

## Prostate Cancer and Challenges in Management in a Semi-urban Centre: A 10-year Experience

### Abstract

**Introduction:** Prostate cancer (CaP) is the second most common cancer in men and the fifth most common cancer worldwide. The incidence in Nigeria is rising. Numerous challenges exist that prevent the successful management of these patients in this subregion. **Aims and Objectives:** This study aimed to report on the modes of presentation and difficulties encountered in managing patients with CaP in our environment with a view to finding solutions to these challenges. **Materials and Methods:** This was a retrospective study of all CaP patients who were managed in Alex-Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi State, Nigeria over a 10-year period from 2012 to 2021. Data were collated using a pro forma. Numerical data were summarized as means, median, and standard deviation, whereas categorical data were summarized as frequencies. Statistical significance was pegged at  $P < 0.05$ . **Results:** Seventy-three patients were analysed. The mean age of the patients was  $71.48 \pm 8.15$  years. The three most common presenting complaints were lower urinary tract symptoms (LUTSs) 23 (31.5%), acute urinary retention 9 (12.3%), and LUTS with low back pain 9 (12.3%). The median duration of symptoms was 6.5 months. No difference was noted among educational level, occupation, and stage of CaP, ( $P=0.222$  and  $P=0.548$ ), respectively. The median total prostate-specific antigen was 85.0 ng/mL. Sixty-seven patients (91.8%) had an abdominopelvic ultrasound scan. Fifty patients (68.5%) had stage 4 disease. Thirty-eight (52.1%) had financial constraints. Forty-nine (67.1%) patients were lost to follow-up. Bilateral orchidectomy was offered to 28 (38.4%) patients. **Conclusion:** Financial constraint was a huge barrier in the management of CaP patients in this study. Late presentation was common in this study.

**Keywords:** Challenges, management, Nigeria, prostate cancer

### Introduction

Prostate cancer (CaP) is the second most common cancer in men and the fifth most common cancer worldwide.<sup>[1]</sup> There has been an increase in the incidence of cancer of the prostate worldwide, with the highest incidence noted in Australia, North America, and West and North Europe.<sup>[2]</sup> This may be linked to the widespread use of prostate-specific antigen (PSA), screening, and subsequent biopsy.<sup>[2]</sup>

A hospital-based study in South-West Nigeria puts the prevalence of CaP at 182.5 per 100,000.<sup>[3]</sup> The majority of the patients with CaP in Nigeria and Africa present late with advanced disease.<sup>[3-5]</sup> Hormonal treatment by way of bilateral orchidectomy is the most common treatment offered to these patients in this subregion.<sup>[3,4,6]</sup>

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Challenges inherent in managing these patients in this subregion vary.<sup>[2]</sup> Public expenditure on health is \$8, which is far less than the recommended \$34 per capita, with out-of-pocket funding accounting for about 70% of total health expenditure.<sup>[2]</sup> At present, the National Health Insurance Scheme (NHIS) covers mostly the civil servants which are a low fraction of the total population. With these in the background, coupled with endemic poverty, most patients may not afford healthcare services, resulting in delays in presentations.<sup>[2,3]</sup>

This study aimed to report on the challenges encountered while managing these patients as a means of proffering solutions to reduce the incidence of late presentation of CaP and hence improve healthcare delivery in our environment.

### Materials and Methods

This was a retrospective cross-sectional study of all CaP patients who were

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managed in Alex-Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi State, Nigeria over a 10-year period from 2012 to 2021. Ethical approval was obtained from the hospital Ethics Committee. Alex-Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi State, Nigeria is the only referral hospital in the state. It serves the neighbouring states of Enugu, Abia, Imo, Cross River, and Benue. It is a multispeciality hospital with 800-bed capacity. The patients were seen in the surgical outpatient department of the hospital. Clinical evaluation included history of lower urinary tract symptoms (LUTSs), other relevant symptoms, and digital rectal examination. Total PSA staging investigations including computed tomography (CT) of abdomen, and multiparametric magnetic resonance imaging (MRI) were requested as indicated. Prostate biopsy was done for patients who met the indications. The options of treatment were discussed with the patients following diagnosis. Treatment depended on the stage of the disease, age, comorbidity, and patients' choice. They were subsequently followed up in the surgical clinics. The patients' case notes, urology register, medical health record notes, and nurses' notes were used to retrieve data. Data collected included the age of the patients, duration of symptoms, presenting symptoms, PSA, abdominopelvic ultrasound findings, and treatment offered.

