

An overview of cancer of the prostate diagnosis and management in Nigeria: The experience in a Nigerian tertiary hospital

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Abstract

Objective: To review our experience with cancer of prostate management, highlighting the mode of presentation, method of diagnosis, and the treatment outcome.

Methods: Medical records of patients managed for cancer of prostate were retrospectively reviewed over a 10-year period. Relevant information which included the year of diagnosis, age at presentation, mode of presentation, digital rectal examination (DRE) findings, ultrasound (USS) assessment of the prostate, the prostate-specific antigen (PSA) value, the histology report, treatment offered and the outcome were extracted. Data were analyzed with SPSS version 11 software.

Results: A total of 192 patients were managed for cancer of prostate within the study period but only 90 case notes were available for analysis. There was a 7.7 fold increase in the incidence of cancer of prostate. The mean age (\pm SD) at presentation was 68.4 (\pm 10.1) years with an age range of 47–91 years and the peak incidence occurred in the seventh and eighth decades of life. The mean duration of symptoms prior to presentation was 10.3 (\pm 17.1) months. A total of 66.7% of cases presented within 6 months of the onset of symptoms as against 14.4% of cases presented after a year. Majority of cases (88.9%) presented as locally advanced or metastatic disease and only 4.4% of cases were found incidentally. Only 38.9% had histologic confirmation of the diagnosis before management was instituted. DRE gave a false negative finding in 28.6% in this study. The sensitivity and false negative value of USS was 50% each and 3.3% had PSA within normal value. Bilateral orchidectomy was offered to 64 of 90 (71.1%) and the cancer related death (CRD) was 15.6%. The maximum follow-up period was 36 months in this study and 36.9% are still attending follow-up clinic.

Conclusion: There was an apparent increase in the incidence of cancer of prostate from the present study with majority still presenting with advanced disease. The sensitivity of DRE was high; this probably accounted for the treatment without establishing the histologic diagnosis in majority of the cases. Such a practice of clinical diagnosis alone should be discouraged.

Keywords: Cancer of prostate, mode of presentation, outcome, treatment

Résumé

Objectif: Pour consulter notre expérience avec le cancer de la prostate gestion, mise en évidence du mode de présentation, méthode de diagnostic et le résultat du traitement.

Méthodes: Les dossiers médicaux des patients gérés pour le cancer de la prostate ont été examinées a posteriori sur une période de 10 ans. Des informations pertinentes qui inclus l'année de diagnostic, l'âge, à la présentation, le mode de présentation, les conclusions numérique toucher rectal (TR), évaluation des ultrasons (USS) de la prostate, la valeur de l'antigène prostatique spécifique (PSA), le rapport de l'histologie, traitement offerts et les résultats ont été extraites. Les données ont été analysées avec SPSS version 11 logiciels.

Résultats: Un total de 192 patients étaient gérés pour le cancer de la prostate au sein de la période d'étude, mais seulement 90 notes de cas étaient disponibles pour l'analyse. Il y avait une augmentation de 7,7 pli dans l'incidence

du cancer de la prostate. La moyenne d'âge (\pm SD) à la présentation était 68.4 (\pm 10.1) ans avec une tranche d'âge de 47–91 ans et l'incidence de pointe s'est produite dans les décennies septième et huitième de la vie. La durée moyenne de symptômes avant à la présentation était 10.3 (\pm 17.1) mois. Un total de 66,7% de cas présentés dans un délai de 6 mois à compter de l'apparition des symptômes contre 14,4% des cas présentés après un an. La majorité des cas (88,9%), présenté comme une maladie localement avancée ou METASTATIQUE et seulement 4,4% des cas ont été trouvés par ailleurs. Seulement 38,9% avaient histologiques confirmation du diagnostic avant de gestion a été instituée. Y a donné une fausse conclusion négative de 28,6% dans cette étude. La valeur négative de l'USS, sensibilité et false avait 50% chacun et 3,3% PSA au sein de la valeur normale. Orchidectomy bilatéral a été offerte à 64 de 90 (71,1%) et le cancer liés à la mort (CRD) était 15,6%. La période maximale de suivi a été 36 mois dans cette étude et 36,9% fréquentent toujours suivi clinique.

