

# COLORECTAL CARCINOMA; FREQUENCY OF COMMON HISTOLOGICAL TYPES IN PATIENTS BELOW 40 YEARS OF AGE PRESENTING TO TERTIARY CARE HOSPITAL

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**ABSTRACT... Objective:** Colorectal cancer is the second commonest cause of death in the world. Its incidence in young patients is on rise. **Objective:** To determine the common types of colorectal carcinoma in patients below 40 years of age presenting to tertiary care level hospital. **Study Design:** Descriptive study **Setting:** It was carried out at Surgical Department, KTH, Peshawar **Period:** January 2007 to January 2008. **Materials and methods:** Total of 50 patients younger than forty years of age with colorectal cancer were included in study for the determination of histologic types. **Results:** There were 66% males and 34% were females. The commonest affected age group was 31-35 years old having 46% cases. On history 86% patients complained of altered bowel habits and on clinical examination anemia was present in 72% patients. Left and right sided tumors were found in 70% and 30% patients respectively. Adenocarcinoma was the commonest type found in 94% cases followed by lymphoma (4%). **Conclusions:** The incidence in young age group ( $\leq 39$  years) was highest There was slight male preponderance. Adenocarcinoma was the commonest tumor.

**Key words:** Colorectal carcinoma; Adenocarcinoma; Signs and symptoms.

## INTRODUCTION

Colorectal cancer (CRC) is the third most common malignant tumor<sup>1</sup> and the second most common cause of death in the world<sup>2</sup>. It is called a disease of the western world<sup>3</sup>. The incidence is higher in men than women. In men, it ranges from 48.3 to 72.5 per 100,000 per year while in women; it ranges from 32.3 to 56 per 100,000 per year. About 6% of Americans are expected to develop the disease within their life time<sup>4</sup>.

The etiology of colorectal cancer is unknown, but colorectal cancer appears to be multifactorial in origin and includes environmental factors and a genetic component. Diet may have an etiologic role, especially diet with high fat content. Approximately 75% of colorectal cancers are sporadic and develop in people with no specific risk factors. The remaining 25% of cases occur in people with significant risk factors. Most (15-20%) colorectal cancers develop in people with either a positive family history or a personal history of colorectal cancer or polyps. The remaining cases occur in people with certain genetic predispositions, such as hereditary nonpolyposis colorectal cancer (HNPCC, 4-7%) or familial adenomatous polyposis (FAP, 1%) or in people with inflammatory bowel disease (IBD, 1%)<sup>5</sup>.

The most common type of CRC is Adenocarcinoma and > 70% arise from adenomatous polyps<sup>6</sup>.

Generally colorectal carcinoma is a relatively slow growing tumor and lymphatic spread is the most common mode of spread. The other modes of spread are local spread in three dimensions, haematogenous spread and Implantation of tumor cells to distant tissue through exfoliation and subsequent Implantation and growth of these cells<sup>7</sup>.

Colorectal carcinoma is one of the prime challengers for the medical professionals because it produces symptoms relatively early and at this stage generally curable by surgery. Unfortunately these early symptoms are ignored by the patients or more commonly, insufficiently investigated by the physicians<sup>8</sup>. It presents most commonly as altered bowel habits, bleeding per rectum, tenesmus, and symptoms of anemia and weight loss<sup>9</sup>. Although colorectal cancer is considered as a disease of elderly, however a significant proportion of patients present below forty years of age<sup>10</sup>. Patients aged forty years or younger, distal location tumor and advance stage are considered poor prognostic factors for overall survival<sup>11</sup>.

Every year, nearly one million people worldwide develop CRC, of which 50 per cent die within 5 years<sup>12</sup>. Many Asian countries, including China, Japan, South Korea and Singapore have experienced an increase of two to four times in the incidence of colorectal cancer during the past few decades. The rising trend in incidence and mortality from colorectal cancer is more striking in affluent than in poorer societies and differs substantially among ethnic groups<sup>13</sup>. Thus it is important for surgeons to recognize the potentials for colorectal cancer in suspected patient and to take an aggressive approach to the diagnosis and early treatment of the disease<sup>14</sup>.

