



## Histopathological Pattern of Colorectal Tumours in JOS University Teaching Hospital (JUTH), JOS. A 5 Year Retrospective Review from (January 1999 –December 2003)

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### ABSTRACT

*A retrospective, descriptive, histopathological study of colorectal tumours as seen in JUTH to determine the morphological patterns of various types of colorectal tumours as seen.*

*The study reviewed colorectal biopsies received within the period under review. All records of colorectal biopsies were retrieved and those confirmed as tumours were extracted and grouped as benign or malignant. All relevant information from request forms which included age, sex, and site of lesion were obtained from hospital records.*

*One hundred and ten cases were analyzed representing 33.9% of all colorectal specimens and 2.1% of all the tumours diagnosed in the period. Eighty one were malignant while 29 were benign . The malignant colorectal tumours represented 3.9% of all histological proven malignancies; 59.1% of all gastrointestinal malignancies; 25% of all colorectal specimens and 73.6% of all colorectal tumours. The 29 benign tumours of the colon and rectum represented 9% of colorectal specimens and 26.4% of colorectal tumours.*

*In conclusion colorectal neoplasm's are not uncommon with majority being malignant.*

**Key words:** *Colorectal, malignant, benign, neoplasm's, prevalence.*

### INTRODUCTION

Tumours of the colon and rectum are common [1,2]. The proportion of the malignant and the benign colon neoplasm's varies worldwide. However, the malignant variants are reported to be more common than the benign [3,4].

Colorectal carcinoma (CRC) was once believed to be rare in Africa [5,6]. However, recent reviews and reports from Nigeria, other parts of Africa and blacks in the USA have shown that colorectal carcinoma is not only common amongst blacks but occur earlier in blacks than in the Caucasians [7,8,9,10,11,12]. Malignant tumours of the colon and rectum in Africa has been reported to be more aggressive and to have higher mortality in comparison with the same tumours in the Caucasians [13,14,15].

Other types of malignant colorectal tumours namely, non-epithelial cancers have also been recorded in some centers in Nigeria, other parts of Africa and other nations of the world [7,11,15].

The paper highlights the baseline data concerning colorectal carcinoma in our environment using prevalence data from the records of Jos University Teaching Hospital, (JUTH), a 530-bed reference hospital which serves Plateau and surrounding states with an estimated population of 20 million people. With this wide coverage it will serve as a large pool for an important disease like neoplasms of the colorectum.

### METHODS

The study involves the review of colorectal biopsies received from January 1999 to December 2003. All records of colorectal biopsies were retrieved and those confirmed as tumours were extracted and grouped as benign or malignant. All relevant information from request forms which included age, sex, and site of lesion were obtained. Other relevant data namely; signs, symptoms, socio-demographic and family history and medical history were also obtained from the patients' files.

Also the tissue blocks were retrieved, sections made and then stained with haematoxylin and eosin (H&E). All the slides were examined by at least two pathologists. Histologically confirmed neoplastic lesions were classified according to WHO 2000 edition. The data were analysed using the Statistical package for social

sciences version 13 and results represented in tables, bar charts and pie chart. As part of the exclusion criteria all patients with incomplete data and those whose tissue blocks were not reviewed were removed from the study.

**RESULTS**

The 110 specimens represented 33.9% of all colorectal specimens and 2.1% of all the tumours diagnosed in the period under review. Eighty one were malignant while 29 were benign as is represented in figure I. The malignant colorectal tumours represented 3.9% of all histologically proven malignancies; 59.1% of all gastrointestinal malignancies; 25% of all colorectal specimens and 73.6% of all colorectal tumours. The 29 benign tumours of the colorectum represented 9% of colorectal specimens and 26.4% of colorectal tumours.