Conclusion: Il y a une augmentation apparente de l'incidence du cancer de la prostate de la présente étude à majorité présentant encore les avancé de la maladie. La sensibilité de l'évaluation était élevée; cela représentait probablement le traitement sans établir le diagnostic histologiques dans la majorité des cas. Une telle pratique de diagnostic clinique seul devrait être déconseillée.

Mots-clés: Cancer de la prostate, le mode de présentation, de résultat, de traitement

Introduction

Cancer of the prostate (CaP) is the most frequently diagnosed cancer among men in the United States.^[1] Previous studies seem to suggest a low incidence rate of CaP in Nigeria; this was attributed to low level of androgen which protects Nigerians from the disease.^[2,3] Studies have shown similar androgen levels among Nigerians, Black Americans, and indeed the rest of the world, thus disputing this assertion.^[4]

The introduction of prostate-specific antigen (PSA), in addition to trans-rectal ultrasound (TRUS) and other circulating biomarkers, has revolutionized CaP screening. These have resulted in early detection, increased incidence, and improved survival.^[5]

Several studies have documented a progressive increase in the incidence of CaP in Nigeria and West Africa subregion in the recent times.^[6-12] The prognosis of CaP depends on the stage of the disease, the grade or biologic behavior of the malignant cells, and the modalities of treatment. In our environment, patients often present very late and the treatment options are limited and most often are palliative.^[6-12]

We review our experience with CaP management over a 10-year period to highlight the mode of presentation, method of diagnosis, treatment, and the outcome.

Materials and Methods

This was a 10-year retrospective study of case notes of all patients who were managed for CaP in our centre from January 1997 to December 2006. The urology unit register, medical health record unit, the operation register and the cancer registry unit were the sources of data retrieved.

Relevant information regarding the review, which included the year of diagnosis, age at presentation, presenting features, digital rectal examination (DRE) findings, abdomino-pelvic ultrasound (USS) assessment of the prostate, the PSA value, the histology report, treatment offered, and the outcome, were extracted. Data were entered into a Proforma and analyzed with SPSS version 11 software.

Results

A total of 192 cases of CaP were managed within the study period. The cancer registry had a total of 150 cases recorded, of which 7 new cases of CaP were recorded in 1997 and this had risen to 54 new cases in 2006. This represents a 7.7 fold increase in the incidence of CaP. In addition, CaP makes up 6.65% of the registered cancers during the period under review. Among the 192 cases that were recorded, only 90 case notes were available for analysis. These constitute 46.9% of cases managed within the period under review and formed the basis for further analysis.

The mean age at presentation was 68.4 \pm 10.1 years with an age range of 47–91 years. The peak incidence occurred in the seventh and eighth decades of life, representing 74.2% of cases [Table 1].

The mean duration of symptoms prior to presentation was 10.3 \pm 17.1 months with a range of 1 week to 10 years. A total of 66.7% of cases presented within 6 months of the onset of symptoms as against 14.4% that presented after a year.

Majority of cases 80 of 90 (88.9%) presented as locally advanced or metastatic disease [Figure 1], some with paraplegia or paraparesis, and a patient presented with pathologic fracture of the humerus. Only 4.4% of cases were found incidentally following

open prostatectomy for benign prostate hyperplasia (BPH). It is pertinent to note that no patient was screen-detected (stage T_{1c}).

Thirty-five of the 90 cases (38.9%) had histologic confirmation of the diagnosis before management was instituted. Objective tumor grading commenced in the last 18 months of the study period and only 9 cases had such grading recorded. A mean Gleason Score of 5.6 ± 2.2 and a range of 2–8 were reported among them.

DRE suggested malignant lesion in 82.3% of all cases. However, considering only those with histologic diagnosis (30/90), DRE had a false negative finding in 28.6% in this study.

There was no USS report in 32 cases. Those that were reported had varying descriptive terms for the sonologic findings and sometimes not correlating with the final impression sonologically. Among those with USS report, 60.3% were with features consistent with benign lesion, and in those with histology report, the sensitivity and false negative value of USS were 50% each.

