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Clinical Characteristics of African Men with Prostate Diseases in a Tertiary Centre in Western Kenya

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Background: ***Prostate diseases are a common problem worldwide. This study was aimed at o establishing the clinical characteristics of patients diagnosed to have prostate diseases in the Moi Teaching and Referral Hospital (MTRH) in Eldoret, Kenya.***
Methods: ***This was a cross-sectional, hospital based, descriptive study undertaken in the Urology Outpatient Clinic and Surgical Ward of MTRH. A total of 219 patients aged 50 years and above with prostate diseases were recruited into an Institutional Research and Ethics Committee (IREC) approved study after granting a formal consent. The primary outcome measure was the clinical characteristics of patients with acute prostatitis, Benign Prostate Hyperplasia (BPH) and Prostate Cancer in MTRH. The secondary outcome measures were the demographic data and co morbidities.***
Results: ***Patients' ages ranged from 50 to 96 years with a mean of 65.4 s.d. ± 10.2 years. The majority (68%) of them presented with a past history of urinary retention; 71.7% had palpably enlarged prostate on DRE. The annual incidence of prostate diseases in the Urology Clinic was 31.1% with the prevalence of Acute Prostatitis, BPH and Prostate Cancer being 1.8%, 63.9% and 34.3% respectively. Only 28.3% of the patients had PSA levels in the laboratory normal range of 0-4ng/ml. There was a 32.4% surgical rate in the care of these patients with Trans-Urethral Resection of the Prostate (TURP) accounting for 57.8% of the surgeries and 68.3% of the operations on the prostate.***
Conclusion: ***Benign Prostate Hyperplasia (BPH) is the leading clinical pathology in indigenous black African patients presenting with prostate diseases in MTRH despite high PSA levels. Majority of these patients have enlarged prostates and history of urine retention.***
Recommendations: ***The standard approaches of clinical assessment and PSA are wanting in many aspects and the Caucasian studies may not truly reflect on indigenous black Africans. It is recommended that this be borne in mind as diagnoses of the various prostate diseases are made.***

Introduction

Prostate diseases are common the world over irrespective of races with majority of men likely to develop one or the other of the three main conditions of Prostatitis, Benign Prostate Hyperplasia (BPH) and Prostate Cancer [1]. Inflammation is a common denominator in the three conditions [2-4] and potential link exists between both urinary tract infection and sexually transmitted diseases in the final occurrence of prostate cancer [5]. While evidence points to racial and geographical differences in the presentation of prostate diseases [5], much of the available data has been gathered from European and American studies and may not comprehensively address the problem among the African population [6-7]. This study shares the experience with prostate diseases in a tertiary centre dealing with African men and brings into focus the striking differences in the data when compared with the Western statistics.

Patients and Methods

Patients of indigenous Black African extraction based on birth and exclusive residence in Africa presenting to the urology clinic or admitted with lower urinary tract symptoms ascribable to

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the prostate and diagnosed to have Acute Prostatitis, Benign Prostate Hyperplasia (BPH) or Prostate Cancer had their demographic data taken after formally consenting to participate in the study. Those with urethral strictures or considered to have other non-prostatic causes of bladder outlet obstruction were excluded. Clinical assessment included standard physical examination with a focused Digital Rectal Examination (DRE). Clinical diagnosis of Prostatitis was limited to the acute form and based on findings of a tender prostate with features of an acute inflammatory process. Benign Prostate Hyperplasia was considered where the examining urologist made findings in keeping with a benign prostate enlargement with no asymmetry or nodulations and having freely mobile overlying mucosa. The Prostate Specific Antigen (PSA) levels were determined in the standard laboratory procedure using Abbott IMx assay with a 0-4ng/ml normal range within 24 hours of submission of blood in plain specimen bottles. Patients who underwent prostate surgery or had a prostate biopsy taken on suspicion of malignancy had histological confirmation of the prostate disease. Data was ethically collected using a pre-designed data sheet, entered in a spreadsheet, confirmed for completeness, cleaned and then analyzed using Scientific Program for Social Sciences (SPSS) version 17.0 with focus on the primary and secondary outcome measures. The findings were in descriptive terms and relied on measures of central tendency as well as measures of dispersion. They are presented in tables and narratives.

Results

During the one year study period, 842 new patients were attended to in the urology clinic of MTRH. A total of 262 patients were diagnosed to have one of the three prostate diseases namely Prostatitis, BPH and Prostate Cancer giving an annual incidence of 31.1%. Forty-three patients with either associated urethral strictures independent of prostatic stenosis or suspected neurogenic bladder besides prostate enlargement were excluded from the study. The 219 patients recruited into the study were 163 inpatients (74.4%) and 56 outpatients. The age range was between 50 and 96 years with a mean ± standard deviation of 65.4 ± 10.2 years. Table 1 shows the demographic features of the patients. As of the time of presentation, 68% of patients had had a history of urine retention. On digital rectal examination, 157 patients (71.7%) had palpably enlarged prostate and other abnormalities like asymmetry, immobile overlying mucosa and nodularity. Clinical diagnosis of Acute Prostatitis was made in 4, BPH in 140 and Prostate Cancer in 75 patients, giving disease prevalence of 1.8%, 63.9% and 34.3% respectively. Patient complaints and chief findings on examination are as shown in Table 2.

