

Pattern of Urological Malignancies seen at Federal Medical Centre Gombe North Eastern Nigeria.

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ABSTRACT

BACKGROUND: The incidence of urological malignancies is on the increase globally like most other malignant tumours. There is generally poor documentation of urological malignancies in Nigeria attested to by the paucity of literature on this subject matter. This study was carried out to document the pattern and distribution of urological malignancies seen at Federal Medical Centre, Gombe, North Eastern Nigeria.

MATERIALS AND METHODS: This was a retrospective analysis of all pathologically proven urological malignancies seen at this centre from January 2000 to December 2007. All records of patients with the diagnosis of urological malignancies were retrieved from the histopathology registers, operation registers and patients' case notes. The patients' biodata including their ages, sex and tumour site were extracted and analysed.

RESULTS: A total of 118 cases of urological malignancies were recorded during the 8 years under review. Ninety-nine (83.9%) occurred in males while the remaining 19 (16.1%) were in females giving a male: female ratio of 5:1. Children comprised of nine (7.6%) and adults 109 (92.4%) of the population. The organ specific frequency of occurrence of the tumour in descending order comprised of prostate 63 (53.4%), bladder 33 (28.0%), kidney 17 (14.4%), testes 3 (2.5%), penis 2 (1.7%) ureter and urethra (0%).

CONCLUSION: We concluded that prostate, urinary bladder and renal carcinomas are the three most common urological malignancies in North Eastern Nigeria.

KEYWORDS: urological malignancies, pattern, Nigeria

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INTRODUCTION

The incidence of urological malignancies is on the increase globally like most other malignant tumours⁽¹⁻²⁾. This trend is also observed in our practice which has enjoyed a low incidence in the past. This may be due to increase case finding as investigative modalities become more available and patients are more aware of the available therapeutic options.

Prostate cancer is the most commonly diagnosed non-skin cancer in most western countries⁽³⁻⁴⁾. In the United States, it is the second leading cause of cancer death

following only by lung cancer^(2, 5). Prostate cancer is particularly common among elderly men especially the black Americans and two thirds of those who die from prostate cancer are over the age of 75⁽⁶⁾. Furthermore, when prostate cancer develops in younger men, it seems to have a more aggressive nature⁽⁷⁾. Several studies in Nigerian and elsewhere in Africa has also show a rising pattern of prostate cancer among blacks as their American counterpart^(4,6,8).

Cancers of the urinary bladder are common in some part of Nigeria and Africa⁽⁹⁻¹²⁾. Study carried out in Kano showed that vesical malignancies accounted for 6.4% of all cancers in Kano with squamous cell carcinoma representing the most common histological type⁽¹⁰⁾. However earlier studies carried out in Egypt showed squamous cell carcinoma of the bladder as the most common type while later studies showed a changing trend with transitional cell carcinoma the most common histological type⁽¹²⁾. Squamous cell carcinoma of the urinary bladder remains the most commonly seen histological variant in areas endemic for Schistosomal infestations.

The most frequent histological type of kidney cancer worldwide in adult is renal cell carcinoma (RCC) accounting for about 80% of cases, followed by transitional cell carcinomas of the renal pelvis, ureter and urethra⁽¹³⁻¹⁵⁾. The male: female incidence of renal cell carcinoma is 2:1 and it has been described in older children where it constituted 1-2% of all childhood malignant tumours of the kidney. Studies carried out in Zambia and elsewhere in the world showed nephroblastoma as the most predominant type of renal tumour and it was noted in younger age groups^(11,13,16).

Testicular cancer is a very rare entity and is predominantly found in young men; with a modal age at diagnosis of about 30.5⁽¹⁷⁻¹⁸⁾. Germ cell tumours account for 90-95% of all testicular malignancies in North America and Europe and its occurrence may be associated with developmental abnormalities of the urogenital system.^(17,19)

Penile Cancer has a worldwide distribution with low incidence among Jews attributed to religion circumcision.⁽²⁰⁻²¹⁾

Most of the urological organs are hidden and not readily accessible for clinical evaluation making patients to

present with invariably late malignancies. There is generally paucity of dedicated screening programmes for most malignancies in Nigeria and is especially so for urological malignancies.

This study is carried out to document the pattern and distribution of urological malignancies seen in Federal Medical Centre Gombe, North Eastern Nigeria.

