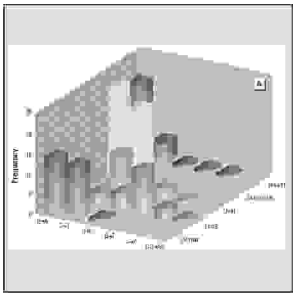
ORIGINAL PROF-937

COLORECTAL CARCINOMA;
FREQUENCY IN SOUTHERN PUNJAB.



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ABSTRACT ... Objective: To note the frequency of colorectal carcinoma in southern Punjab. **Design:** Retrospective observational study. **Place and duration of study:** Histopathology department Nishtar Hospital Multan from January 1993 to December 2003. **Subject and Methods:** Among 45114 surgical specimens received from January 1993 to December 2003, 526 were diagnosed as cases of colorectal carcinoma out of these 316 were male and 210 were female patients. Peak age for male was 51-60 years while for female it was 31-40 years. From all the received specimens, appropriate number of sections were passed, haematoxylin and eosin staining was done and light microscope was used for the diagnosis. **Result:** During ten year period total 526 cases were diagnosed as a case of colorectal carcinoma. Among them, rectal carcinoma was the most common with over all male predominance. Colorectal carcinoma was one to two decade earlier more common in female than in male. The commonest histological variant was adenocarcinoma with an increasing tendency towards left side of colon. **Conclusion:** Colorectal carcinoma is more common in males, earlier in females than males which needs further work up.

Key words: Colorectal, carcinoma, adenocarcinoma.

INTRODUCTION

Colorectal carcinoma is the most common gastrointestinal malignancy through out the western world. In U.K mortality associated with this carcinoma is approximately 200,000 per year, making it the second most common cause of death from malignant diseases[1,2].

Colorectal carcinoma constitutes about 15% of newly diagnosed cancer, in most of the studies in USA and Europe 13% of all cancer death[3]. Peak incidence is between 60 –70 years .Fewer than 20% of cases occur before the age of 50 years[4]. Highest occurrence of this tumor is in USA, Canada, Australia and Newzeland while lower in Asia (Japan), South America, Africa[4] and lowest in Ibadan (Nigeria)[5]. In Pakistan the incidence of colorectal carcinoma is increasing possibly as a result of

industrialization or other factors[6.7.8.9].

Various factors thought to be involved in the predisposition of colorectal carcinoma are alcohol consumption[10,11,12], increased weight gain since the age of 25 years[10] smoking (cigarettes, cigar and pipes), more for cigar and pipes than cigarettes smoking[13,14,15] increased intake of dietary fat, protein[3,4,16,17,18,19] and deficiency of micro-nutrients such as vitamin A, C and E[3,4], calcium[10], selenium[16], beta- carotene[3,10], socio-economic status, type of housing, educational level[20,21], age more than 40 years, associated diseases like ulcerative colitis, granulomatous colitis, past history (female breast cancer and genital tract cancer), family history, Familial polyposis, Gardner syndrome, Turcots syndrome, colorectal polyps, cancer family syndrome and generalized gastrointestinal juvenile polyposis have been blamed[16]. Familial adenomatous polyposis is dominantly inherited cancer predisposition syndrome with incidence of 1: 17000 and 1:5,00022.

Multan is situated in the lower central Punjab (Pakistan) and drains most of its surrounding population, climate is hot. Most of its population is rural and economy is agro-based, where there is indiscriminate exposure to pesticides. Nishtar Hospital, Multan is the main referral center. The frequency of colorectal carcinoma in Southern Punjab is not known that's why this study was planned to know the frequency of colorectal carcinoma in this area.

PURPOSE OF STUDY

To note the frequency of colorectal carcinoma in southern Punjab.

MATERIAL AND METHOD

526 patients of colorectal carcinoma were carried out at pathology department Nishtar Hospital Multan from January 1993 to December 2003. Most of the received specimen were either resected segment of large intestine or few in the form of small endoscopic biopsies. Routinely an adequate number of sections are taken from the tumor, normal area and resected margins, routinely Haematoxylin and eosin stain are used. Histological diagnosis is made under the light microscope. Then cases were analyzed according to age ,sex, anatomical site of tumor and histological diagnosis.