Table 1. Demographic Features of the Patients

Variable	Frequency	Percentage
Age in years		
50-59	63	28.8%
60-69	49	22.4%
70-79	65	29.7%
Above 79	42	19.1%
Marital status		
Married	172	78.5%
Single	9	4.1%
Divorced	3	1.4%
Widowed	35	16.0%
Recruitment areas		
Inpatient	163	74.4%
Outpatient	56	25.6%

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Table 2. Clinical Features of the 219 Patients at Presentation

Variable	Number	Percentage
Urine retention	149	68.0%
Weak flow of urine	149	68.0%
Incomplete voiding	147	67.1%
Frequent urination at night	109	49.8%
Burning sensation during urination	71	32.4%
Nature of the prostate		
Abnormal	157	71.7%
Normal	62	28.3%
Suspicion on DRE		
BPH	140	63.9%
Ca prostate	75	34.3%
Prostatitis	4	1.8%

Table 3. Distribution of PSA Levels among Prostate Diseases

Disease	PSA≤4ng/ml	PSA>4ng/ml	Total
Ca Prostate	14(18.7%)	61(81.3%)	75
BPH	46(32.9%)	94(67.1%)	140
Prostatitis	2(50%)	2(50%)	4
Total	**62(41.6%)**	**157(58.4%)**	**219**

The 219 study subjects had a mean PSA level of 31.2ng/ml and only 62 patients (28.3%) had PSA within the laboratory reference of normal range 0-4ng/ml with an average of 1.8 ng/ml. Those with elevated PSA levels had a mean of 42.3ng/ml. Table 3 shows the distribution of the PSA levels among the three conditions. Twenty-four patients (18.6%) had associated genitourinary problems: 12 orchitis and 12 hydroceles. Surgical interventions were instituted on 71 patients, giving a 32.4% surgical rate in the care of these patients. Trans-Urethral Resection of the Prostate (TURP) accounted for 57.8% of the surgeries and 68.3% of the operations on the prostate. Orchidectomy was done on 11 patients during the study period.

Fifty-four patients had prostate biopsy submitted for histology. Forty of them (74.1%) were found to be malignant and 38 of these had been correctly diagnosed as such. The other 35 patients clinically diagnosed of Prostate Cancer were on the basis of DRE and were all having PSA in excess of 100 ng/ml. Two patients with PSA levels within the 0-4ng/ml normal range had histological finding of malignancy.

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Discussion

Prostate diseases are so common in urological practice that one's age after 60 years could easily be the percentage of those affected in that age group [1]. While mechanisms leading to each of the pathologies have been extensively elucidated, there seem to exist racial and geographical differences on how the diseases present [6-7] and as such an attempt at establishing characteristics typical of our African patients goes a long way in filling the void created by over reliance on data generated elsewhere.

The age of our patients compares well with that of the rest in the world but that seems to be end of the similarities. While less than 10% present with urinary retention elsewhere [8], this study had a urinary retention rate of 68%. The attendant complications including urinary tract infections and pressure effects on the urinary tract could explain the co morbidities noted like hydroceles and orchitis. Urine reflux into the prostate under pressure voiding has been postulated to be one of the noninfectious causes of chronic prostatic inflammation that may reflect on any of the prostate diseases [2]. The close to 72% rate of abnormal findings on DRE may suggest the consistent finding of delayed presentation of our patients. Rufus and colleagues in Nigeria found an abnormal DRE to be an independent predictor of high grade prostate tumour [9]. Their malignancy detection rate of 43.2% compared to our 34.3% may, however, suggest even a greater delay in their setting.

While studies have shown the great benefits of combining DRE and Prostate Specific Antigen (PSA) levels in the evaluation of the patient with prostate disease [10], it is also emerging that the man over 50 years may require further evaluation beyond these two diagnostic processes since some studies have shown up to 40% of histologically identified cancer of prostate in patients with normal DRE and PSA findings [11]. Young and Young found that only the highly elevated PSA was clearly indicative of malignancy [8] and only levels in excess of 100ng/ml could give 100% predictive value. This could explain in part why PSA figures may not be exclusively categorical for any of the prostate diseases as noted in this study. It seems to be even a greater challenge in this unexplored African peculiarity of generally high levels of PSA and a small number that may even have malignancy in the normal range reflected by the two patients in our study.

Our interventions seem to reflect the global trend towards non surgical management of prostate diseases while at the same time encompassing the wide range from medical therapy to palliative orchidectomy for advanced prostate cancer. Our TURP rate of 68.3% compares favourably with local and international counterparts [11].

Conclusion

Benign Prostate Hyperplasia (BPH) is the leading clinical pathology in indigenous black African patients presenting in MTRH with prostate diseases despite high PSA levels. Majority of these patients have enlarged prostates and history of urine retention.

Recommendations

The standard approaches of clinical assessment and PSA are wanting in many aspects and the Caucasian studies may not truly reflect on indigenous black Africans. It is recommended that this be borne in mind as diagnoses of the various prostate diseases are made.

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