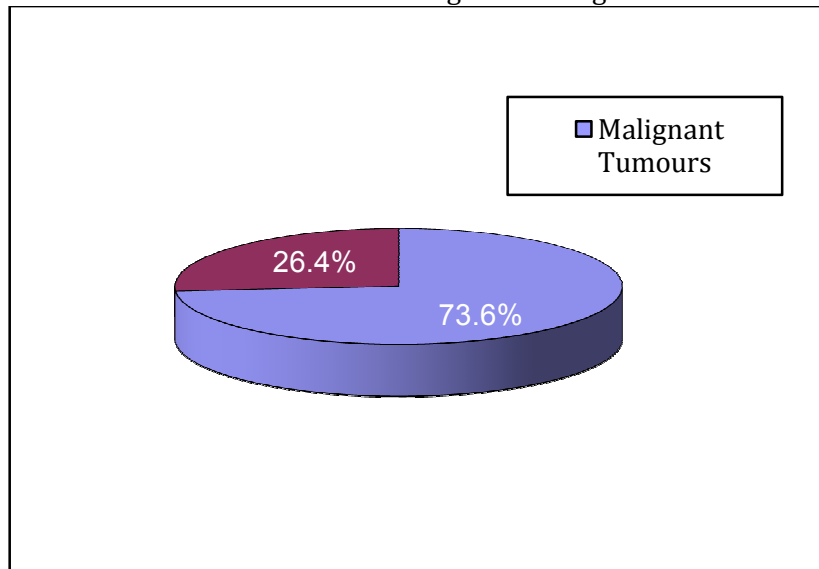
The age incidence and sex distribution of the malignant colorectal tumours are shown in figure II. Out of the 81 patients with colorectal malignancies, there were 48 males (59.3%) and 33 females (40.7%) representing a male to female ratio of approximately 1.5:1. The age range was between 17 years and 90 years with the average age being 43.7 years while the median age was 42 years. The peak age range was 41 - 50 years. A total of 20 [24.7%; M=7; F=13] was aged 30 years and below while 9 patients (11.1%) were aged above 60 years. Out of this, only 1 (1.2%) was aged above 70 years.

Out of the 81 colorectal malignancies, 80(98.8%) were primary to the colorectum while 1(1.2%) was a metastatic squamous cell carcinoma, the source of which was not stated. Table I is a representation of the distribution of the histologic types, sex and age of primary colorectal malignancies. A total of 77 (M=44; F=33) adenocarcinomas representing 96.25% of the primary colorectal malignancies was seen making adenocarcinoma the commonest histologic type. Other histologic types seen from the study include two (2) non - Hodgkin lymphomas (diffuse large cell type) and 1 adenosquamous carcinoma. These represented 2.5% and 1.25% respectively of the primary colorectal malignancies and all of them occurred in males. Signet ring tumours, malignant gastrointestinal stromal tumours (GIST), carcinoids and other histological types were not found in the studied series.