Only 66 (90) had PSA estimation done. The mean PSA was 65.96 ± 42.52 ng/ml. Three percent

of the study population had PSA in the normal range of value (0–4 ng/ml). Among those with histologic diagnosis, five cases had no record of PSA estimation. The mean PSA among those with histologic diagnosis was 69.48 ± 45.87 ng/ml and 3.3% had PSA within normal value.

Bilateral orchidectomy was offered to 64 of 90 (71.1%) [Table 2], among whom 28.1% had other adjuvant treatment, mainly antiandrogen, in the course of their treatment. Of them, 14 (15.6%) opted for androgen deprivation therapy (ADT), with mainly flutamide and diethylstilbestrol. One of the four cases with incidental tumor opted for watchful waiting.

The maximum follow-up period was 36 months in the present study. The cancer related death (CRD) was 15.6%. Seven cases (7.8%) discharged against medical advice and four cases (4.4%) were referred to other facilities [Figure 2]. Majority of the patients were loss to follow up with only 24 (65), 36.9% still attending outpatient clinic.

Discussion

There is a global increase in the incidence of CaP. The present study is in support of this trend and

Table 1: Distribution of the age with the percentages

Patient's age group (years)	Frequency	Percent	Cumulative percent
41–50	4	4.4	4.4
51–60	22	24.4	28.8
61–70	31	34.5	63.3
71–80	24	26.7	90.0
81–90	8	8.9	98.9
>90	1	1.1	100.0
Total	90	100.0	

Table 2: Types of treatment offered

Treatment offered	Frequency	Percent
Bilateral orchidectomy	46	51.1
Bilateral orchidectomy + antiandrogen	18	20.0
Antiandrogen therapy	14	15.6
Watchful waiting	1	1.1
Referred/discharged against medical advice	11	12.2
Total	90	100.0

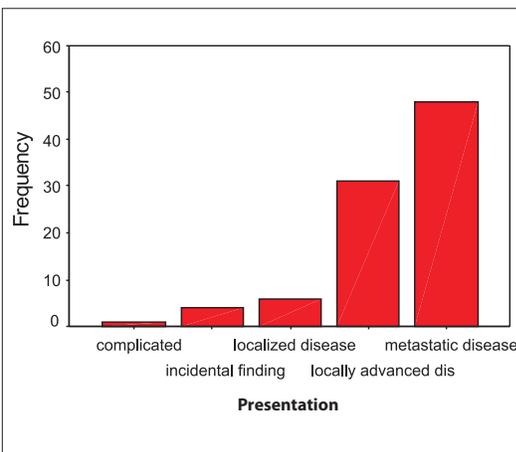


Figure 1: Bar Chart depicting the modes of presentation

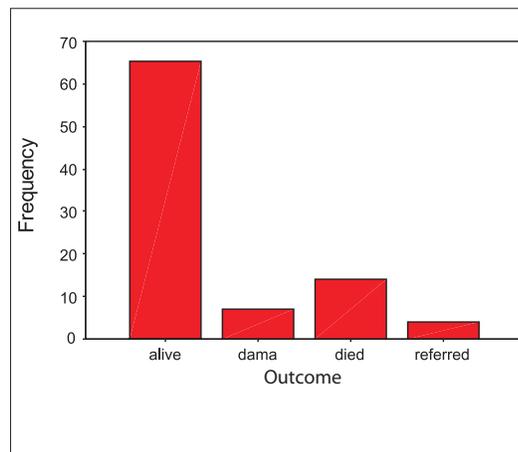


Figure 2: Bar chart showing the disposition of the patients

corroborates the finding of other investigators in our environment,^[7-11] with about 700% increase in the incidence between 1997 and 2006. However, a prospective study would be needed to ascertain if the increased incidence seen in this study is apparent from increase in diagnosis or a real increase in the incidence as being documented in literature. This becomes important because the probable reasons earlier adduced for this trend which include increased awareness of the disease, better documentation, increased use of PSA and needle biopsy in the evaluation of men presenting with lower urinary tract symptoms (LUTS)^[8,10] are difficult to be substantiated and thus cannot be generalized.

