

Original Research Article

Comment [A1]:

Comment [A2]:

MODES OF PRESENTATION OF PATIENTS WITH SUSPECTED PROSTATE CANCER IN
A NIGERIAN SEMI-URBAN TERTIARY HEALTH FACILITY.

Comment [A3]:

Abstract

Background: Prostate cancer is the most commonly diagnosed cancer in men and the second leading cause of cancer mortality after lung cancer worldwide. The incidence of this disease is high among men of African descent. The modes of presentation of patients with prostate cancer are varied. In this paper, an overview of the modes of clinical presentation of men with suspected prostate cancer and their relationship with the histological diagnosis of prostate cancer is presented.

Materials and methods: This was a prospective and hospital-based study. Patients who had a prostate biopsy done due to elevated prostate-specific antigen (PSA) levels, abnormal digital rectal examination (DRE), or a combination of both were included in this study. Their biodata, modes of presentation, and other clinical and histological information were recorded in a pro forma. Data analysis was done using the statistical programming for social sciences (SPSS) version 21. For all statistical tests, $P < 0.05$ was regarded significant.

Results: One hundred and thirty-two patients were recruited into this study. The mean age of the patients was 69.75 ± 9.15 years. Most participants (75%) were in their seventh and eighth

decades of life. The mean serum PSA level was 35.01 ± 8.52 ng/ml (range: 6 to 164 ng/ml), while the mean prostate volume was 101.4 ± 91.4 ml (range: 10–635 ml).

Lower urinary tract symptoms were the most common mode of presentation accounting for 97.7% (n=129). This was followed by haematuria (34.1%, n=45), low back pain (25.8%, n=34), weight loss (22.7%, n=30), and paraplegia/paraparesis (7.6%, n=10). Bone pains and paraparesis/paraplegia significantly correlate with the diagnosis of adenocarcinoma of the prostate.

Conclusion: The majority of men with suspected prostate cancer are symptomatic at presentation. The modes of presentation are varied with lower urinary tract symptoms being the most common. Low back pain and paraparesis/paraplegia are positive predictors of prostate cancer disease.

Keywords

Prostate cancer, modes of presentation, health facility, prostate-specific antigen.

Introduction

Prostate cancer is one of the most rampant cancers in men worldwide, with over one and a half million new cases annually.¹ Black men are more likely to be diagnosed at an earlier age, have advanced disease at that time of diagnosis, with the incidence generally rising with age.^{2,3} They also have a greater risk of advanced and metastatic disease at presentation.⁴ Whereas Asian countries have a low prevalence of prostate cancer, high incidence rates have been reported among Africans.^{5,6} Also, within the African continent, there have been reports of varying incidences of prostate cancer.^{6,7,8}

Prostate cancer presents in various ways. While early prostate cancer may be asymptomatic and incidentally discovered, advanced or metastatic prostate cancer may present with lower urinary

tract symptoms, weight loss, low back pain, paraparesis, or paraplegia.^{6,7,9} In sub-Saharan Africa, late presentation is rampant with the majority presenting with complications ranging from haematuria, urinary retention, to paraparesis and paraplegia. Various studies across Nigeria reported late presentation as the pattern of presentation with more than 60% of the prostate cancer patients having metastatic disease.^{6,10,11}

This study, therefore, aimed to assess the modes of presentation of patients with suspected prostate cancer in our health facilities, a tertiary health center that offers care for prostate cancer patients and to correlate the various modes of presentation with the histological diagnosis of prostate cancer.

Materials and methods

This is a prospective study carried out on 132 men who were investigated for prostate cancer on account of elevated serum PSA or abnormal DRE findings between June 2016 and May 2019 at Irrua Specialist Teaching Hospital and Central Hospital Auchi between October 2019 and April 2021, both within Edo State, Nigeria. Patients who fulfilled the selection criteria were recruited into the study. The purpose of the study was explained to each patient at the time of enrolment.

All patients underwent digitally guided TNBP on an out-patient basis using an 18G trucut biopsy needle mounted on an automatic spring-loaded gun. The biopsy needle was introduced into the rectum with the assistance of a gloved left index finger after adequate rectal lubrication with 2% lidocaine gel. Biopsy was performed in the day case theatre 2 hours after patients had taken 500mg of oral ciprofloxacin and 400mg of metronidazole (this was continued for three days after the procedure as per unit protocol). No form of bowel preparation was done, though patients were instructed to empty their bowel in the morning of the day of the biopsy. The prostate tissues were kept in 10% formaldehyde and sent for histological examination.