RESULTS

Two cases were below the age of ten years and both were male while four cases were above the age of 80 years and all were females as shown in (Table I, II, & III).

Table- I Average Age Incidence of Colon Rectal Carcinoma Between 1-90 years during 1983-December 2003. Total=526, Male=316, Female=210

Age	No. of Male	% Age	No. of Female	% Age
0-10	02	0.4	-	-
11-20	10	1.80	10	1.90
21-30	28	05.3	24	4.56
31-40	48	9.1	56	10.64
41-50	74	14.0	48	9.12
51-60	82	15.6	38	7.22
61-70	60	11.4	20	3.80
71-80	12	02.3	10	1.90
81-90	-	-	04	0.76
Total	316	59.9	210	39.9

178(33.84%) cases were below the age of 40 years, male were 88(16.73%) while the females were 90(17.11%). Between the age of 51-60 years male were 82 (15.58%) and between the age of 41-50 females were 48 (9.12%) which is one to two decade earlier than the males.

Table- II Distribution of Colon Rectal Carcinoma According to Age Group

Age	Male	Female	Total No.	% Age
0-10	02	-	02	0.4
11-20	10	10	20	3.80
21-30	28	24	52	9.88
31-40	48	56	104	19.78
41-50	74	48	122	23.19
51-60	82	38	120	22.81
61-70	60	20	80	15.20
71-80	12	10	22	4.18
81-90	-	04	04	0.76
Total	316	210	526	100.0

The most common carcinoma observed was rectal carcinoma, 238(45.24%) cases where male were 126(23.95%) and females were112(21.70%), followed by carcinoma of caecum 110(20.91%) cases with again male predominance 61(11.59%) and carcinoma of recto sigmoid junction 50(9.50%) as shown in (Table IV).

Over all right sided colorectal carcinoma was observed in159(30.22%) cases while 362(68.82%)cases were of left sided .as shown in (Table-IV) Which is 38.60% increase on left side .Predominant histological variant among the known sites was rectal carcinoma 238(45.24%) were male were 126(23.95%) and female were 112(21.70%) followed by caecum 110(20.91%) were male were 61(11.59%) and female were49(9.31%) as shown in (Table IV & V).

In changing site distribution of colorectal carcinoma the %age of right sided cancer was stable in males while increasing in females which is in comparison with our study as shown in table VI .

Adenocarcinoma which comprised of 485 (92.20%) cases and leading among the Adenocarcinoma was mucinous adenocarcinoma 205(38.97%) as shown in table-VII.

Table - III Distribution of Colon Rectal Carcinoma According to Age and Sex

Male 316			Female 210		
Age	No.	% Age	Age	No.	% Age
0-10	02	0.4	0-10	00	00
11-20	10	1.80	11-20	10	1.90
21-30	28	5.3	21-30	24	4.56

31-40	48	9.1	31-40	56	10.64
41-50	74	14.0	41-50	48	9.12
51-60	82	15.6	51-60	38	7.22
61-70	60	11.4	61-70	20	3.80
71-80	12	2.3	71-80	10	1.90
81-90	00	00	81-90	04	0.76

Table-IV Distribution Colon Rectal Carcinoma According to Site

Right Colon = 159(30.22%) Total = 526 Male = 90(56.60) Female = 69(43.39)							
Site	**No. of patients**	**Male**	**% age T**	**% age M**	**Female**	**% Age T**	**% Age F**
Appendix	6(1.14)	4	0.76	1.26	2	0.38	0.95
Caecum	110(20.19)	61	11.59	19.30	49	9.31	23.33
Ascending colon	27(5.13)	15	2.85	4.74	12	2.28	5.71
Transverse Colon	11(2.09)	7	1.33	2.21	4	0.76	1.90
Hepatic flexure	5(0.95)	3	0.47	0.94	2	0.38	0.95
Left Colon = 362(68.82%) Total = 526 Male = 203(56.07) Female = 159(43.92)							
Site	**No. of patients**	**Male**	**% age T**	**% age M**	**Female**	**% Age T**	**% Age F**
Splenic flexure	6(1.14)	2	0.38	0.63	4	0.77	1.90
Descending colon	23(4.37)	12	2.28	3.79	11	2.13	5.23
Sigmoid colon	24(4.56)	14	2.66	4.43	10	1.93	4.76
Recto-sigmoid junction	50(9.50)	36	6.86	11.39	14	2.71	2.66
Rectum	238(45.24)	126	23.95	39.87	112	21.70	53.33
Anal canal	16(3.04)	10	1.90	3.16	6	1.16	2.85
Colon non specified	5(0.95)	3	0.57	0.94	2	0.38	0.95

