

Awareness of Prostate Cancer and the Use of PSA as A Screening Test among the Black Race: South - South and South-East Nigeria, Nigerian Experience

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Abstract:

Background: Prostate cancer is the number one cancer in men with increasing incidence, morbidity and mortality in men of black ancestry. Early detection and appropriate treatment of majority of solid tumours including cancer of the Prostate, (CAP), usually lead to a reduction in cancer-related mortality and morbidity. Such goals can only be attained when patients are aware of the disease, present early and are willing to be treated when diagnosed. Most of our patients present late and so are hardly good candidates for 'curative' treatment options if detected; hence the need to know why the late presentation and opinion on treatment of asymptomatic early stage cancer of the prostate in the developing world.

Aims and objectives: To determine the awareness of cancer of the prostate, the use of Prostate Specific Antigen, (PSA), as a screening test for cancer of the prostate. It is also to determine the willingness of candidates to be treated when asymptomatic cancer of the prostate is detected.

Subjects and methods: Males in Southern Nigeria were invited to complete a self-administered questionnaire structured to test the awareness of cancer of the prostate (CAP), and also the use of PSA as a screening test. They were also to indicate their willingness to be treated or not in the event of detection the disease when asymptomatic. The extracted data were set in Microsoft® Office Excel 2007 spread sheet, imported into and analyzed using IBM SPSS version 21

Result: A total of 44, 564 of 72,000 questionnaires distributed were completed and returned. Their mean age was 45.1 years. Overall, 30660 (68.8%) of the respondents were aware of the existence of CAP. Only 1429 (3.2%) indicated their willingness to be treated in the event of being diagnosed with asymptomatic CAP; an overwhelming percentage of 39,162 (87.7%) would prefer not to be treated if diagnosed with asymptomatic prostate cancer; while the rest 4153 (9.3%) had no opinion.

Conclusion: Most Nigerian men are aware of cancer of the prostate. They are also aware of the use of PSA as a screening test but would prefer not to be treated if diagnosed with asymptomatic prostate cancer. Prostate screening is unlikely to reduce prostate cancer morbidity and mortality in Nigeria.

Summary: We looked at the awareness of black race (Nigerian males) of cancer of the prostate, the use of PSA as a screening test and willingness to be treated if diagnosed with asymptomatic cancer. Nigerian men are aware but unwilling to be treated if diagnosed with asymptomatic cancer of the prostate

Keywords: CAP, PSA-screening, treatment willingness.

I. Introduction

Prostate cancer is the number one cancer in men with increasing incidence, morbidity and mortality in men of black ancestry. Early detection and appropriate treatment of majority of solid tumours including cancer of the Prostate, (CAP), usually lead to a reduction in cancer-related mortality and morbidity. It is the second most common cancer related death worldwide^{1,2}. The incidence of the pre-clinical disease detected post-mortem appears to be similar across races, but the incidence of the clinical disease varies significantly across races. The incidence is lowest in Asia (4.7 per 100,000 person-years), higher in native Africa (16.0 per 100,000 person-years) and highest in North America (119.9 per 100,000 person-years)³, especially among men of African descent (220 per 100,000 population)⁴. The disease has also been noted to be more aggressive in blacks possibly due to late presentation of patients, or development of a biologically more aggressive tumour^{5,6}.

Logically, it would be expected that early detection and appropriate treatment of cancer of the prostate should lead to a reduction in cancer related morbidity and mortality as seen in other tumours such as testicular cancer, breast cancer, and cervical cancer.

Reported cases and works at various centers all over the world (including highly rated research centers in Europe and United States of America) are positive that early detection and appropriate treatments portends 'cure' for early stage cancers; and does decrease mortality.

In most developing countries and low income regions, especially in sub-Saharan Africa, there is no national cancer database or active screening program⁷. In Nigeria the condition is not different as there is no national cancer register. This makes it difficult to assess the true burden of CAP.

However, various studies at some centers scattered in Nigeria emphasize the prevalence of the disease^{5, 8,9,10}. Most cases are diagnosed late¹¹, and such patients are unlikely to receive 'curative' therapy; and usually the commonest mode of therapy is androgen deprivation^{4, 5, 6,7,12}.

Prostate Specific Antigen (PSA) screening for CAP has been widely used since its approval by the United States Food and Drug Administration in 1964¹⁴. The role of PSA as a screening test is not controversial but it is good to recall that the United States Preventive Service Task Force (USPSTF) in 2012 published that its use as a screening test tends to over diagnoses of CAP. The task force claimed that Prostate Specific Antigen testing increases cancer detection but does not decrease mortality¹⁵. The Taskforce (USPSTF) in the same year 2012 recommended against screening for prostate using the PSA testing, due to the risk of over diagnosis and over treatment with most prostate cancer remaining asymptomatic. The USPSTF went ahead to conclude that the potential benefit of testing does not outweigh the expected harms⁶.