Data were analysed using IBM SPSS Statistics for Windows, Version 25.0 (IBM Corp., Armonk, NY, USA). Categorical data were reported using frequencies and percentages, whereas continuous variables were reported using means, median, and standard deviation. Test of normality was done using the Shapiro–Wilk test. The Kruskal–Wallis *H*-test was used to assess association in abnormally distributed continuous data, whereas the  $\chi^2$  test was used to determine statistical significance for categorical data. Statistical significance was pegged at  $P < 0.05$ .

## Results

A total of 189 patients were seen during the period of study; only 100 case notes were available for analysis. Nineteen patients refused prostate biopsy, 8 patients were excluded due to incomplete data, leaving 73 patients for analysis. Close to half of the patients were farmers, as shown in Figure 1. The mean age of the patients was  $71.48 \pm 8.15$  years with a range of 53–91 years. No statistically significant difference in the duration of symptoms was noted among various occupations ( $P=0.942$ ). There were no differences between educational level, occupation, and stage of CaP ( $P=0.222$  and  $P = 0.548$ ), respectively.

LUTSs were the most common presenting symptoms occurring in 23 (31.5%) patients, followed by AUR 9 (12.3%) and then LUTS with low back pain 9 (12.3%), as shown in Figure 2. The median duration of symptoms was 6.5 months, with a range of 1–120 months

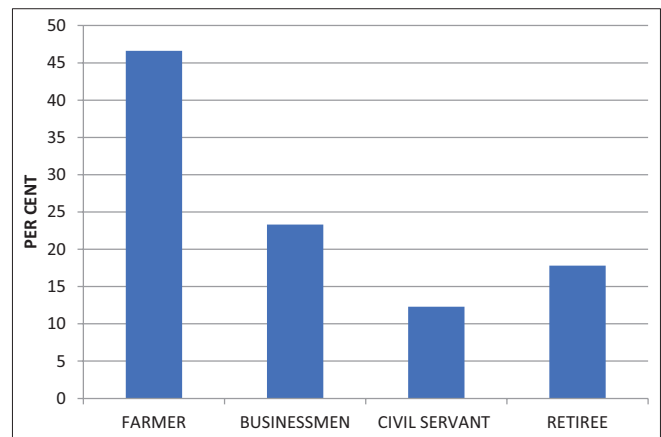


Figure 1: Bar chart showing the occupation of patients with prostate cancer (n = 73)

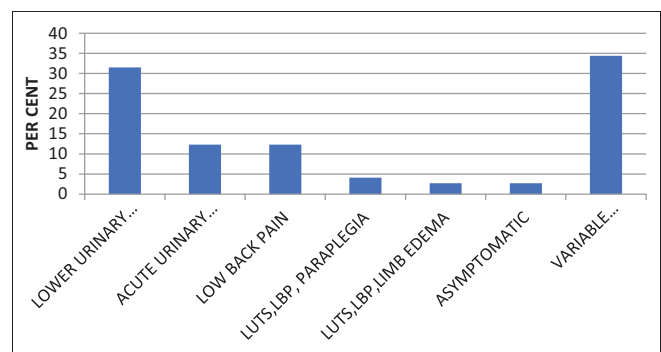


Figure 2: Bar chart showing the distribution of the symptoms with prostate cancer (n = 73)

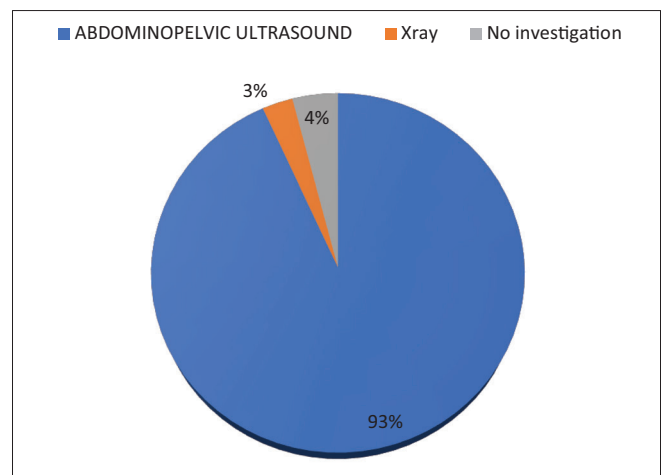


Figure 3: Pie chart showing investigations done by the patients with prostate cancer (n = 73)

The median total PSA was 85 ng/mL, with a range of 4–312 ng/mL. The median prostate volume was 68.6 mL, with a range of 7.64–1192.50 mL. Abdominopelvic ultrasonography was done on 67 patients (91.8%), 4 patients (5.5%) had no imaging investigations, whereas 2 patients (2.7%) had lumbosacral X-ray. No patient had multiparametric MRI. The investigations done are as shown in Figure 3.

