

The Relevance of Prostate Specific Antigen as an Efficient Marker of Prostate Cancer Diagnosis

Nnodim Johnkennedy¹, Bako Hauwa²

¹Department of Medical Laboratory Science, Faculty of Health Science, Imo State University, Owerri. ²Department of Medical Laboratory Science, College of Medical Sciences Ahmadu Bello University, Zaria Kaduna State Nigeria

INTRODUCTION

Prostate specific antigen (PSA) is protein produced by the prostate gland. It may be produced by normal and malignant cells of the prostate gland. The PSA test measures the level of PSA in an adult males' blood[1].

The increased level of PSA may be an indication of prostate cancer. The level of PSA is commonly increased in adult male with prostate cancer. PSA levels within the range of 0 and 4 ng/mL (nanograms per milliliter) are regarded as normal while PSA concentrations between 4 and 10 ng/mL (nanograms per milliliter) are regarded to be suspicious and consideration should be given to confirming the abnormal PSA with a repeat test[2].

Specifically, it has been reported that PSA level of 0 to 2.5 ng/mL is safe, 2.6 to 4 ng/mL is safe for most adult males while 4 to 10 ng/mL is suspicious which may indicate 25% chance of having prostate cancer. Similarly, the PSA level of 10 ng/mL and above is dangerous. This probably indicate that there's a 50% chance of having prostate cancer[3].

The PSA test is done by enzyme link absorbent assay. The increased level of PSA levels may indicate prostate cancer or a different condition like prostatitis or an enlarged prostate[4]

As regards PSA level, it can be affected by age and drugs. PSA tends to normally go up slowly as one gets older, even when they have no prostate disorder. In the same vein, some drugs like avodart, may affect blood PSA levels. These drugs may falsely lower PSA levels by half of what they should be[5].

Prostate specific antigen takes two major forms in the blood. One is attached to blood proteins. The other moves around freely. The percent-free PSA test reveals how much PSA moves freely compared to the total PSA level. The amount of free PSA is lower in adult males with prostate cancer. If the PSA results are in the borderline range (4 to 10), a low percent-free PSA (less than 10%) means there's about a 50% chance of having prostate cancer[6].

Also it is necessary to note that the measure of the change in the PSA levels over time can have direct relationship to developing cancer. This is called PSA velocity. Even when the total PSA value isn't higher than 4, a high PSA velocity (a rise of more than 0.75 ng/mL in 1 year) indicates that prostate cancer is imminent[7].

Actually the prostate-specific antigen (PSA) test is a blood test useful for detecting prostate cancer, monitoring its treatment, or evaluating its recurrence. It can also be abnormal with benign enlargement, inflammation or infection of the prostate

Address for Correspondence:

Nnodim Johnkennedy, Department of Medical Laboratory Science, Faculty of Health Science, Imo State University, Owerri, Nigeria.

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glandurinary tract infection, following catheterization and digital rectal examination[7].

The prostate cancer and its treatment may have a significant impact on adult male's health. Hence, proper screening tools to detect clinically significant prostate cancer are needed[8].

The 4K biomarker is a blood test that measures four different proteins in the blood to evaluate prostate cancer risk. The blood test that determines these biomarkers is called the 4KScore Test. It suggests the possible risk that a significant prostate cancer would be found[7].

The 4KScore Test relies on the measurement of four prostate-specific kallikreins in the blood: Total PSA, Free PSA, Intact PSA, and Human Kallikrein 2 (hK2)[8].

Hence, Prostate specific antigen is highly relevant in the diagnosis of prostate cancer.

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