinical history was obtained wherever applicable.

## RESULTS

A total of 50 patients were diagnosed as having colorectal carcinoma over period of two years from March 2011 to February 2013. Out of these, 29 (58%) patients were male, where as 21(42%) were femalewith male:female ratio of 1.3:1. Age ranging from 20 years to 80years. The distribution of patients in various age groups is shown in (Table 1), 9 (18%) cases were below the age of 30 years, male were 7 (14%) while females were 2 (4%) and youngest of all being 20 years male. Most of the patients presented with per rectal bleeding, alteration of bowel habit and pain abdomen. Maximum number of cases was observed between the age of 61–70 years that was 12 (24%) cases, male were 5 (10%) and female were 7 (14%).

The most common carcinoma observed was moderately differentiated adenocarcinoma, 37 (74%) cases where males were 23 (46%) and females were 14 (28%), followed by mucinous carcinoma 10 (20%) cases with female predominance 6 (12%), followed by signet ring cell carcinoma 2 (4%) cases both were male and 1 (2%) case of undifferentiated carcinomain female (Table 2) .

Left sided tumor constituted 40 (80%) cases of all tumors and rectum was the predominant site with 26 (52%) cases followed by sigmoid colon with 7 (14%) cases (Table 3).

**Table 1. Distribution of colorectal carcinoma according to age group.**

| Age | Male | Female | Total No. |
|---|---|---|---|
| 11 – 20 | 01 (2%) | | 01 (2%) |
| 21 – 30 | 06 (12%) | 02 (4%) | 08 (16%) |
| 31 – 40 | 06 (12%) | 01 (2%) | 07 (14%) |
| 41 – 50 | 05 (10%) | 02 (4%) | 07 (14%) |
| 51 – 60 | 04 (8%) | 06 (12%) | 10 (20%) |
| 61 – 70 | 05 (10%) | 07 (14%) | 12 (24%) |
| 71 – 80 | 02 (4%) | 03 (6%) | 05 (10%) |
| Total | 29 (58%) | 21 (42%) | 50 (100%) |

**Table 2. Distribution of colorectal carcinoma according to histological type.**

| Histological type | Male | Female | No. of patients |
|---|---|---|---|
| Moderately differentiated adenocarcinoma | 23 (46%) | 14 (28%) | 37 (74%) |
| Mucinous adenocarcinoma | 04 (8%) | 06 (12%) | 10 (20%) |
| Signet ring cell carcinoma | 02 (4%) | | 02 (4%) |
| Undifferentiated carcinoma | | 01 (2%) | 01 (2%) |

**Table 3. Distribution of colorectal carcinoma according to site.**

| Site | Male | Female | No. of patients |
|---|---|---|---|
| Caecum | 03 (6%) | 01 (2%) | 04 (8%) |
| Ascending colon | | 01 (2%) | 01 (2%) |
| Transverse colon | 01 (2%) | 01 (2%) | 02 (4%) |
| Hepatic flexure | 02 (4%) | 01 (2%) | 03 (6%) |
| Splenic flexure | 02 (4%) | 01 (2%) | 03 (6%) |
| Descending colon | 01 (2%) | | 01 (2%) |
| Sigmoid colon | 03 (6%) | 04 (8%) | 07 (14%) |
| Recto–sigmoid junction | 01 (2%) | 02 (4%) | 03 (6%) |
| Rectum | 16 (32%) | 10 (20%) | 26 (52%) |

## DISCUSSION

Colorectal carcinoma is one of the most common malignancies worldwide with comparatively lower incidence in south Asian countries in the past few decades.[5]

In this present study a total of 50 cases were included , out of which 29 (58%) were male and 21 (42%) were female which is consistent with the study done by

Mahmood Q,et al.[6] The peak age at presentation of CRC was in between the age of 61-70 years. A similar trend was observed in other studies.[7] Increase occurrence of CRC in older age group may be due to an increase in screening rates in 50 years and older patients .The increased use of sigmoidoscopy and colonoscopy may be a reason of detection of CRC at an earlier stage.[8]

In similar study done in Nepal showed CRC in younger adults (20–29 years of age) to be 12 (35.3%) cases where as in our study it was 9 (18%).[9] Sixteen (32%) cases were below the age of 40 years in our study which was comparable with the study done by Mahmood Q, et al it was 178(33.24%) cases.[6]

The commonest histological type was moderately differentiated adenocarcinoma 37 (74%) cases in present study which was similar with other studies.[10-12] Mucinous adenocarcinoma was observed in 10 (20%) cases which was consistent with study done by Ahmad, et al. which showed 10 (25%) cases of mucinous adenocarcinoma.[13]

Site distribution in our study suggested that the majority of patients had primary disease involving the left–sided colon in 40 (80%) cases among which 26 (52%) cases involved rectum followed by sigmoid colon with 7 (14%) cases. Similar result was observed in manyother studies.[10,13] In a study done by Malik AZ et al showed rectum 40% as a commonest site of colorectal carcinoma followed by sigmoid colon 30% which is consistent with our study.[14]

Cancer is the leading cause of death in economically developed countries and the second leading cause of deathin developing countries.[15] Colorectal cancer incidence rates are rapidly increasing in several areas historically at low risk, including Spain, and a number of countries within Eastern Asia and Eastern Europe.[16, 17] The United States is the only country with significantly decreasing incidence rates in both males and females in the most recent time period, which largely reflects detection and removal of precancerous lesions through colorectal cancer screening.[17,18] So far there has not been any study involving entire nation regarding the prevalence of colorectal carcinoma (CRC). However few isolated study done in limited centers have been published which reflects CRC to be one of the commonest cancers in Nepal.[2]

The incidence of CRC increases progressively with increasing age.[19] The data reflects this global trend for most part, with the disease in our patients being commonest between the ages of 61-70 years. Most of our patient presented with bleeding per rectum, alteration of bowel habit and pain abdomen which were the common modes of presentation in other studies.[20,21] Since the incidence is increasing with the age the elderly patients with history of bleeding per rectum, alteration of bowel habit and pain abdomen should undergo screening for colorectal carcinoma.A variety of lesions were reported in the present study across a wide age and site distribution.

## CONCLUSIONS

Colorectal carcinoma is not an uncommon disease in this part of the world. The use of sigmoidoscopy and colonoscopy along with biopsy when required should be encouraged as a screening program for colorectal carcinoma in an elderly age group for the detection of CRC at an earlier stage.

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