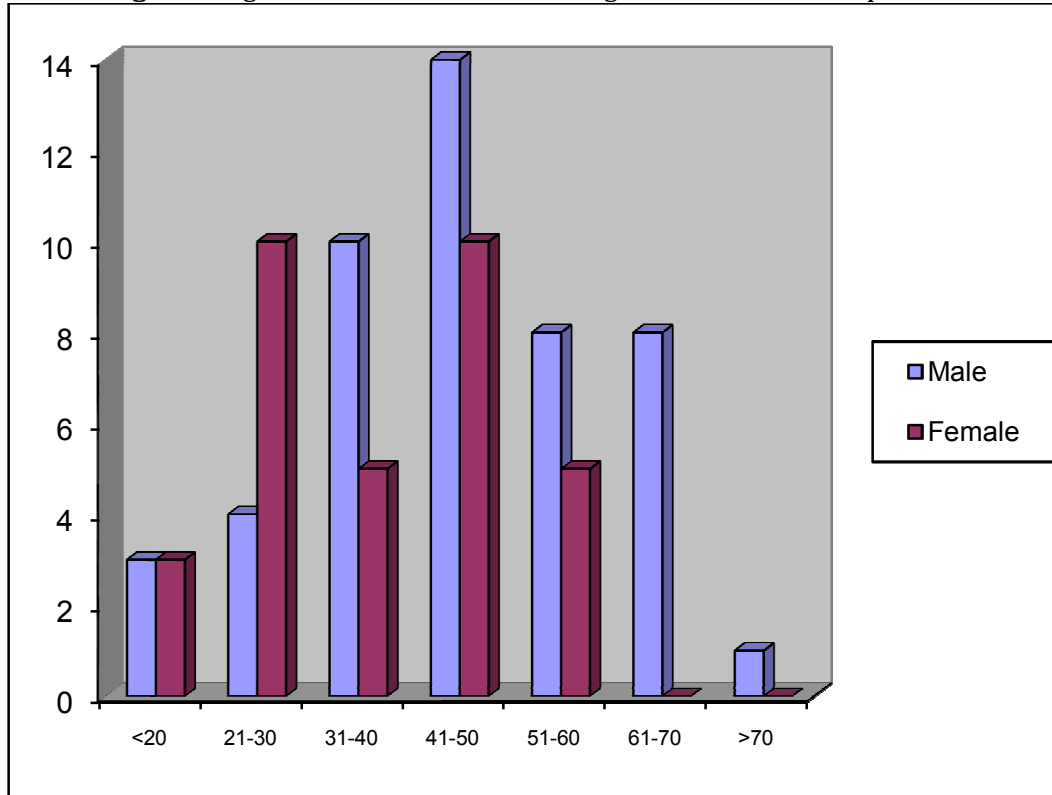
**DISCUSSION**

Colorectal tumours constituted 2.4% of all tumours diagnosed within the study period. This prevalence rate is in contrast with 12.4% reported from the United States of America [16]. However, primary neoplasms of the colorectum still constituted the commonest gastrointestinal neoplasms(58.6%) in this environment. This finding is in an agreement with an earlier study in this center which showed 49% [17] and another study in Saudi Arabia which showed 43% [18].

**Figure 1** shows distribution of both benign and malignant colo- rectal neoplasms



**Figure 1** Age and sex incidences of malignant colo-rectal neoplasms.



**Table I: Histological types, Sex and Age distribution of 81 colorectal cancers**

Age range	Age								Total		Grand Total	%
	< 20	21-30	31-40	41-50	51-60	61-70	71-80	> 80	M	F		
<b>Adenocarcinoma</b>	5	14	15	24	12	7	-	-	45	32	77	95.1
<b>Adenosquamous Carcinoma</b>	-	-	-	-	1	-	-	-	1	-	1	1.2
<b>Lymphoma</b>	1	-	-	-	-	1	-	-	2	-	2	2.5
<b>Metastatic Carcinoma</b>	-	-	-	-	-	-	-	1	-	1	1	1.2
<b>TOTAL</b>	<b>6</b>	<b>14</b>	<b>15</b>	<b>24</b>	<b>13</b>	<b>8</b>	<b>-</b>	<b>1</b>	<b>48</b>	<b>33</b>	<b>81</b>	<b>100</b>

Also, the malignant variants were found to be commoner (73.6% of all colorectal tumours) than the benign tumours (26.4%). This agrees with reports from studies in Kenya [19] and Luxembourg [20] which showed 65% and 88.8% respectively. Colorectal cancer is therefore not rare in this environment having accounted for 3.9% of all malignancies diagnosed in the period under review. This finding agrees with an earlier report of 4.6% from Enugu, Nigeria [5]; 4.8% from Zaire [6] but is at variance with 1.3% reported from South Africa [21]. It was also the commonest gastrointestinal malignancy having accounted for 59.1% of the cancers of the gastrointestinal tract. This is in agreement with an earlier study in this center [3] which reported 54.6% and with another study carried out in Saudi Arabia which reported 43% [18]. Many studies [5,21,22,23] within and outside Africa have however shown that an increasing incidence of CRC is not solely an Africa phenomenon and therefore concluded that colorectal cancer may actually be rare amongst black Africans in comparison with the Caucasians. This increasing incidence in blacks/Africa may be as a result of an increasing awareness and use of hospital facilities by the populace. It may also be due to an increasing adoption of Western dietary habits by blacks.