USPSTF confirmed that use of PSA as a screening test is reliable in detecting cancer of the prostate at early stages. The role of PSA as a screening test for CAP is therefore not controversial. It is the benefit of instituting treatment when diagnosed but asymptomatic that is the issue.

However reproducible researches, reports and works abound of the benefits of early detection and appropriate intervention. Appropriate treatment of early stage cancers including cancer of the prostate reduces morbidity and mortality.

Screening is however not readily available to the majority of the populace in poverty-stricken and the developing countries hence many of the people may not have heard about screening test and so could not have been screened in the past years.

The aims of this study are to assess the awareness of the disease entity, CAP and the use of PSA as a screening test among the black race (Nigerian males) of the South-South and South-East geopolitical zones of Nigeria. It also aims at assessing the willingness to be screened and treated if recommended in the event of diagnosis of asymptomatic cancer of the Prostate (CAP).

Subjects and methods: Christian males, in the South-South and South-East geopolitical zones of Nigeria were enlisted into the study after obtaining general and individual informed consents. South-South and South-East Nigeria occupy the area located between 6° 27' and 9° 60' N with a population of about 30 million people and a Density of about 1000/400 km².

The choice of Christian males was a matter of convenience as it was easy to reach them in large numbers during, or after services. More so the Christians constitute over 87% of the population; the rest of them are traditional religion worshiper, pagans and very few Muslims. The Christians also represent all strata of social classes (life) and so could be used as representing the generality of the male population of the zones who are mainly peasant farmers, traders, artisans and civil servants.

The inclusion criteria were males 30years old and above, ability to read and write in English Language. All males who have been diagnosed of overt diseases of the prostate were not enrolled into the study.

Letters introducing the aims and objectives as well asking for permission were dispatched to administrators of churches to be visited some weeks ahead of the visits seeking for permission to use their churches and church members for the study. The churches were randomly selected, the three main denominations: - Roman Catholic Church (RCM); the Anglican Communion of Nigeria and the Pentecostal Church – located in each of the state capitals of the geopolitical zones.

The leader of the investigating team takes time to explain to the audience the detailed contents of the questionnaire. The use of interpreters was employed when necessary. Each group of investigator was made up of one consultant urologist, two senior residents and at least five junior resident doctors who helped in distribution, collection and collation of the questionnaires.

The study consists of a self administered questionnaire testing 10 key areas of knowledge of cancer of the prostate and the use of the PSA as a screening test.

The ten major area of concentration of the questionnaire apart from optional Bio-data of the respondents were as follows:-

1. Have you heard of the disease entity called Cancer of the Prostate (CAP)? (a) =Yes (b) = No
2. Which of the under listed is (are) symptoms of CAP? (Tick many as you think is correct)[See Table1]
3. Which of the under listed do you consider a risk factor? (Tick many as you think is correct)[See Table2]

4. Are you aware that PSA test can be used to screen for Cancer of the prostate? (a) =Yes (b) = No
 5. Will you want to be screened if recommended by a doctor? (a) =Yes (b) = No
 6. How did you get to know about CAP and PSA screening test? (See table 3)
 7. Will you want to be treated if you are diagnosed of asymptomatic CAP? (a) =Yes (b) = No
 8. If your answer to question 7 is yes, what type of treatment would you accept? Choose any of the options below:
 - (a) Surgical (radical prostatectomy)
 - (b). Take Medicine if available
- ©. No treatment at all.

The extracted data were set in Microsoft® Office Excel 2007 spread sheet, imported into and analyzed using IBM SPSS version 21

II. Results

A total of 44564 men out of 7200 questionnaires were distributed, completed and returned. The mean age of the respondents was 45.1 years (range from 31 – 80 years). Most of the men, 30660 (68.8%) were in the age group 41 – 50years (Fig. I). The overall awareness score was 26159 (58.7%) (See Table I). The results of knowledge of symptoms are shown in the descending order, (See Table11).

Nocturia was identified as the most presenting symptoms by twenty one thousand one hundred and thirty four (21 134) constituting 47.7% of the respondents.

Difficulty in passing urine came second as identified by the respondents as the most common presenting symptom by 20187 (45.3%) of respondents. Other symptoms include, Haematuria, Frequency, Low back pain, Pyuria, and Urine retention identified by 15036 (37.7%), 10561 ((23.7%), and 5348 (12.0%) and 2005 (4.5%) respectively, whereas only 134 (0.3%) did not know of any symptoms; they were completely ignorant of any symptoms that could be associate with cancer of the prostate.

