

COLORECTAL CARCINOMA IN WESTERN RAJASTHAN: A COMPREHENSIVE STUDY AND MANAGEMENT OF 245 CASES

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ABSTRACT: Colorectal Carcinoma is most common malignancy in GIT, 3rd most common after lung and Breast.⁽¹⁾ These patients commonly present with altered bowel habits, bleeding PR, pain, lump abdomen.⁽²⁾ In the present study 245 cases from west Rajasthan over a period of 26 months were studied for Age, Sex, Clinical presentation, Investigation, Subsequent management, Complication and Follow-up. Peak incidence of disease is in 6th decade of life with M/F ratio 1.8:1. Most common presentation was altered bowel habits. Most patients presented in advanced Duke's C with moderately differentiated Adenocarcinoma. CEA levels were <5 ng/mL. Preoperative surgical feasibility for curative resection was present in 64.44% pts. CEA level is good indicator to monitor recurrence of the disease. Surgery is the mainstay of the treatment. There is a role of adjuvant chemotherapy in all cases of colorectal cancer. Follow-up study is mandatory in all patients for early management of recurrent disease.

KEYWORDS: COLORECTAL CARCINOMA GIT MALIGNANCY COLON CARCINOMA ADENOCARCINOMA OCCULT BLOOD COLONOSCOPY SIGMOIDOSCOPY.

INTRODUCTION: Colorectal cancer (CRC) is one of the most common forms of gastrointestinal malignancies in the world.⁽³⁾ Compared to the Western world, the incidence rates of colorectal cancer are low in India; for colon cancer they vary from 0.7 to 3.7/100,000 among men and 0.4 to 3/100,000 among women, and for rectal cancer from 1.6 to 5.5/100,000 among men and 0 to 2.8/100,000 among women.⁽⁴⁾ The vast majority of patients with CRC are above the age of 65 years.⁽⁵⁾ CRC occurring before age of forty years accounts for less than 10% of the total CRC. It has been reported that CRC in the Asia-Pacific region and Africa occur a decade or more earlier compared to the USA.

The most common location of CRC is the left side of the colon including the rectum.⁽⁶⁾ However, reports from the West suggest that the tumor location of CRC is moving proximal to the splenic flexure. Prevention and early detection are key factors in controlling and curing colorectal cancer.⁽⁷⁾ When the cancer is found early, initial treatment can often lead to an excellent outcome. The extent to which a cancer penetrates the various tissue layers determines the stage of the disease.⁽⁸⁾ Most colorectal cancers grow slowly over a period of several years, often beginning as small benign growths called polyps. Removing these polyps early, before they become malignant, is an effective means of preventing colorectal cancer.⁽⁹⁾

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MATERIAL AND METHODS: A prospective study was carried out at Dr. S.N. Medical College & MG Hospital, Jodhpur (Raj.) 245 cases of colorectal carcinoma were taken for study between July 2011 to August 2013. All cases were carefully studied for age and sex distribution, clinical presentation, investigation and diagnostic modalities, management, complications and mortality and follow up observations

OBSERVATIONS: There was male preponderance with 158 males (64.44%) and 87 females (35.56%), and rural preponderance with urban 82(33.33%) and rural 163(66.66%) (Table 1) maximum number of patients 158(64.48%) belonged to age group of 45-74 (table 2). Most patients presented with altered bowel habits 229 (93.33%) (4-6 months), bleeding per rectum 142 (57.78%) (4-6 months), pain abdomen 87(35.56%) (0-1 month) intestinal obstruction 147 (60%) (0-5 days). (Table 3) clinical findings have been distention of abdomen and features of acute/sub-acute intestinal obstructions 147(60%), palpable mass per rectal examination 136 (55.55%), lump abdomen 120(48.89%), pallor 120(48.89%) ascites 60(24.24%) and hepatomegaly 33(13.33%). (Table 4) Radiological investigations revealed positive findings. (Table 5) Plain X Ray abdomen showed distension of left colon in 65(26.67%) right colon 87(35.56%) small bowel 120(48.88%) and whole bowel 33(13.33%). Ultra sonography of abdomen showed bowel mass 201(82.22%) secondaries in liver 13(11.11%) distended bowels 163(66.67%) free fluid 125(51.11%). CT SCAN of abdomen showed bowel mass 190(77.78%), secondaries in liver 13(5.56%), dilated bowel loops 163(66.67%) enlarged lymph nodes 157(64.44%) free fluid in peritoneum 125(51.11%) and local infiltration 163(66.67%). Maximum number of patients 174 (71.11%) had CEA levels in the range of 0-10 ng /ml with 0-5 ng/ml in 93(37.78%) and 6-10 ng /ml 81(33.33%), 11-15 ng/ml in 27(11.11%), 16 -20 ng in 27(11.11%) and >20 ng/ml in 16(6.67%). (Table 6) In study 123(50%) patients were histo pathologically confirmed carcinoma before surgery and 65(26.66%) were suspected by investigation as colorectal carcinoma. 55(22.22%) patients were diagnosed at the time of laparotomy or by post-operative histopathological confirmation. (Table 7) In our study most common site of colorectal carcinoma is rectum 86(35%) followed by rectosigmoid 59 (24%), caecum 37 (15%) (Table 8). In this study most cases present to us in stage 3 rd 163. Most cases present in DUKES C (66.67%) (Table 9). In our most common histopathological finding is adenocarcinoma 201(82.23%). in adenocarcinoma most common type is moderately differentiated 163(66.67%) followed by poorly differentiated 22(8.89%) (Table 10) In definite procedures most commonly LAR was done in 101 41.3.