This study also showed that colorectal cancers affected more males than females by a ratio of 1.5:1. This correlates with reports from studies elsewhere viz; 3:1 in Port Harcourt, Nigeria [24], 2.28:1 in Ife, Nigeria

[25], 1.3:1 in South Africa [13], 3.9:1 in Saudi Arabia [18], and 1.4:1 in Singapore [26]. It however contrasts with studies in Ibadan, Nigeria [8] and USA [27] which reported equal affectation in both sexes i.e. 1:1. The study also showed that more females than males (F:M – 1.9:1) were affected at the age of 30 years and below. This is in agreement with the report from a study in the USA which showed a female to male ratio of 1.6:1 [28] at that age group. Majority of patients (72.8%) in this study presented at ages below the sixth decade of life. This is higher than 33.3% reported by Adesanya *et al* in Lagos [13] but compares with 52.7% by Ersumo *et al* in Ethiopia<sup>21</sup>. The report however contrasts with 90% and 78% that presented in the seventh or later decades of life as reported in the USA [30] and Luxembourg [20] respectively. The peak incidence of colorectal cancers from this study was in the fifth decade. This is similar with the peak incidence found in Ibadan, Nigeria [4]; Ife, Nigeria [31]; and Adis Ababa, Ethiopia [21] but contrasts with reports from South Africa<sup>13</sup> and Luxembourg [20] which showed peak age incidence to be in the sixth and seventh decade respectively. The mean age in this environment was 43.9 years. This is comparable to the 49 years obtained in Lagos, Nigeria [9]; 44.3 years, from an earlier study in Jos [29]; and 42.9 years in Kano<sup>32</sup>. It is however in contrast with the average age in the Caucasians, which though varying from study to study, falls within the seventh decade [25,29,54]. This difference is likely because colorectal cancers in Caucasians occur mostly later than the sixth decade of life.

From this study, CRC patients aged 30 years and below constituted 24.7% of the cases of cancers in this environment. This is comparable with 28% reported in Kano [20] and 18% in Ibadan [34]. The values from other centers viz: 6.7% in Port Harcourt<sup>24</sup>; 8% in Uganda [35] and 6% in South Africa [14] are at variance with the value obtained from this study though still showing a high incidence in the age group. This relative similarity across Africa of a high incidence rate in the age group of 30 years and below is however contrasted with a report from New Zealand by Isibister and Fraser<sup>36</sup> which indicated less than 1% of CRC in that age group. These findings of a higher incidence of the condition in younger age among Africans affirm earlier reports that black African colorectal cancer patients are about one to two decades younger than their Caucasian counterparts [13,14]. This predilection of CRC for the younger age group in black Africans may be as a result of interplay between genetic predisposition, environmental influence, chronic infection, poor immune status and lifestyle, especially dietary habits, that is rapidly conforming to the pattern of the developed societies<sup>6</sup>, a fact that was observed to be a feature of the studied population. The well known conditions that predispose to CRC namely ulcerative colitis, Crohn's disease and familial adenomatous polyposis (FAP) were not seen in this study. This is in agreement with the well documented rarity of these conditions in black Africans which range between 0% and 3% [14]. However, 1.2% and 2.5% of CRC were found in association with schistosomiasis, a chronic inflammatory condition and adenomatous polyp respectively. Higher though comparable degrees of association are however reported from other studies in other parts of Nigeria viz: 6.1% with amoebiasis and 3.7% with schistosomiasis in Ife<sup>37</sup> and 12.5% with schistosomiasis in Zaria<sup>34</sup> and 5.2% reported from a study in South Africa<sup>14</sup>. This finding however contrasts with nil association of CRC with schistosomiasis reported from Saudi Arabia<sup>38</sup> despite the high incidence of the infestation in that country.

In conclusion Colorectal tumours especially adenocarcinoma are not uncommon in this environment. They constituted the commonest primary neoplasms of the gastrointestinal tract. Adenocarcinoma was the commonest colorectal malignancy and occurred more in males than in females. It affected mostly younger persons in whom it runs a more aggressive course. This increased aggression in younger patients in comparison to older patients could be an area for further molecular studies.

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