A structured pro forma was used to collect relevant patients' information including the demographic data, indication/indications for biopsy, preoperative serum PSA level, DRE findings, prostate volume, and histological results. The data obtained were analyzed using the Statistical Package for the Social Sciences (SPSS) for Windows program (version 21.0, SPSS Inc., Chicago, Illinois, USA.). Frequency distribution for the variables was presented in tables and bar charts. The level of significance of the variables was ascertained using Pearson's Chi-square test. For all statistical tests, $P < 0.05$ was regarded as significant.

Results

One hundred and thirty-two patients who had elevated serum PSA and/or abnormal DRE were included in this study. The mean age of the study participants was 69.75 ± 9.15 years while the age range was 51 to 100 years. **Figure 1** shows the percentage distribution of the various age groups of the study participants.

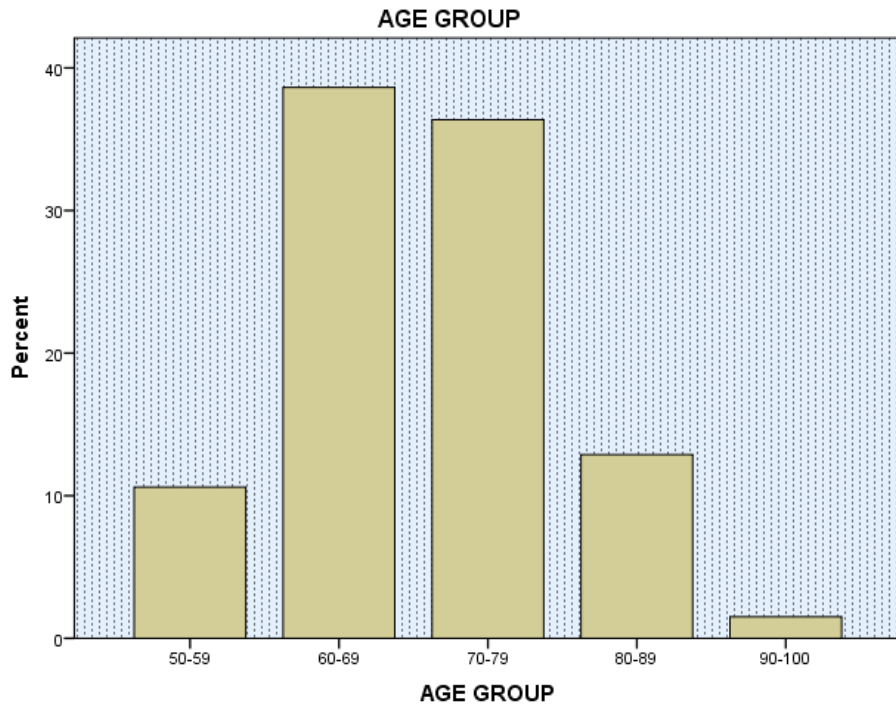


Figure 1: Percentage distribution of the various age groups of the study participants.

In all, 126 (95.5%) patients had elevated prostate-specific antigen with a mean total PSA of 35.01 ± 8.52 ng/ml (range: 6 to 164 ng/ml) while 82 (62.1%) had abnormal DRE findings. The means of the prostate volume and Gleason score were 81.83 ± 35.09 (range: 25.5 – 175.6 cm³) and 6.99 ± 1.42 (range: 4 to 10) respectively. About a third of the patients presented through the accident and emergency unit with either acute urinary retention or haematuria while 92 (69.7%) patients were seen at the urology outpatient clinic.

One hundred and twenty-nine (97.7%) patients presented with lower urinary tract symptoms making it the most common mode of presentation in this study. This was followed by

haematuria which was seen in about a third (34.1%) of the patients. The various modes of presentation of all the study participants are shown in Table 1.

Table 1: Mode of presentation of respondents with prostate cancer.

	Frequency (N)	Percentage (%)
Lower urinary tract symptoms		
Yes	129	97.7
No	3	2.3
Low back pain		
Yes	34	25.8
No	98	74.2
Weight loss		
Yes	30	22.7
No	102	77.3
Haematuria		
Yes	45	34.1
No	87	65.9
Paraparesis/paraplegia		
Yes	10	7.6
No	122	92.4

Of these presenting symptoms, low back pain and paraparesis/paraplegia were found to be linked to a histological diagnosis of prostate cancer (Table 2).

Table 2: The relationship between modes of presentation and histological diagnosis

Comment [A4]: If it is possible, add prostate histology images.