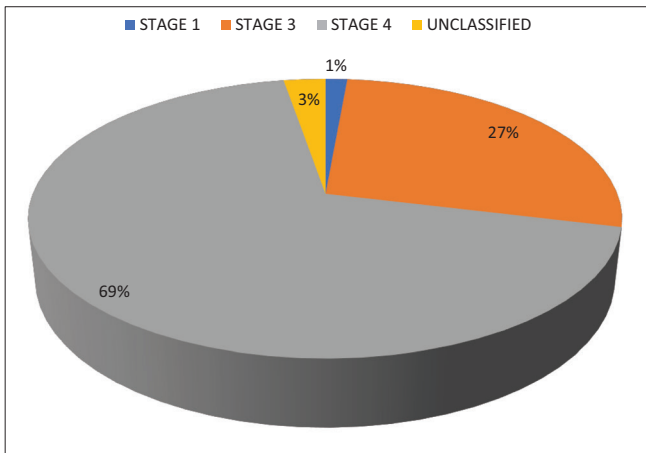


Figure 4: Pie chart showing the stage distribution of the patients with prostate cancer (n = 73)

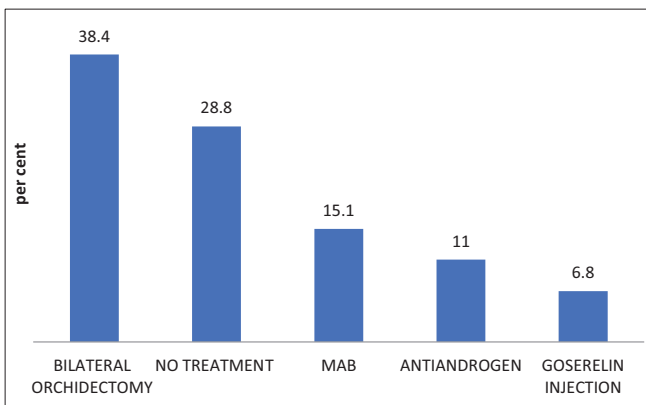


Figure 5: Bar chart showing the distribution of treatment received by the patients with prostate cancer (n = 73)

Fifty patients (68.5%) had stage 4 disease, whereas 20 patients (27.4%) had stage 3 disease. One patient (1.4%) had stage 1 disease, as shown in Figure 4.

Bilateral total orchidectomy was offered to 28 (38.4%) patients, 11 (15.1%) had maximal androgen blockade, goserelin injection in 5 (6.8%), anti-androgen 8 (11%) and 21 patients (28.8%) had no treatment, as shown in Figure 5.

Thirty-eight patients (52.1%) had financial constraints. Forty-nine patients (67.1%) were lost to follow-up.

## Discussion

CaP is a common malignancy in ageing men. The incidence of this disease in Nigeria is on the rise.<sup>[3,7,8]</sup> The African region has inherent peculiarities that may impede the management of CaP.<sup>[2,9]</sup>

The age range of 53–91 years with a mean age of 71.48 years is in keeping with the age of occurrence of CaP worldwide.<sup>[4,9-11]</sup> This is similar to the findings of earlier authors in Nigeria and South Africa where they noted a mean age of CaP patients ranging from 64 to 70 years.<sup>[3,4,9,12]</sup>

Late presentation is common in Africa.<sup>[3-5,8,9,13]</sup> The reasons for this pattern of presentation lie in the peculiarities of this subregion; lack of comprehensive health insurance, illiteracy, and poverty.<sup>[2,13,14]</sup> Public health expenditure is about \$8 per capita, compared with the recommended \$34.<sup>[2]</sup> The pyramidal structure of the health system ensures uneven access to specialist care.<sup>[2]</sup> The urban dwellers have access to these services, which are clustered in the cities leaving the rural dwellers behind in the race for specialist care. As such, patients seek cheaper alternative health care before seeking medical attention.<sup>[13]</sup> This could explain the mean duration of symptoms of 6.5 months in this study. This is similar to the findings of earlier authors in Nigeria where patients presented after 10–15 months.<sup>[3,4]</sup> Majority of the patients in this study were subsistent farmers and as such may not be aware of the signs and symptoms of CaP. Moreover, these patients are also poor and may not be able to afford the cost of care in tertiary hospitals.