**MATERIALS AND METHODS**

This study was carried out at department of General Surgery, Khyber Teaching Hospital, Peshawar during January 2007 to January 2008. A total of 50 patients with CRC were selected in the study by non-probability sampling technique. The inclusion criteria was; patients of both gender and younger than forty years of age with colorectal cancer presenting for the first time to Out Patient Department of General Surgery. Patients above forty years of age with colorectal carcinoma and those who were not medically fit for surgery were excluded from the study. All patients who present to surgical unit, Khyber Teaching Hospital, Peshawar through OPD fulfilling the inclusion criteria were admitted in the hospital. The purpose, benefits and details of the study were explained and informed consent was taken from all the patients. Informed written consent was taken from the patients for surgery and other related procedures. The demographic information like name, age, sex and address were recorded. Thorough history was taken and physical examination; abdominal examination, and digital rectal examination and investigations were done for the confirmation of colorectal cancer. Routine investigations were done including Full Blood Count, Blood urea and random blood glucose level, serum electrolytes, Urine routine examination, a 12 lead ECG and a chest radiograph, anterioposterior view as well as specific relevant investigations like colonoscopy, proctoscopy, ultrasound abdomen/pelvis, and CT scan abdomen/pelvis.

These patients were operated in the general surgical operation theater and per-operative findings for the site

of the tumor was noted. During the operation, biopsy specimens were taken for histopathological examination. All the above mentioned information and reports of histopathology were recorded in a proforma.

**RESULTS**

In this study there were 50 patients including 33 (66%) males and 17 (34%) females with male to female ratio of 1.94:1. Age range was 15-40 with mean age of 31.84years + 5.3SD. The most common affected age group was 31-35 years old having 23 (46%) cases, followed by 36-40 years old having 13 (26%) patients.

For the diagnosis of colorectal cancer digital rectal examination picked up growth in 18 (36%) patients. Proctoscopy findings were conclusive in 32 (64%) cases. Double barium enema studies showed lesions in 16 (32%) patients. Ultrasound abdomen showed liver metastases, enlarged para-aortic lymph nodes or rarely a growth of bowel origin in 15 (30%) cases (Table I).

Per-operatively left sided colon involved more than right side colon (Fig 1). The detail is given in Table II.

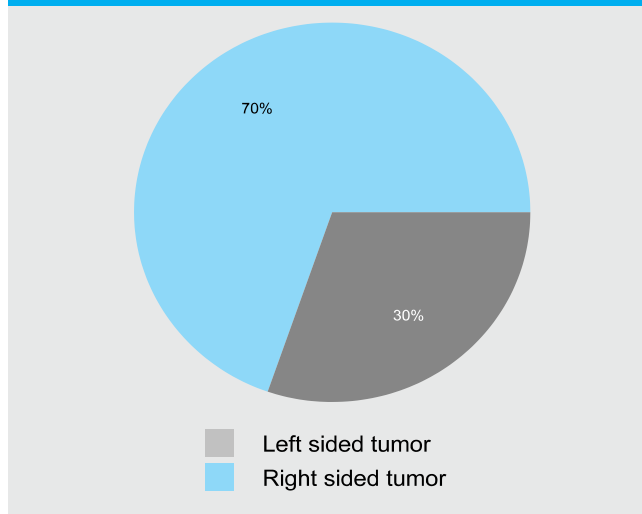
On histological examination of the biopsy specimens, Adenocarcinoma was the commonest type (94%) followed by Lymphoma (4%), Carcinoid type malignancy (2%) and adenosquamous cell carcinoma (2%). (Table-III).

Table-I. Diagnostic techniques used in patients (n=50)		
Technique	No. of patients	%age
Proctoscopy	32	64%
Digital rectal examination	18	36%
Double barium enema	16	32%
Ultrasound abdomen	15	30%
Laparotomy	04	08%
CT Scan	03	06%

**DISCUSSION**

Colorectal cancer is one of the most important cancers worldwide and the most common gastrointestinal cancer. Its incidence and mortality rate are different in the world.

**Fig-1. Location of colorectal carcinoma in patients (n=50)**



**Table-II. Location of colorectal carcinoma in patients (n=50)**

Location	No of patients	%age
<b>Left side tumors</b>		
-Rectum	27	54%
-Sigmoid / rectosigmoid	05	10%
-Descending colon	02	04%
-Splenic flexure	01	02%
<b>Total</b>	<b>35</b>	<b>70%</b>
<b>Right side tumors</b>		
Caecum	09	18%
Transverse colon	03	06%
Hepatic flexure	03	06%
Ascending colon	01	02%
<b>Total</b>	<b>15</b>	<b>30%</b>

**Table-III. Histologic findings of resected specimen (n=50)**

Pathology	No. of cases (%age)
1. Adenocarcinoma	
I. Non-Mucinous	30 (63.83%)
II. Mucinous	11 (23.40%)
III. Signet ring	6 (12.77%)
<b>Total</b>	<b>47 (94%)</b>
2. Lymphoma	04 (04%)
3. Carcinoid	01 (02%)
4. Adenosquamous cell carcinoma	01 (02%)

The highest incidence of colorectal cancer has been reported in North America, Europe and lowest incidence in countries of Asia, Africa and South America. One million new cases of colorectal cancers are diagnosed each year around the world and approximately half a million people die due to the disease<sup>15</sup>. The people, in majority, living in the Asian subcontinent are vegetarian and it is thought that these vegetarian dietary habits protect them from colorectal cancer but studies have shown a substantial increase in the patients of colorectal carcinoma and particularly the incidence at younger age is almost the same as in high-risk patients of the West<sup>1</sup>.