Table-V Incidence of Colon Rectal Carcinoma in Different Parts of Colon

Site	**No. of patients**	**Male**	**% Age from T. Male**	**Female**	**% Age from T. Female**
Appendix	6(1.14%)	4(0.76%)	1.27	2(0.38%)	0.95
Caecum	110(20.91%)	61(11.59%)	19.30	49(9.31%)	23.33
Ascending colon	27(5.13%)	15(2.85%)	4.74	12(2.28%)	5.71
Hepatic flexure	5(0.95%)	3(0.57%)	0.94	2(0.38%)	0.95

Transverse colon	11(2.09%)	7(1.33%)	2.21	4(0.76%)	1.90
Splenic flexure	6(1.14%)	2(0.38%)	0.63	4(0.76%)	1.90
Descending colon	23(4.37%)	12(2.28%)	3.79	11(2.13%)	5.23
Sigmoid colon	24(4.56%)	14(2.66%)	4.43	10(1.93%)	4.76
Recto-sigmoid junction	50(9.50%)	36(6.84%)	11.39	14(2.66%)	6.66
Rectum	238(45.24%)	126(23.95%)	39.87	112(21.29%)	53.33
Anal canal	16(3.04%)	10(1.90%)	3.16	6(1.16%)	2.85
Colon non specified	5(0.95%)	3(0.57%)	0.94	2(0.38%)	0.95
	526	298		228	

Table-VI Distribution Colon Rectal Carcinoma According to Histological Type

Total = 526 Male = 316 Female = 210

Histological type	No. of patients	% Age
A- Adenocarcinoma	485	92.20
(i) Muscinous adenocarcinoma	205	38.97
(ii) Moderately diff.	162	28.89
Adenocarcinoma		
(iii) Signet ring cell type	112	21.29
(iv) Papillary adenocarcinoma	09	1.7
(v) Adenosquamous carcinoma	07	1.3
B- Non-Hodgkin lympha	10	1.90
C- Carcinoid tumour	07	1.3
D- Squamous cell carcinoma	04	0.76
E- Lymphoma diffused type	03	0.57
F- Unspecified	07	1.3

Table-VII Distribution of Right and Left Colorectal Carcinoma

Site	No. of Cases	Male	Female
Right colon	159(30.22%)	90(56.60%)	69(43.39%)
Left colon	362(68.82%)	203(56.07%)	159(43.92%)

DISCUSSION

Colorectal cancer is the 2nd most common cause of death in the Western society[23]. Its incidence has increased among the elderly in the recent years[24,25]. Various genetic and environmental factors have been blamed as an etiology[5] but none of them has been proved.

In this retrospective observational study a total of 526 cases were included, out of which 316(60%) were male and 210(40%)were female. Male to female ratio was 1.5:1 ranged between of 6-85 years. Two cases were below the age of ten years and both were male while four cases were above the age of 80 years and all were females. 178(33.84%) cases were below the age of 40 years, male were 88(16.73%) while the females were 90(17.11%). Between the age of 51-60 years male were 82(15.58%) and between the age of 41-50 females were 48 (9.12%) which is one to two decade earlier than the male. Among the known sites the commonest site was rectal carcinoma 238(45.24%) were male were 126(23.95%) and female were 112(21.70%) followed by caecum 110 (20.91%) male were 61(11.59%) and female were 49(9.31%). In our study major bulk of the neoplasm involved the rectum, caecum and recto sigmoid junction. This observation is nearly in accordance with as reported in other studies[26,27,28,29]. Right colon involvement was 159(30.22%) while left colon 362(68.82%) indicating an increasing tendency towards the left colon[30].

