

PROSTATE SPECIFIC ANTIGEN AS A SCREENING TOOL IN SOUTH EAST NIGERIA: AN ASSESSMENT OF COMPLIANCE LEVEL AMONG HEALTH PROFESSIONALS.

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Abstract

Introduction: Prostate cancer is the leading cancer in older men and early detection has been advocated as this affords patients a potential cure by radical prostatectomy. Prostate specific antigen (PSA) is widely used as a screening tool to categorize patients who may be at risk of prostate cancer and it is considered as the most promising tumor markers available. However, the utility of PSA is not limited to prostate cancer detection; it can also be applied to benign conditions of the prostate.

Objective: To assess the compliance rate of male doctors ≥ 40 years toward prostate cancer screening

Method: Questionnaires were distributed to eighty (80) male medical doctors in Aba, Abia State, Nigeria using a convenient sampling method. The data were analyzed for demography, knowledge and attitude toward PSA screening using Pearson chi-square. A PSA knowledge score was generated using three different parameters gotten from the questionnaire and subjects were classified into very good, good and poor based on their responses.

Results: Most (77.4%) of the respondents were middle aged men with a mean age of 54.17+8.6 years. Majority (77.8%) of the respondents had a very good knowledge (n=48) of the utility of PSA as a screening tool for early diagnosis of prostate disease. However, the respondents attitude and practice toward PSA screening were poor in that majority (77.1%) has never had a previous PSA done. This is significant (p<0.001)

Conclusion: There is a poor attitude and practice toward PSA screening among the knowledgeable.

Key words: PSA, screening, attitude

Introduction

Prostate cancer is the leading cause of cancer among males and a major cause of

death among males¹. In the United States, the incidence of prostate cancer is 156.7 per 100,000 in white Americans and 248.5 per

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100,000 for black Americans². Prostate cancer has been described to be more prevalent among African-Americans. The prevalence of 127 per 100,000 was reported in Lagos and prostate cancer accounted for 182.5 per 100,000 of male admission in south-west Nigeria^{3,4}. This high prevalence rate necessitated a guideline adopted by developed countries toward screening the male folks for prostate cancer. The protocol specifies that asymptomatic males of 40 years and above should go for prostate cancer screening once a year if the initial result was normal⁵.

There are two methods widely accepted for screening prostate cancer which include the digital rectal examination (DRE) and the prostate specific antigen (PSA) with sensitivities of 53.2% and 72.1% respectively⁶. The sensitivity improves when the DRE and PSA are used in combination to about 87.2%⁷. Prostate cancer screening has resulted in early detection of prostate cancer and many developed countries use a combination of DRE and PSA for prostate cancer screening in asymptomatic men.

The criteria for an effective screening program are that the condition in question is serious, screening tests can accurately detect early stage disease, early detection can lead to improved outcomes and the benefits outweigh the harms. Therefore, prostate cancer screening is directed toward reducing the morbidity and mortality from prostate cancer. Prostate cancer screening may reduce the mortality from the disease almost by half but with a substantial risk of over diagnosis⁸.

Despite the fact that prostate cancer is the most commonly diagnosed cancer among Nigerian men, prostate cancer screening is not a common practice¹. There is a poor awareness of prostate cancer especially among the illiterates and rural dwellers^{9,10}. This may be the reason why many patients present in advanced disease.

The focus of this study is on the compliance rate of male doctors towards prostate cancer screening. Doctors are learned citizens and they are well abreast with the PSA screening guidelines in developed countries, it is expected that the male doctors will embrace the attitude of self-health promotion towards the prevention of prostate CA by prostate cancer screening.

Methods: This is a descriptive study carried out among male doctors working in Aba, Abia State, Nigeria. There are about 300 practicing doctors (constituting both the young and the old) in Aba, Abia State. However, the respondents were forty years and above. Aba has a Teaching hospital, a cottage hospital, two mission hospitals and many private hospitals.