MATERIALS AND METHODS

This was a retrospective analysis of all pathologically proven **urological malignancies seen at Federal Medical Centre, Gombe, from 2000 to 2007**. All records of patients with the diagnosis of urological malignancies were retrieved from the histopathology registers, operation registers and patients case notes. Data extracted included patients' age, sex and tumour site. Data was analysed for simple means and percentages using EPI- info version 6 software.

RESULTS

A total of 118 cases of urological malignancies were recorded during the 8 years under review which represented 11.8% of all malignancies diagnosed within the period. Ninety-nine (83.9%) occurred in males while the remaining 19 (16.1%) were in females giving a male: female ratio of 5:1. Children comprised of 9 (7.6%) and adults 109(92.4%) of the study population. The organ specific frequency of occurrence is as presented in figure I. The tumour site in descending order of occurrence comprised of prostate 63 (53.4%), bladder 33(28.0%), kidney 17(14.4%), testes 3(2.5. %), penis 2(1.7%) ureter and urethra (0%).

Fig. 1: Frequency of urological cancers at FMC Gombe

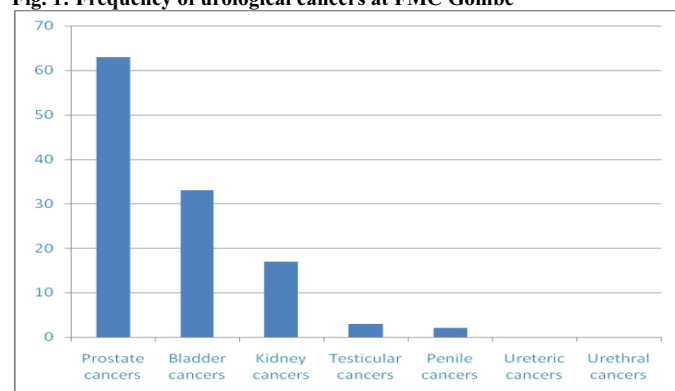


TABLE: II Age And Sex Characteristics Of Patients In Relation To Tumour Site

Tumour Site	Sex		Age (years)	
	M	F	Mean Age	Range
Kidney:				
Adult	4	4		27-60
Children	2	7		0.6-15
Bladder	8	25	52.9	20-85
Prostate	63	-	69.4	25-93
Testis:				
Adults	3	-	38.3	22-53
Children	0	-	-	-
Penis	2		57.5	36-79

and urethra (0%). The three most frequent tumours type accounted for approximately 95.8 % of all cases. Tumours of the testis and penis accounted for the remainder. Of the total 33 cases of bladder diagnosed, eight (24.2%) and 25 (75.8%) were in males and females respectively with a male to female ratio of 1: 3 as in table II. The eight (8) kidney tumours seen among the adults showed no gender disparity while the nine cases (9) of renal tumours among the children showed a male: female ratio of 1:3. All the three testicular tumours seen as well as the two penile cancers were in adults.

Within the period under this study, the annual percentage increments for prostate cancers are 1.6%, for (2000-2001) 1.5%, for (2002--2003) 1.7 % for (2005-2006), and 1.6% for (2006-2007). The disease stabilized between 2001-2002; and 2003-2005.

For Bladder cancers, the annual percentage increment of 9% was noted in 2000-2001, and 3.1% for 2002-2003. However, there was an increment of 3.1% noted between 2003-2007; in this study. There were no significant changes in the yearly occurrences of the other tumour worthy of note.

The histological types of genitourinary cancers are shown in table III. All the cases of prostate cancers seen in our series were adenocarcinoma. Of all the bladder cancers diagnosed, transitional cell carcinoma constituted the majority 17(51.5%), followed closely by squamous cell carcinoma of the bladder. The adult kidney cancers were adenocarcinoma and transitional cell carcinoma. All the cases of nephroblastoma were seen in

Table III: Histological Classification of Tumours

Tumour Site	Total of Cases	Histological types	No (%)
Prostate	63	Adenocarcinoma	63(100%)
Bladder	33	Adenocarcinoma	3(9.1)
		Squamous Cell Carcinoma	13(39.4)
		Transitional Cell Carcinoma	17(51.5)
Kidney	17	Adenocarcinoma	6(35.3)
		Nephroblastoma	9(52.9)
		Transitional Cell Carcinoma	2(11.8)
Testis	3	Rhabdomyosarcoma	1(33.3)
		Seminoma	2(66.7)
Penis	2	Squamous Cell Carcinoma	1(50)
		Kaposi sarcoma	1(50)

DISCUSSION

Urological malignancies represented 11.8% of all cancers seen in our own series. An earlier study carried out in Zambia between 1990-2005 showed a lower incidence of 8.4%⁽¹³⁾. In the united state however, urological cancers represented 16.4% of all new malignancies reported annually⁽²²⁾. This shows that urological malignancies are on the increased.

