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Evaluation of Serum Prostate Specific Antigen as a Biomarker for Breast Carcinoma

Rochelle Felicidade Antao, Lancelot Lobo, Nawin Kumar, Abhijit Sudhakar Shetty,
Praveen Mahantesh Pawar, Shruti Mujumdar
Department of General Surgery, K.S.Hegde Medical Academy,
Nitte (Deemed to be University), Deralakatte, Mangaluru, India

ABSTRACT

Objective: Prostate-specific antigen (PSA) is a very important tumor marker for prostate cancer. The PSA was thought to be produced exclusively by the epithelial cells of the prostate gland, but a large body of evidence suggests that PSA is not a prostate-specific molecule and has been shown to be present in many forms of female tissues. The aim of the study is to evaluate serum PSA levels as a biomarker for breast carcinoma.

Methods: This was a prospective study where patients presenting with breast lump with a trucut/ FNAC report suggestive of benign or malignant lesion were taken as the case group and all patients undergoing an ultrasound to rule out any ovarian/endometrial pathology were taken as the control group at Justice K S Hegde Charitable Hospital, Mangalore. A total of 150 patients, were taken for this study. Blood sample was taken from the subject and PSA testing was performed using immunoassay methods.

Results: The average PSA value from each group was calculated and an increase in the average serum PSA was noted among the malignant subjects. The Kruskal value analysis was performed and a p-value of 0.046 was obtained, showing that there is a difference in median PSA levels among the groups. Multiple comparison of PSA by using Mann Whitney U test showed that there was a difference in median prostate specific antigen level between the groups ($p< 0.05$). The group 3 (malignant subjects) showed increased serum PSA levels as compared to the normal and benign subjects.

Conclusion: The current study demonstrated increased serum PSA levels among the malignant cases as compared to the benign cases and control group. Therefore, serum PSA level may serve in differentiating benign and malignant breast carcinoma.

Key words: Tumor, prostate specific antigen, breast, benign lesion, malignant