In our study, male predominance was found as usual which can be comparable with the studies done in other centers of the country<sup>16,17</sup>. In our study, higher incidence of CRC was 46% and 26% in age groups ranged from 31-35 years and 36-40 years respectively. In this study mean age affected was 31.84 years which is comparable to the studies conducted in Pakistan<sup>16,17</sup>.

Out of 50 patients, 15 (30%) patients had right sided tumor and 35 (70%) patients had left sided tumor. In the UK, The left side of colon involvement has been reported more than the right side<sup>22</sup>. Studies from different regions have documented almost similar figures regarding location of malignancy<sup>18,19,20,21</sup>.

Determination of tumor type is critical because different tumor types vary regarding the radiosensitivity, local behavior, and propensity for regional and systemic metastasis. In UK more than 90% of cases are adenocarcinoma and the vast majority arises from adenomas, either flat or polypoid. These common benign tumors develop from normal colonic mucosa and are present in about a third of the European/USA population. The more difficult to detect flat adenomas account for about 10% of all polyps<sup>23</sup>. Histopathology reports in our study showed highest percentages of adenocarcinoma i.e. in 47 (94%) patients. This is also in accordance to the results of a local study conducted at the Aga Khan University Hospital, Karachi which showed that colorectal adenocarcinoma was found in 71.76% patients<sup>17</sup>. In another local study by Malik KA,<sup>1</sup> 20 (35.72%) patients had well differentiated adenocarcinoma whereas 18 (32.14%) patients had anaplastic

tumour and mucinous adeno carcinoma was found in 5 (8.92%) patients. In Hong Kong, the predominant histological type of CRC reported is adenocarcinoma which is 75%<sup>24</sup>. In our study the other histological types of CRC were Lymphoma (4%), carcinoid tumor (2%) and adenosquamous cell carcinoma (2%).

In the adenocarcinoma, non mucinous type was predominant which was noted in 30 (63.83%) patients. The mucinous type was observed in 11 (23.40%) and signet ring cell adenocarcinoma in 6 (12.77%) patients. In a local study 59% were reported as non mucinous adenocarcinoma, 30% as mucinous adenocarcinoma and 11% as signet-ring cell type carcinoma<sup>25</sup>. The non mucinous adenocarcinoma has been noted to be the common histological type of CRC in other countries as well. In a study by Song W et al at China<sup>26</sup> out of 2079 patients diagnosed with colorectal cancer between 1994 and 2007, 1837 (88.35%) patients were having non mucinous adenocarcinoma 144 (6.92%) had mucinous, 25 (1.20%) had signet-ring cell. In a study conducted at Guangdong Province, China,<sup>27</sup> out of 8172 lesions, the mucinous adenocarcinoma was noted in 800 (12.3%) and signet ring cell carcinoma in 51 (0.8%) lesions. Also the frequency of carcinoid tumor was in 22 (0.3%), squamous carcinoma in 21 (0.3%), adenosquamous carcinoma in 9 (0.1%), and other types in 95 (1.46%) lesions.

## CONCLUSIONS

Colorectal carcinoma is a major health problem. The commonest tumor of the large bowel is adenocarcinoma. Most of the CRC arises from adenomatous polyps through the adenoma-carcinoma sequence and the natural history of the disease is long. Keeping in view the natural history of CRC, early diagnosis represents the most appropriate tool to reduce the disease-related mortality. Several tests are available to screen healthy subjects at average risk for CRC like faecal occult blood tests, flexible sigmoidoscopy, combined faecal occult blood tests and flexible sigmoidoscopy, total colonoscopy and double contrast barium enema. Screening programs must be devised in our set up in high risk population to effectively treat the CRC. Fecal occult blood is easily affording and available test everywhere and can effectively be used for screening of colorectal

carcinoma as randomized trials in West have shown that mortality rate has been reduced up to 20% by adopting fecal occult blood testing every two years.

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- Qaiser Mahmood, Nasreen Siddique, Ahmed Ijaz Masood. Colorectal carcinoma; frequency in southern Punjab. Prof Med Jour 13(2) 192-200 Apr, May, Jun, 2006.