The research was carried out during the zonal meeting of Nigerian Medical Association (NMA) Aba zone together with official clinic consultation. A convenient sampling method was used and only those who gave their consent were included in this study. The population for this study were male doctors who were 40years and above. Pretested self-administered questionnaires were distributed to consenting male members to fill and return to the researcher. The questionnaire was designed to ask questions testing the knowledge, attitude and practice of these doctors to PSA screening. There were three (3) knowledge indicators used to evaluate the respondents which include PSA screening could suggest disease of prostate in men even before symptoms, an annual PSA check of PSA is recommended for men above 40years and PSA alone can be adequate for diagnosis of prostate disease. The respondents' knowledge was scored on ten (10), three for the first two indicators and four for the last indicator. Respondents who scored between three (3) and 5 were considered to have poor knowledge, scores between 6 and 8 had good knowledge while scores between 9 and 10 were said to have very good knowledge

Data were analyzed by SPSS 20 and variables were compared using Chi square. The statistical significance was taken as $p < 0.05$. Results are presented using tables.

Results

The respondents recruited for this study had a mean age of 54.1 ± 8.7 years. Table 1 Majority (77.4%) of the respondents were less than 60 years of age. They were all married. There was no association between medical history and previous PSA screening. Table 3.

More than two-third (77.8%) of the respondents showed a very good knowledge for the utility of PSA as a screening tool for early detection of prostate disease especially prostate cancer. Ninety-eight percent (98.4%) of the respondents agreed to the knowledge of annual screening of PSA for men above forty years of age, only 1 (1.6%) of the subjects disagreed. Table 3

The subjects also had a good knowledge of the limitation of PSA as a screening tool when used alone. This is

evidenced by the response pattern of the respondents in that majority (79.1%) did not agree with the statement that PSA screening is adequate for diagnosis of prostate disease. However, 17.7% of respondents agreed with the adequacy of only PSA for the diagnosis of prostate disease. Table 3.

Almost all (98.8%) the subjects agreed to the sensitivity of PSA as a screening tool for diagnosing prostatic disease.

The PSA knowledge score generated based on the subjects’ responses to the clinical utility of PSA showed that almost all (77.8%) the subjects scored very good while (22.2%) scored good. However, despite a very good knowledge of PSA screening, only 35.5% (22) had a previous PSA done while the majority (64.5%) has never had a previous PSA done. Among those without a previous PSA, almost all (92.5%) of them had no reason for not going for voluntary PSA screening, while 5% gave lack of symptoms as reasons. Table 3.

Table 1: Mean Age of Respondents.

	N	Mean	Std. Deviation
AGE (years)	62	54.1774	8.66030

Table 2: Association between medical history and ever done PSA

EVER DONE PSA	Yes	No	X ²	p-value
Hypertension				
Yes	9(14.5)	10(16.13)	1.24	0.76
No	14(22.6)	29(47.7)		
Diabetes				
Yes	9(14.5)	8(12.9)	2.52	0.11
No	14(22.6)	31(50)		
Alcohol				
Yes	10(16.13)	11(17.7)	1.80	0.40
No	13(20.9)	26(41.9)		
Smoking				
Yes	9(14.5)	9(14.5)	1.81	0.18
No	14(22.6)	30(32.6)		

*The table showed no association between medical history and ever done PSA

Table 3: Knowledge and practice of PSA screening

Parameters	Frequency(n)	Percentage (%)
PSA Screening could suggest disease of prostate in men even before symptoms		
Yes	60	88.8
No	2	3.2
An annual check of PSA is recommended for men above 40yrs?		
Yes	61	98.4
No	1	1.6
PSA alone can be adequate for the diagnosis of prostate disease		
Yes	11	17.7
No	50	79.1
No response	1	3.2
Practice		
Ever done PSA		
Yes	22	35.5
No	40	64.5
If No, what is your reasons?		
No reason	37	92.5
No symptoms	2	5
Not necessary	1	2.5

Table 4: PSA Knowledge Score

	FREQUENCY (n)	PERCENT (%)
VERY GOOD	48	77.8
GOOD	14	22.2
POOR	0	0
TOTAL	62	100

Discussion

The subjects for this study were male doctors practicing in Aba with the mean of the population being the middle-aged men. This suggests that, they must have spent a reasonable number of years practicing medicine and surgery. Therefore, it is expected that they will be well abreast with standards, protocols and guidelines. Also, they will most benefit from early management if PSA result is elevated.

