

Original Research Article

Histopathologic Patterns of Urological Malignancies in Calabar, South-southern Nigeria: A Ten-Year Review

ABSTRACT

Background: Malignant diseases have become more prominent in Nigeria over the past years with urological malignancies contributing significantly to cancer related morbidity and mortality. Prostate cancer currently, is topical as the most common urological cancer encountered in the country. Other urological cancers have not been as common.

Aim: This study was carried out to document the pattern and distribution of urological malignancies seen in a tertiary hospital in Calabar, South-southern Nigeria over a 10-year period

Study design: This was a single institutional retrospective study.

Place and Duration of Study: The study was carried out in the Department of Urology, University of Calabar Teaching Hospital, Nigeria. Cases of all pathologically proven urological malignancies managed between January 2006 and December 2015 were included.

Methodology: Data of all patients with histological diagnosis of urological cancers were retrieved from patients' case notes, operation registers and histopathology records. Patients' demographic data, tumour site, histologic diagnoses as well as pathologic grades of tumours were extracted and analysed.

Results: A total of 617 cases of urological malignancies were included in the study over the 10 years under review, comprising of 598 (96.9%) males and 19 (3.1%) females giving a male: female ratio of 31.5:1. There were 600 adults (97.2%) and 17 children (2.8%). The mean age was 43.4 with range of 1-100 years. The frequency of urological cancers showed prostate cancer to be the most common urologic cancer as follows: Prostate cancer constituted 564 (91.4%), Kidneys 27 (4.4%), Urinary bladder 9 (1.5%), Testis 8 (1.3%), Scrotum 5 (0.8%), Penis 2 (0.3%) and Urethra 2 (0.3%). The most common histologic type of prostate cancer was adenocarcinoma with Gleason Grade III being the commonest grade.

Conclusion: Prostate cancer is by far the commonest urological malignancy, with renal cancer being a distant second in Calabar in contradistinction to other parts of the country where bladder tumours are the second most common malignancy.

Keywords: Calabar, histopathologic patterns, bladder, kidney, prostate, urological malignancies

1. INTRODUCTION

Urological malignancies contribute significantly to cancer related morbidity and mortality in Nigeria and worldwide. Several studies carried out in Nigeria have shown urological malignancies to be on the increase in various parts of the country with prostate cancer being the commonest cancer affecting men in the country.¹⁻⁴ Data from the office of National Statistics, England and Wales documented in 2000 and 2001 revealed that cancers of the prostate, testis, penis, kidney and bladder account for 16.5% of all new cases of cancer and 11.7% of cancer deaths.^{5,6}

2. METHODOLOGY

This was a retrospective analysis of all pathologically proven urological malignancies seen at the University of Calabar Teaching Hospital, Calabar from January 2006 to December 2015. Records of all patients with histological diagnosis of urological cancers were retrieved from patients' case notes, operation registers and histopathology records. Patients' demographic data, tumour site and histologic

27 diagnoses were extracted and data obtained was analyzed using SPSS (Statistical Package for
28 Social Sciences) version 20.0.

30 3. RESULTS

31
32 A total of 617 cases of urological malignancies were included in the study over the 10 years under
33 review. It comprised of 598 (96.9%) males and 19 (3.1%) females giving a male: female ratio of
34 31.5:1. There were 600 adults (97.2%) and 17 children (2.8%). The mean age was 43.4 years with
35 range of 1 to 100 years. Prostate cancer was seen in 564 patients (91.41%), renal malignancies in 27
36 (4.38%), cancer of the urinary bladder in 9 (1.46%), testicular tumours in 8 (1.30%), scrotal cancer in
37 5 (0.81%), cancer of the penis in 2 (0.32%) and urethral tumours in 2 patients (0.32%). (Table 1)

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39
40 **Table 1: Distribution of urological malignancies according to anatomic site, sex and maturity**