Highest occurrence of the tumor in male is between the age of 51-60 years (15.80%) and in female 31-40 years (10.40%). The gradual increase in frequency in male is from 21 to 60 years and then fall while in females highest frequency is in pre menopausal period i.e. child bearing age and then there is fall in the post menopausal period Typical distribution of Colorectal carcinoma in caecum and ascending colon is 15% ,hepatic flexure 02%,transverse colon 05%, splenic flexure 03%, descending colon 10%, remainder 65% arise in the sigmoid colon and rectum, of these 50% are in the rectum, 27% in the recto-sigmoid junction and remaining 14.95% in the sigmoid colon[31]. Carcinoma of colon is more common in females while carcinoma of rectum in males[32]. Each year there are about 700,000 new cases and 400,000 deaths due to this disease world wide[30]

Multiple studies have been carried out to find out relation of these factors with colorectal carcinoma and most of these studies stress the decrease relationship of colorectal carcinoma with increased uptake of fiber diet[3,4,16,17,18,34] but this study shows that in this area mostly high roughage diet in the form of vegetable etc is used but even then there is increased occurrence of colorectal carcinoma. In females it is one to two decades earlier than the male indicating that some other etiological factors may also be involved. In one of the prospective study carried out at histopathology department of Chandka Medical College from January 1993 to December 1997 where 105 cases of colorectal carcinoma were studied, where 71(67.62%) were male and 34(32.38%) were female with male to female ratio of 2.08: 1 where age pattern ranged from 12-75 years, average 44.63 years in males and 46.32 years in females .In this study 43.8% were below the age of 40 years but in our study is was 33.24% and occurrence of carcinoma was at higher age in female as compare to our study where 90 (17.11%) females were below the age of 40 years[35]. In changing site distribution of colorectal carcinoma the %age of right sided cancer was stable in males while increasing in females[36] which is in comparison with our study. With the collaboration of Liquat Medical College and atomic energy medical center 125 cases of colorectal carcinoma were reviewed and it was found majority of the patients 76.00% belong to ruler areas where their may be indiscriminate exposure to pesticides or other factors and disease involved younger patients 45.6% bellow the age of 40 years[7,30,37,38]. At armed force institute of pathology in Rawalpindi during the period of one year (May 1990 to 1991), 78 cases of colorectal were diagnosed, age range was 16-84 years with male to female ratio of1.6:1. 27 cases were below the age of 40 years, carcinoma of rectum was seen in 37(47.4%) cases followed by 9(11.5%) cases of caecum and sigmoid colon in 7(9.0%)[39]. Histologically 59(75.64%) were having well differentiated adenocarcinoma .A study of 40 cases of colorectal carcinoma at General Hospital PGMI Lahore in about one year showed 30 (75%) adenocarcinoma 10 (25%) mucinous adenocarcinoma[40] with predominance of males 21(52.5%)and on left side 52.5%. Male predominance was not only found in our study but in many other studies as well[41,42,43]. In our study commonest histological variety was adenocarcinoma,

which is also evident in many other studies as well[44,45,46,47,48,49]. At district head quarter Rawalpindi where 60 cases of colorectal carcinoma were diagnosed during 1990. It was found that age range was 19-80 years .The incidence of colorectal carcinoma less than 40 years was 18%,commonest site was rectum 40% followed by sigmoid colon 30%[50]. In a prospective study at Sheikh Zayed Hospital Lahore from January 1988 to December 1992 case evaluation of colorectal carcinoma was done, where it was found that cancer in lower 1/3 of rectum was 60.7%[51]. In our population female usually undergo multiple pregnancies and constipation is the usual complaint during pregnancy which is due to lowering of gut muscle tone (progesterone effect) so they are more exposed to the so called carcinogens in the diet during pregnancy or there is probably deficiency of micro-nutrients as well such as Vit-A, C, E, A, carotene, calcium, and selenium and socio-economical status ,indiscriminate exposure of pesticide or others. All this data needs further evaluation of the increasing tendency of colorectal carcinoma and differences between child bearing age (15-49 years) and post-menopausal period in the females.

CONCLUSION

In our study the occurrence of colorectal carcinoma is southern Punjab is nearly in comparison with other western and local studies but in younger age group as compare to western studies particularly in females where it is one to two decade earlier than males which needs further work up and investigations.

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