Variable	Total number of patients	Histology malignant		X ²
		Yes	No	
Lower urinary tract symptoms	129	84	45	0.140
Low back pains	34	28	4	0.001
Weight loss	30	24	6	0.197
Haematuria	43	31	12	0.539
Paraparesis/paraplegia	10	10	0	0.039

Out of the 132 patients, 84 (63.3%) had a histological diagnosis of adenocarcinoma. A quarter of the patients with histological diagnosis of prostate cancer had a Gleason score of 8 and above. All patients diagnosed with adenocarcinoma of the prostate in this study had androgen deprivation therapy.

Discussion

Prostate cancer is a major health challenge with insufficient data in Africa.¹² The majority of prostate cancer is diagnosed because of their presentation with symptoms and is usually confirmed by histological examination of the prostatic tissues. A transrectal ultrasound-guided biopsy is the widely favoured means of obtaining prostate tissues. Our study looked at the

various modes of presentation of 132 patients with suspected prostate cancer and their correlation with the eventual histological diagnosis in our health facilities.

The modes of presentation of patients with suspected prostate cancer are varied ranging from lower urinary tract symptoms, haematuria, weight loss, low back pain to paraparesis/paraplegia.

In this study, lower urinary tract symptoms were the most common mode of presentation accounting for 97.9% of the study participants. Most researchers both within and outside sub-Saharan Africa have reported similar findings.^{13,14} Lower urinary tract symptoms in the elderly have been regarded as an indicator of possible prostate cancer by patients¹⁵ and have been linked to prostate cancer by many clinicians.^{6,7,9,16} To this end, screening for prostate cancer using a prostate-specific antigen test has been recommended by some authors.^{15,16} In sub-Saharan Africa, where the majority of the patients present in the advanced stage of the disease with many having metastatic features,^{6,7,17} screening for prostate cancer in all elderly men presenting with lower urinary tract symptoms will enhance early detection and prompt management of prostate cancer.

Haematuria resulting from benign prostatic hyperplasia or adenocarcinoma of the prostate is a common urological condition accounting for 8-27% of all cases of gross haematuria. The aetiology may be due to the prostate pathology itself or as a side effect of the prostate disease treatments.¹⁸ The management of prostatic haematuria is non-specific with treatment dependent on the severity of the bleeding.^{12,18} Available options of management include observation, bladder irrigation, irrigation with transfusion, and emergency prostatectomy in recalcitrant prostatic bleeding.^{12,19} All patients with haematuria in this study had conservative management with none requiring emergency prostatectomy.

Paraplegia and paraparesis are debilitating symptoms of metastatic prostate cancer disease. They often result from spinal cord compression. It is often a sign of delayed presentation as most patients with paraplegia and paraparesis usually have advanced prostate cancer.^{6,7} One possible explanation for this, is the poor health care delivery system including the lack of prostate cancer screening policy in our environment. Generally, it is recommended that men above 50 years should be screened with digital rectal examination and serum PSA estimation. Some scholars have, however, questioned the effect of early detection on the outcome of treatment particularly in sub-Saharan Africa with limited modalities of treatment available.^{7,17}

A significant number of patients with histological diagnosis of adenocarcinoma of the prostate in this study presented with advanced stage of the disease as about 25% of the participants had a Gleason score of eight and above. Delay in presentation with symptoms among patients with cancer is likely to contribute to late-stage diagnosis and, thereby, poorer survival.²⁰ Reports from all regions emphasize late presentation as the pattern in Nigerian prostate cancer patients with the majority presenting with metastatic disease.^{21,22} A recent report implicated financial barriers, lack of or poor health insurance, and /or poor health-seeking behaviour as being responsible for the delayed presentation.²³ This is further corroborated by the fact that in the developed economy with good health insurance coverage, presentation is usually at an early stage of the disease with most men being asymptomatic at the time of diagnosis.²⁴

Furthermore, we examined the relationship between the various modes of presentation and the diagnosis of prostate cancer. Low back pain and paraplegia/paraparesis were the only positive predictors of the histological diagnosis of prostate cancer. Most of these patients have a high Gleason score, an indicator of advanced disease and poor prognosis.¹² This finding is in

agreement with the works of many scholars who reported advanced stage of prostate cancer at the time of presentation with attendant poor prognosis.^{6,7,8,9,10,11}

Conclusion

The majority of patients in sub-Saharan Africa are symptomatic at presentation. The modes of presentation of patients with suspected prostate cancer are varied with lower urinary tract symptoms being the most common. Low back pain and paraparesis/paraplegia are independent predictors of prostate cancer disease.

Declaration of ethical approval

The ethical approval for this study was given by the Ethical and Research Committee of Irrua Specialist Teaching Hospital, Irrua, Edo State, Nigeria with approval number: ISTH/HREC/2016/MARCH/27.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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