This study found out that the male doctors in Aba have a good knowledge of PSA as a screening tool and that they are aware of both the utilities and limitations of the tool. A low level of awareness of prostate cancer and its screening were reported in the general population despite the high educational level of the study population in a study done in Lagos¹¹. This disparity may be a reflection of the effect of the profession of the subjects recruited for this study and probably the duration of practice.

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The subjects demonstrated a good knowledge of the limitations of PSA screening different from a report from a study done in Canada where almost all their subjects were unaware of the risks associated with PSA screening¹². This finding is most likely due to the profession of the subjects recruited for this study. The risks associated with routine PSA screening for prostate cancer are well known and include causing undue anxiety, a high incidence of false positives, negative side effects of resulting biopsies and treatment, and the discovery and treatment of clinically insignificant disease (disease that would not otherwise cause any morbidity or mortality). It was also observed that some of the respondents are still not aware of the limitations of PSA especially when used alone to screen for prostate disease. This suggests a need for continuous medical education and appraisal of existing knowledge. This will help in updating medical practitioners.

Despite a good knowledge of PSA as a screening tool, the attitude and practice of the subjects to voluntary screening were poor. Just few of the subjects had a previous PSA screening while majority has never had a single PSA screening before. This report is different from a study conducted among male doctors in U.S where majority of the primary care doctors older than 50 years had themselves undergone PSA testing¹³. From a previous study, more than 50% of men above 65years had previously done PSA^{12,14}. In a 2002 Canadian survey of men older than 40 years, 43% of subjects were reported to have had a PSA test¹⁵. In another study done in Brazil, 54.3% of their subjects had a previous PSA despite their low socio-economic class¹⁶.

These practice and attitude observed among the subjects will generate a lot of questions as to what the reasons may be. One will expect a positive attitude from this group of professionals who have displayed a

very good knowledge of the importance of PSA as a screening tool but the opposite is the case. A readily identified reason for the poor practice of the subjects will probably be the high knowledge of the risks associated with PSA screening. An earlier study had reported that more men engage in voluntary PSA screening because they were unaware of the potential risks involved and that they perceive PSA testing to be a risk-free enterprise¹². The belief pattern of an individual could modify the attitude and practice of such individual to some obvious facts. The subjects recruited for this study might have a negative perception of PSA screening probably due to the attending risks. Reports from a study done in the U.S among similar subjects revealed how physicians' belief influenced voluntary PSA screening¹³. It was suggested that physicians believe that the potential harms of PSA testing do not out-weight the potential benefits and that screening is beneficial. They appreciated the psychological reassurance of a negative PSA result^{17,18,19}.

In this part of the world, some other reasons such as availability of time or of the test facility, ease of access to the PSA test and cost of investigation when available could be a hindering factor. It is a general opinion that doctors have a poor attitude towards health promotion, this may simply be the factors underlining the pattern of attitude displayed by these subjects. It therefore suggests a need for reorientation of medical practitioners.

Life style modification and health promotion are fundamental to prevention of diseases. Therefore, annual PSA screening of men 40 years and above is recommended for early detection and prevention of prostate cancer especially when there is a positive family history. Adopting this healthy lifestyle will go a long way in reducing the burden of prostate cancer in men. It is also expected that if many male doctors will adopt this health promotion,

they would be a crusader of same and rub off on the vast community.

Conclusion:

This study showed good knowledge but poor compliance towards PSA screening amongst the knowledgeable who are supposed to pilot healthy practices.

Recommendation

There is a need for widespread campaign on the prevalence of prostate cancer in this environment as well as sensitization of the larger society on the benefits of PSA screening. Medical practitioners as well as the allied health workers should be updated on PSA screening and a national guideline for PSA screening will go a long way in recognizing people who may benefit from early detection of prostate cancer.

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