% followed by APR & RIGHT HEMICOLECTOMY 51(20.6%) (TABLE 11). In this study preoperative surgical feasibility for curative resection was present in 158 (64.44 %) patients and palliative surgical feasibility in 33(13.33%). 54(22.22%) cases were undecided preoperatively because these patients were diagnosed intra operatively (table 12) In this study most patients were treated by surgery followed by chemotherapy 120(75.76 %) due to post operative death 31 (20%) were treated only by surgery. (Table 13, 14) Most frequent post operative complication was wound infection 84(48.89%), followed by chest infection 56(35.55). mortality 31(20%). (Table 15) Patients were followed up for one year and It was evident that best results could be obtained by Early diagnosis and curative surgery with chemotherapy.

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			Sex	Rural/urban	Distribution	
	Urban		Rural		total	%
	no	%	No	%	no	
Male	49	20	109	44.44	158	64.44
Female	33	13.33	54	22.22	87	35.56
Total	82	33.33	163	66.66	245	100

Table 1: sex & rural- urban distribution

Age in years	No. of patients	%
25-34	22	8.89
35-44	27	11.11
45-54	43	17.78
55-64	71	28.89
65-74	44	17.78
>75	38	15.55
Total		100

Table 2: age distribution

Presenting symptoms	No of patients	%
Bleeding per rectum	142	57.78
Altered bowel habits	229	93.33
Pain abdomen	87	35.56
Acute/sub-acute int obst	147	60.00
Anorexia	49	20.00
Weight loss	125	51.11

Table 3: presenting symptoms

Clinical findings	No of patients	%
Distention of abdomen and features of obstruction	147	60
Palpable rectal growth	136	55.55
Palpable lump abdomen	120	48.89
pallor	120	48.89
ascites	60	24.44
hepatomegaly	33	13.33

TABLE 4: CLINICAL FINDINGS

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Investigation		No. of patients	%
Plain X Ray abdomen	Left colon	65	26.67
Dilated bowel loops	Right colon	87	35.56
	Small intestine	120	48.88
	Whole bowel	33	13.33
Ultra sonography	Bowel mass	201	82.22
	Secondaries in liver	13	11.11
	Dilated bowel loops	163	66.67
	Ascites	125	51.11
CT SCAN abdomen	Bowel mass	190	77.78
	Secondaries in liver	13	5.56
	Dilated bowel loops	163	66.67
	Enlarged Lymph nodes	157	64.44
	ascites	125	51.11
	Local infiltration	163	66.67

Table 5: Radiological findings in colorectal carcinoma

CEA LEVELS IN ng/ml	No. of patients	%
0-5	93	37.78
6-10	81	33.33
11-15	27	11.11
16-20	27	11.11
>20	16	6.67

Table 6: Pre-operative levels of carcinoma embryonic antigen levels (CEA)

Pre-operative confirmation					Post op confm HPE
Histopathological confirmation				CT SCAN SUSPECTED	
Rectal biopsy (proctoscopy)		Colono scopy			
Biopsy	Positive HPE	Biopsy	Positive HPE		
49	49	87	76	65	55