As much as 68.5% of patients had stage 4 disease on presentation. This pattern was similar to the finding of earlier authors in Nigeria, Rwanda, and Sudan, where 85–88% of patients had advanced disease on presentation.<sup>[4,5,15]</sup> This is in contrast to the findings in developed countries where only 10% of patients have metastatic disease on presentation.<sup>[16]</sup> This reason for this aberration may not be unrelated to the explanations given earlier.

LUTSs, low back pain, and AUR are features of advanced disease.<sup>[11,17,18]</sup> The three most common presenting symptoms in this study were LUTSs, AUR, and LUTSs with low back pain. This is similar to what was described in South Africa, Rwanda, and Sudan where these symptoms constituted the bulk of presentation.<sup>[5,9,15]</sup>

The median total PSA of 85 ng/mL with a range of 4–312 ng/mL is similar to the findings of earlier authors. Ajape *et al.*<sup>[4]</sup> in Ilorin reported a mean PSA of 66 ng/mL.<sup>[4]</sup> This high PSA is associated with an advanced disease which is the case of most of the patients in our study and earlier reports by previous authors.<sup>[3,4]</sup>

Abdominopelvic ultrasound was the most common investigation in this study. No patient had appropriate staging with multiparametric MRI. The reason is related to the aforementioned explanations—poverty. Routine abdominopelvic ultrasound scan costs \$6, whereas multiparametric MRI costs \$61 in our environment.

The treatment of CaP varies according to the stage of the disease.<sup>[16,19]</sup> With early disease, treatment is curative.<sup>[19]</sup> However, with advanced diseases, hormonal manipulation is the mainstay of treatment.<sup>[16]</sup> About 38% of the patients in this study had bilateral total orchidectomy (BTO), with 6.8% opting for goserelin injection. BTO was the most common treatment in a study in Ilorin, Nigeria.<sup>[4]</sup> This is in sharp contrast to what is obtainable in developed countries where the hormonal injection is commonly

used.<sup>[16]</sup> The reason for this difference may be because orchidectomy was more cost-effective coupled with the fact that healthcare expenditure in this region is out-of-pocket.<sup>[6]</sup> The cost of BTO in this facility is about \$61 dollar, whereas the monthly goserelin injection costs about \$69. These patients usually chose the cost-effective alternative. This, in addition to being cheaper, also eliminates the need for frequent hospital visits as these patients live in the hinterlands and have to travel long distances to access urologic care.

As much as 67.1% of the patients were lost to follow-up. The reasons for this may not be farfetched. This may be due to financial constraint, which was evident in this study; as much as 52.1% of the patients had a financial constraint. Another factor may be illiteracy. The patients may not have understood the gravity of the disease and as such may not see the need to seek further care in the hospital.

The high rate of financial constraints (52.1%) may explain the high number of patients who were not treated in this study. As much as 40% of patients did not receive treatment.

The limitation of this study was the lack of appropriate staging investigations. The clinical staging methods used in the study may have understaged the disease.

Presently, National Health Insurance Services cover the civil servants, which are a fraction of the population. We recommend comprehensive health insurance which should cover all citizens. CaP awareness programs should be incorporated into church and mosque lectures, market meetings, and health talks in local languages in local TV/radio stations. CaP screening services should be extended to reach the hinterlands. This can be achieved by establishing more primary healthcare facilities and incorporating CaP screening services to these centres. Robust healthcare checkups with incentives would help reduce the late presentations. A well-structured referral system would ensure that any disease discovered is referred and treated appropriately. Finally, poor record keeping posed a challenge in this study as a huge number of case notes could not be retrieved. Improvement in record keeping by way of the implementation of the use of electronic medical records in hospitals will go a long way in improving case note availability for research.

## Conclusion

The majority of the patients with CaP in this study presented late. Financial constraints played a huge role in the management of these patients. CaP awareness, screening, and comprehensive health insurance schemes should be instituted to ease these challenges.

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## Conflicts of interest

Nil.

## Authors' contribution

CJO—Substantial contributions to conception and design, acquisition of data, analysis and interpretation of data, drafting the article, revising it critically for important intellectual content, and final approval of the version to be published.

AOO—Substantial contributions to conception and design, acquisition of data, analysis and interpretation of data, drafting the article, revising it critically for important intellectual content, and final approval of the version to be published.

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