Anatomic Site	Male	Female	Total	Adult	Children	Total
Prostate	564	0	564	564	0	564
%	91.41	0.00		91.41	0.00	91.41
Kidney	13	14	27	14	13	27
%	2.11	2.34		2.27	2.11	4.38
Testis	8	0	8	5	3	8
%	1.30	0.00		0.81	0.49	1.30
Scrotum	5	0	5	5	0	5
%	0.81	0.00		0.81	0.00	0.81
Urinary Bladder	5	4	9	8	1	9
%	0.81	0.67		1.30	0.16	1.46
Urethra	1	1	2	2	0	2
%	0.16	0.17		0.32	0.00	0.32
Penis	2	0	2	2	0	2
%	0.32	0.00		0.32	0.00	0.32
Total	598	19	617	600	17	617
% Total	96.92	3.08	100.00	97.24	2.76	100.00

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42 Adenocarcinoma was the most common histologic type of prostate cancer (99.1%) with only one case
43 of urothelial cancer recorded. The kidney cancers were mostly adenocarcinoma, seen mostly in the
44 adult population closely followed by nephroblastoma, which were all seen in children. Bladder cancers
45 were mostly of the urothelial variety. (Details in Table 2)

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47 **Table 2: Histologic types of the various Malignancies**

Histologic Type		Frequency	Percent
Prostate			
	Adenocarcinoma	563	99.82
	Urothelial carcinoma	1	0.18

	Total	564	100.00
Bladder			
	Urothelial Carcinoma	6	66.67
	Nephroblastoma	1	11.11
	Pleomorphic Sarcoma	1	11.11
	Adenocarcinoma	1	11.11
	Total	9	100.0
Renal			
	Adenocarcinoma	14	51.86
	Nephroblastoma	11	40.74
	Urothelial Carcinoma	1	3.70
	Embryonal Tumor	1	3.70
	Total	27	100.00
Testes			
	Seminoma	5	62.50
	Sertoli cell	1	12.50
	Granulosa cell	1	12.50
	Rhabdomyosarcoma	1	12.50
	Total	8	100.00
Scrotum			
	Kaposi Sarcoma	2	40.00
	Squamous cell Carcinoma	1	20.00
	Angioleiomyoma	1	20.00
	Malignant melanoma	1	20.00
	Total	5	100.00
Urethra			
	Papillary	1	50.00
	Adenocarcinoma	1	50.00
	Total	2	100.00
Penis			
	Kaposi Sarcoma	1	50.00

	Condylomatous Squamous cell carcinoma	1	50.00
	Total	2	100.00

Gleason grade III (44.15%) was the most common grade of prostate adenocarcinoma recorded followed by Gleason IV (35.99%) and distantly followed by Gleason V (10.46%). (Details in Figure 1).

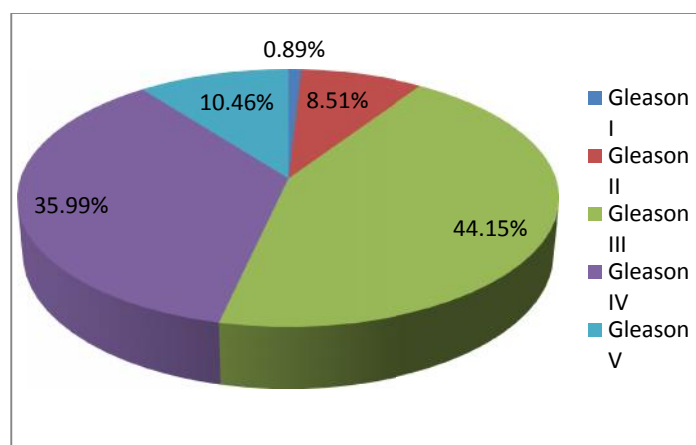


Figure 1: Histologic Grades of Prostate Adenocarcinoma in the patients

4. DISCUSSION

The frequency of urological cancers in this study has shown that prostate cancer is by far the commonest urological malignancy in Calabar with 564 patients (91.41%). This has further reiterated the findings from an earlier study by Ekwere and Egbe⁷ in this institution 16 years earlier. Previous studies carried out in different parts of the country as well as other countries have demonstrated prostate cancer to be the most common among the urological malignancies. This is not surprising as it is currently the commonest malignancy affecting males worldwide^{4,8-10}. However the reason for its overwhelming dominance (Over 91%) in our study is not readily available. The impact of lifestyle including diet may need to be assessed in subsequent research in order to ascertain the cause. Adenocarcinoma was the most common histologic type of prostate cancer seen in this study with over 99% of cases and only one case (0.18%) being urothelial cancer. Obiorah and Nwosu¹¹ reported that all the cases of prostate cancer in their study were adenocarcinoma while Klufio¹⁰ reported 99% of their cases in a Ghana study to be adenocarcinoma and indeed other studies have reported adenocarcinoma as the most common histologic type^{2,12}. Gleason III was the most common grade of prostate adenocarcinoma with 44.5% of patients, showing the tumours to be predominantly well differentiated. This was followed by Gleason IV seen in 35.99% of patients. A similar finding was recorded in Zaria by Oluwole et al² where the predominant Gleason grade was III.