Table 7: Histo-pathological confirmation

Site	No. of patients	%
Caecum	38	15.56
Ascending colon	11	4.44
Hepatic flexure	33	13.33

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Transverse colon	0	0
Selenic flexure	5	2.22
Descending colon	0	0
Recto sigmoid	60	24.44
Sigmoid	87	35.56
Rectum	11	4.44
Total	245	100

Table 8: Site distribution of colorectal carcinoma

Stage	No. of patient	%
1 st	16	6.67
2 nd	33	13.33
3 rd	163	66.67
4 th	33	13.33
Dukes		
A	16	6.67
B	44	17.78
C	169	68.89
D	16	6.67

Table 9: staging at the time of presentation

HISTOPATHOLOGY TYPES		NO OF PATIENTS	%
ADENOCARCINOMA	WELL DIFFERENTIATED	16	6.67
	MODERATELY DIFFERENTIATED	163	66.67
	POORLY DIFFERENTIATED	22	8.89
	TOTAL	201	82.23
MUCINOUS		27	11.11
COLLOID		16	6.67
SCIRRHOU		0	0
ANAPLASTIC		0	0

TABLE 10: HISTOPATHOLOGY OF COLORECTAL CARCINOMA

NAME OF PROCEDURE	NO. OF PATIENTS	%
APR	33	20.6
LAR	65	41.3
RIGHT HEMICOLECTOMY	33	20.6
RIGHT EXTENDED HEMICOLECTOMY	22	13.7

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SIGMOID R/A	5	3.4
TOTAL	158	

Table 11: The various curative surgical procedures DONE IN 158 (64.44%)

Surgical feasibility	No. of patients	%
Curative procedure	158	64.44
Palliative procedure	33	13.33
undecided	54	22.22

TABLE 12: SURGICAL FEASIBILITY STATUS FOR COLORECTAL CARCINOMA

Palliative procedure	No. of patient	%
Hartmanns operation	21	8.89
caecostomy	6	2.22
Sigmoid colostomy	6	2.22
Ileotransverse bypass	0	0
Ileoascending byoass	0	0
Total	33	13.33

Table 13: palliative procedures in colorectal carcinoma

Treatment	No of patients		Total	%
	Curative	Palliative		
Surgery alone	14	17	31	20
chemotherapy	0	7	7	4.44
Surg + chemo	106	14	120	75.76

Table 14: management of colorectal carcinoma

Complication	No of patients	%
Wound infection	84	48.89
Burst abdomen	28	17.78
Fecal fistula	21	13.33
Chest complications	56	35.55
Cardiac	11	6.67
Renal	18	11.11
Death after elective surg	14	8.89
Death after emergency surg	18	11.11

Table 15: post operative complications

DISCUSSION: Most colorectal cancers are due to lifestyle factors and increasing age, with only a small number of cases due to underlying genetic disorders⁽¹⁰⁾ Risk factors include diet, obesity, smoking, and not enough physical activity.⁽¹¹⁾ Dietary factors that increase the risk include red and processed meat, as well as alcohol.⁽¹²⁾ Another risk factor is inflammatory bowel disease, which includes Crohn's disease and ulcerative colitis.⁽¹³⁾ Some of the inherited conditions that can cause colorectal cancer include: familial adenomatous polyposis and hereditary non-polyposis colon cancer; however, these represent less than 5% of cases.⁽¹⁴⁾ It typically starts as a benign tumor which over time becomes cancerous.⁽¹⁵⁾

Bowel cancer may be diagnosed by obtaining biopsy during a sigmoidoscopy or colonoscopy.⁽¹⁶⁾ This is then followed by medical imaging to determine if the disease has spread. Screening is effective at decreasing the chance of dying from colorectal cancer and is recommended starting at the age of 50 and continuing until the age of 75. Aspirin and other non-steroidal anti-inflammatory drugs decrease the risk. Their general use is not recommended for this purpose, however, due to side effects.⁽¹⁷⁾

Treatments used for colorectal cancer may include some combination of surgery, radiation therapy, chemotherapy and targeted therapy. Cancers that are confined within the wall of the colon may be curable with surgery while cancer that has spread widely is usually not curable with management focusing on improving quality of life and symptoms. Five year survival rates in the United States are around 65%. This, however, depends on how advanced the cancer is, whether or not all the cancer can be removed with surgery, and the person's overall health. Globally, colorectal cancer is the third most common type of cancer making up about 10% of all cases. In 2012 there were 1.4 million new cases and 694,000 deaths from the disease. It is more common in developed countries, where more than 65% of cases are found. It is less common in women than men.⁽¹⁸⁾