These reasons seem not tenable, judging from the findings from recent survey in our environment where awareness of CaP and use of PSA in screening was almost not existing. A better documentation cannot be justifiable when more than one half of the case notes cannot be traced for analysis in the present study. In addition, the present report shows that 60 of 90 had PSA estimation, not for CaP screening, but rather for diagnostic evaluation. As much as a third of the cases do not have USS with only 35 of 90 having histologic diagnosis of their cancer prior to treatment. All these findings do not support the assertion made by previous report.^[8]

The mean age as well as the peak age incidence is comparable to reports from this subregion and elsewhere.^[1,6-11] Although our youngest patient was 47 years old, investigators from Zaria reported CaP in a 37-year-old patient, Mbibu *et al* (Personal communication).

Majority of cases (86.7%) presented with LUTS and features of locally advanced or metastatic disease. The mean duration of presentation still remained long, further refuting the argument of better awareness and use of PSA among the populace. The increase in the incidence could probably be from increased patronage of the orthodox medical practice by the populace and thus, an apparent increase in the diagnosis.

The reason for the late presentation could stem from ignorance and marked poverty that has permeated our society. Other reasons, such as absence of screening program, inadequate diagnostic facilities, and lack of health education that has been previously reported^[8-11] still stand to be disputed.

DRE has been reported to have a sensitivity of between 30 and 50%.^[12,13] The false negative rate of 28.6% with DRE in this study, which further decreases if the four patients who were found incidentally (stage1) were excluded, seems to be

a better yield. However, since majority of our patients presented late, 86.7% (locally advanced and metastatic diseases), such a finding on DRE was not unexpected.

USS is available, cheap, and non-invasive. It was thought to have contributed significantly to the early diagnosis and thus increase in incidence of CaP. Unfortunately, however, only 58 of 90 patients had USS evaluation in this series, that too mainly abdomino-pelvic USS as against the transrectal USS that was preferred. There are varying terminologies used to denote the findings, sometimes with the report not in congruity with the final sonologic impression. Even then, among those with histologic diagnosis, the USS had sensitivity and false negative value of 50% each.

The use of PSA for diagnostic evaluation seems better in the present series when compared with that of Nwofor *et al*^[8] and Eke *et al.*^[10] However, its usefulness in differentiating CaP from BPH and other benign lesions of the prostate, is still out of reach in our environment. The authors are not aware of any center where the molecular forms of PSA are readily available for clinical evaluation. In addition, this present report suggests that about 3.3% of those with histologic diagnosis of CaP could have being missed using 4 ng/ml cut-off of PSA for CaP diagnosis.

Overwhelming clinical evidences as well as complications were subjectively used to diagnose CaP in 75% of cases from Nwofor's report due to unavailability of the facilities for needle biopsy and it not being affordable to patient.^[8] Similarly, and for reasons not readily conjectured, 61.1% of patients in our series were managed for CaP without histologic diagnosis. This was an unacceptable practice that must be entirely discouraged. Histology is the only *sine qua non* for labeling anyone with diagnosis of cancer and the only tenable proof in the court of law for medico-legal reasons.

Bilateral orchidectomy was offered to 64 of 90 patients (71.1%), among whom 28.1% had additional treatment in form of total androgen blockade (TAB). The remaining patients had ADT and watchful waiting. This compares favorably with findings from other studies from this part of the world.^[7-11] It confirmed the limited available modalities of treatment in our environment.

Generally, the follow up is poor and the percentage of cases loss to follow-up is quite worrisome. Even though the CRD was 15.6%, it is difficult to ascertain what has happened to those that were loss to follow up.

Conclusion

The present study tends to agree with earlier observations suggesting an increase in the incidence of prostate cancer. However, it was difficult to attribute these observations to the availability of PSA and/or increased awareness. The majority still presents at the late stage of the disease and available modalities of treatment are still limited. A co-ordinated campaign to educate the populace may be needed.

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