Urological cancers are generally more seen in male, with an observed male to female ratio of 5:1 in our series which is similar to several other studies^(1,11,13,23). This may

reflect the fact that cancers of the prostate, penis and testis occurs only in men. Whereas several studies have shown persistent male predominance in bladder and kidney cancers, our findings of a female to male ratio of 3:1 for bladder cancers and 1.8:1 for kidney is at variance with these studies. Although certain habits and lifestyles such as cigarette smoking, industrial exposures and occupational hazards are established in the US and Europe as the most important risk factors for developing bladder cancers among men, there may be comparatively a differential exposure to these hazards in our environment. Risk factors such as genetics and familial predisposition, a tendency towards postponement of urination in public leading to longer retention of carcinogens, increase exposure to chemotherapeutic and radiation in females who seek medical treatment more than men may probably explain a higher female ratio recorded in this study. However this may warrant further studies.

The annual incidence of prostate cancer is on the increase according to our study in which we noted an annual increment of 1.6%, for (2000-2001), 1.5%, for (2002--2003), 1.7 % for (2005-2006), and 1.6% for (2006-2007) respectively and is in keeping with several other studies from within and outside Nigeria^(1-2, 8, 13).

Prostatic adenocarcinoma was the most common urologic malignancy representing 53.4% of all urological cancers seen in our series. This agrees with the reports of Klufio from Ghana and Sow et al from Cameroon^{(11) (24)}. Prostate cancer is the most common urologic malignancy worldwide with varying incidences. This finding is however at variance with that of Elem et al where squamous cell carcinoma of the urinary bladder was the most common in Zambia⁽¹³⁾. This may be explained by the high association of schistosomiasis with bladder carcinoma in their series suggesting endemicity of schistosomiasis. The mean age at diagnosis of prostate was 69.4 in our study which is in keeping with several studies^(8, 25).

Bladder cancer has been on the increase in our series especially from 2000 to 2001 with annual increment of 9% and 3.1% for 2002-2003 and a uniform incidence from 2003-2007. The stabilization may be connected to effective intervention programmes.

Carcinoma of the urinary bladder was the second most common urological malignancies in this study. This is generally in agreement with other studies in this sub-region⁽¹¹⁾⁽²³⁾. The predominance of transitional cell carcinoma followed by squamous cell carcinoma seen in our series conforms with studies done in Jos⁽²⁶⁾ and some parts of Africa, but contrasted with studies done in Zambia, Egypt and elsewhere where squamous cell carcinoma was reported as the most common type⁽¹²⁻¹³⁾.

Increasing rate of transitional cells carcinoma noted in our study may be attributed to increased urbanization and industrialization exposing the patients to new carcinogens.

Malignant tumour of kidney (14.4%) represents the third most common urological malignancy, which is similar to that seen in Jos⁽²⁶⁾, but differ from the cases reported from Zambia⁽²³⁾ where kidney cancers was the fourth urological tumour. Nephroblastoma was the most common malignant tumour of the kidney and was seen only in children with their age ranging 0.6-15years. In some centres, nephroblastoma is the most common childhood tumour. Renal cell adenocarcinomas are the most common malignant tumour of the kidney seen in adult in our study which agrees with several studies worldwide⁽²³⁾. Similarly, renal cell adenocarcinoma was the second most common tumour of the kidney in this present report as seen in Jos⁽²⁶⁾. The aetiology of renal cell carcinoma is unknown with hereditary genes accounting for 4%, and tobacco usage the most prominent risk factor documented.

Whereas the incidence of testicular and penile cancer is low in this study, there were no cases of ureteric or urethral malignancies found. This finding has also being reported by other researchers.^(20, 26-28)

We conclude that prostate, urinary bladder and renal carcinomas are the three most common urological malignancies in North Eastern Nigeria. However, we recommend a prospective, multi-centered study to enhance a broader documentation of the pattern of urologic malignancy in Nigeria with paucity of data and Africa at large.

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