Colorectal cancer (CRC) is prevalent in Western developed countries. Compared to the Western world India has allowed incidence of CRC. Reports from Japan and Korea suggest that the incidence of CRC is increasing in Asia. It is found that the age at presentation of CRC in Indians (58.4 years) was a decade earlier compared to non-African Americans in the USA (70.5 years). Some studies from India have suggested that CRC may occur even earlier. Deo et al reported a mean age at presentation of 45.3years.⁽¹⁹⁾ One study from Srinagar noted that 68.7% of the CRC patients' age at diagnosis was between 41 and 60 years. Similar to our observation, CRC in Asian and African countries occurs one decade earlier than in the Western population. The most common location of CRC is left side of the colon and rectum. However reports from the West suggest that there is a shift of tumor location to proximal parts of the colon. This trend has been noticed in Asian countries such as Korea and Japan. In Japan the rightward shift was due to decrease in the proportion of rectal cancer.⁽²⁰⁾

In a retrospective study comparing the anatomical distribution of CRC in whites and Chinese patients, the latter were found to have more distal CRC. Majority of CRC from Malaysia, Iran, Japan, Africa, India, and Egypt are on the left side of the colon. Symptoms and signs at presentation were different for proximal and distal CRC. Presence of bleeding per rectum and constipation were highly suggestive of distal CRC. Abdominal pain, anorexia, low hemoglobin, and a palpable mass were highly suggestive for proximal CRC.

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Multivariate logistic regression analysis showed bleeding per rectum associated with distal CRC and palpable mass with proximal CRC. CRC in Indians occurs at a younger age and is often distal to the splenic flexure. CRC should be suspected irrespective of the patients' age and a simple measure like sigmoidoscopy may pick up majority of cases of CRC in India.⁽²¹⁾

About 80% of patients undergo surgery, usually with the hope of cure. Fewer than half survive more than five years⁽²²⁾ Long term survival is only likely when the tumour is completely removed. Microscopic cancer cells left behind after surgery in tissue close to the rectum (the mesorectum) can become foci of incurable local recurrence. Preoperative radiotherapy was associated with 14% (SD 4%, $p=0.002$) fewer deaths from colorectal cancer: 43.9% v 49.2% dead. The benefit is greater in patients who go on to have curative resections. Postoperative radiotherapy leads to a 33% (SD 11%, $p=0.003$) reduction in local recurrence but no clear evidence of improved survival⁽²³⁾ The effectiveness of adjuvant chemotherapy was assessed in a meta-analysis by the Colorectal Cancer Collaborative Group of individual five year survival data for 12 000 patients in 33 randomized controlled trials This suggests that for every 100 patients with Dukes' stage C cancer treated for six months with 5-fluorouracil/folinic acid (FUFA), six deaths can be avoided (95% CI 2% to 10%). A one week postoperative infusion of 5-FU directly into the liver may also be effective.

These show that early chemotherapy increases median survival by three to six months and that symptom free survival increases from a median of two months to 10 months ($p<0.001$) (24). In cases of Chemotherapy for advanced or recurrent colorectal cancer improved response rates can be achieved by supplementing 5-FU with methotrexate or folinic acid and that continuous infusion of 5-FU is more effective than bolus administration.⁽²⁵⁾ Patients who have had surgery with the intention of cure are often followed up to detect recurrences of the cancer in the hope that they will be resectable. Tests may include colonoscopy; laboratory analysis of carcinoembryonic antigen, liver function, and faecal occult blood; radiological investigations such as chest and colonic x ray films; liver ultrasound and CT.⁽²⁶⁾

CONCLUSION: Colorectal cancer is the second most common cause of cancer death in Indian males. Prompt investigation of suspicious symptoms is important, but there is increasing evidence that screening for the disease can produce significant reductions in mortality. High quality surgery is of paramount importance in achieving good outcomes, particularly in rectal cancer, but adjuvant radiotherapy and chemotherapy have important parts to play. The treatment of advanced disease is still essentially palliative, although surgery for limited hepatic metastases may be curative in a small proportion of patients.

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