Twenty seven patients (4.38%) had renal malignancies, making it a distant second. Earlier studies carried out in various parts of the country have indicated bladder tumours to be the second commonest urological malignancy in Nigeria^{4,9} but in our study renal cancer was second commonest. The male female ratio for renal malignancies was 1:1.08. This female preponderance was also recorded by Akinfenwa et al¹³ in Kano with a male female ratio of 1:1.9. More researchers have however reported it to be more common in males than females¹⁴⁻¹⁶. Adenocarcinoma was the most common histologic type of renal malignancy seen (51.86%) followed by nephroblastoma (40.74%). Of the 13 children affected, 11 had nephroblastoma, one had embryonal renal cancer (a rare histologic type) and the other had adenocarcinoma. All other cases of adenocarcinoma were seen in the adult patients. The single case of urothelial cancer recorded was that of a 59 year old male.

Nine cases (1.5%) of urinary bladder cancer were seen in our study. This is a small number compared with the 217 cases recorded by Takure et al¹⁷ over 17 years in Ibadan, 97 cases (31.7%) recorded by Mandong et al⁴ over 10 years in Jos, 33 cases (28.0%) by Dauda et al⁹ over 7 years in Gombe and 117 cases (21.3%) by Klufio¹⁰ over 10 years in Ghana. This makes bladder cancer an uncommon

cancer in our own environment. Most of these patients (66.67%) had urothelial cancers. Takure and colleagues¹⁷ had demonstrated in their study in Ibadan that urothelial bladder tumours were the most common histological pattern seen in Nigerians and our study further went on to prove this. Only one child (11.11%), a 5 year old female, had bladder cancer in our study and the histology was nephroblastoma, which is a very rare histologic variant.¹⁸

Testicular cancer was seen in 8 patients (1.3%) with 5 (62.50%) of them being seminomas. Out of 8 cases of testicular cancer recorded by Magoha¹⁹ over 5years in his study in Lagos, 50% were seminomas. Germ cell tumours have been recorded to be the commonest variety of testicular tumours worldwide²⁰ and our study reflected this pattern. Five cases of scrotal cancer (0.8%) were recorded in our study. Not many scrotal cancers have been documented in Nigerian studies. Ofuru¹² et al documented a single case of squamous cell carcinoma in their study. This makes scrotal cancer relatively common in our environment. Of the 5 cases recorded, 2 were Kaposi sarcoma with 1 case each of squamous cell carcinoma, angioleiomyoma and malignant melanoma. With two cases each, penile and urethral cancers were found to be the rarest of the urologic malignancies in Calabar.

Over 91% of patients in this study had prostate cancer making it the most common urologic malignancy in Calabar. There is therefore the need to increase efforts at early diagnosis and management of the disease in order to reduce the morbidity and mortality that could be associated with the disease. Part of this should include increased awareness campaigns so that majority of the population is aware of the disease, its common symptoms, diagnosis and treatment. This is especially important bearing in mind the poor healthcare seeking attitudes of Nigerian patients especially concerning lower urinary tract symptoms as earlier documented by Olaopa et al²¹ in Ibadan and Bassey et al²² in Calabar. Secondly, the need for routine screening for prostate cancer is further strengthened by the results of this research. This recommendation if carried out will result in early diagnosis and treatment of the disease with subsequent reduction in its devastating effects.

5. CONCLUSION

Urological malignancies in Calabar have varied occurrence ranging from the very common prostate cancer to the very rare urethral and penile cancers. Renal cancers are more common than bladder cancers in Calabar unlike the case in other parts of the country. Scrotal cancers have been found to be relatively common in our environment.

CONSENT

Not applicable

ETHICAL APPROVAL

Not applicable

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