Risk factors for CAP identified by the respondents were Age, Presence of intact normal testes, Diet, and Family history – 12567 (28.2%), 11096 (24.9%), 5615 (12.6%), and 9448 (21.2%) respectively. The sources of information on CAP and PSA as a screening test identified by the respondents are shown in Table.....

III. Discussion

Cancer of the prostate (CAP) is one of the most commonly diagnosed mitotic lesions among men. It is a malignancy that usually affects the aging group of men. Its peak incidence is in the sixth to seventh decades of life^{1, 4, 14}. The disease has a very profound and unimaginable emotional and functional effect on patients, patients' relatives and the health caregivers generally. It also imposes a large financial burden on the economy of the individual, relations and the nation at large.

The incidence of CAP in Nigeria (127/100.000) is comparable to that in African American men, with an annual death rate of about 20.000¹⁵. With the increasing life expectancy in Nigeria, more men will be diagnosed with CAP¹⁰.

Data on cancer morbidity and mortality in Nigeria are unavailable due to the absence of a national cancer registry. However, a review of cancer morbidity in adults from Ibadan, Southwest Nigeria, and Nnewi Southeast Nigeria etc. showed that CAP was the most common cancer in males^{2, 7, 11,13, 14, 16}

In this study, there was a high level of knowledge 30660 (68.8%) of CAP among Nigerian males of South-East and South-South geopolitical zones of Nigeria. This is not as high as the Ibadan study probably due to the small number and category of the people involved in the Ibadan study. This may be attributed to low education levels among the Southeast and South- south zones as a result of the Nigerian civil (Nigeria / Biafra) war; majority of them were affected by the civil war about 40 years ago or poor access to information among these men. There was not even one person that heard the information from the church. It may be stated that the churches are not good media for disseminating information on health issues that affect men. Since many people attend churches the proprietors and administrators of churches ought to be properly informed and encouraged to enlighten her adherents.

The populations involved in this study represent various educational strata as it involved few well educated, less educated and illiterate peasant farmers alike. There are conflicting reports concerning public awareness of CAP in different parts of Nigeria^{12, 13}. The reported differences can be explained by differences in the population groups studied.

This study cohort of mixed levels of educated Nigerian males made up of unemployed, self employed and full-time civil servants represents a small fraction of the population, who are largely uneducated. One may reasonably expect that this study may give a better appreciation of health matters in this group of men within the general population. Due to its selection bias, this study may not reflect general population trends and attitudes because of the exclusion of effects of beliefs and religious bias on health issues, such as other faithful- Muslims, Traditional Worshipers, and Pagans, etc. There is therefore a very important need to study the general

population, irrespective of creed, although the study subjects may not be able to complete the questionnaire without assistance. A more comprehensive future study may involve recruitment of Muslims, Pagans, idol worshippers, etc in addition to the Christians population.

Whereas 56.8% of the respondents had knowledge of PSA screening for CAP, only 6.4% had undergone PSA screening in the preceding year, although 90% were willing to undergo PSA testing if recommended. This may be related to the credibility of health promotion campaigns or the fear of being diagnosed with cancer. In Nigeria, there is no national policy on CAP screening, and most public health information is not directed at early detection and treatment. The low screening rate in this study population will invariably translate into a lower rate of early detection of CAP.

PSA screening definitely leads to stage migration with increased diagnosis of early stage, potentially curable CAP¹⁷. However, the population benefit of PSA screening for CAP among the black race (Nigerians) remains a mirage as majority of the respondents are unwilling to be treated. They would prefer not to be treated if diagnosed with asymptomatic prostate cancer.¹⁸, although multinational studies have reported decreasing CAP mortality rates in countries with more widespread screening policies¹⁹.

IV. Conclusion

There is a high awareness of CAP and PSA screening among Nigerian males in the two geopolitical zones made up of mainly Igbos and minor ethnic groups of the Niger delta States of Nigeria. Given the current situation Prostate screening is unlikely to reduce Prostate Cancer mortality in Nigeria. Most Nigerian men are aware of cancer of the prostate. They are also aware of the use of PSA as a screening test but would prefer not to be treated if diagnosed with asymptomatic prostate cancer. Prostate screening is unlikely to reduce prostate cancer morbidity and mortality in Nigeria.

However to achieve stage migration in CAP detection in Nigeria, early detection using PSA screening should be actively driven by health personnel using the media, and should be backed up with an effective national health policy on CAP screening.

It is also important to educate the men on the advantages of PSA screening and treatment of early stage cancer of the prostate even when asymptomatic. The age long use of town criers, churches, markets and village squares ought to be resuscitated. This will in no small measures improve the awareness among the majority of the illiterate that inhabitants of this area. As the population tends towards Christianization, church leaders and pastors should recruited in the campaign to reduce the mortality and morbidity arising from cancer of the prostate.

Disclosure: We the authors declare that we have no conflict of interest.

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