Section: General Surgery

Original Research Article

A STUDY ON ROLE OF PROSTATE SPECIFIC ANTIGEN IN CARCINOMA BREAST

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Abstract

Background: To compare the level of serum prostate specific antigens in patients with carcinoma of breast with normal standardized level and to compare the preoperative and postoperative serum PSA level in patients with carcinoma breast. **Materials and Methods:** This is a prospective randomized control study with inclusion criteria of 50 patients presenting with lump in the breast which proven to be carcinoma through tissue diagnosis and exclusion criteria of patients with lump over breast which proven to be benign through tissue diagnosis and patients with associated ovarian and uterine pathology. This study was conducted in the Department of General Surgery, Dhanalakshmi Srinivasan Medical College & Hospital, and Perambalur for a period of eighteen months. **Result:** Total Number patients enrolled in the study – 50. After statistical analysis, the conclusion made that, there is no significant correlation between serum PSA level and carcinoma breast, The Mean serum PSA level in patients with carcinoma breast was found very low when compared to expected level. The mean serum PSA level between pre-neoadjuvant and post-neoadjuvant has no significant differences, the mean serum PSA level between pre- surgical and post-surgical period has no significant differences. Factors that affect the transport of PSA from tissue to blood may also be considered at this point and also the tumor behavior of the westerner and Asians may be considered for its significant change of PSA. **Conclusion:** There is no significant correlation between serum PSA level and carcinoma breast and no significant difference between Pre surgical and post-surgical serum PSA level in patients with carcinoma breast.

INTRODUCTION

Prostate specific antigen is unique for prostate epithelium numerous studies have demonstrated that female tissue such as breast, endometrium, and ovary are also produce PSA which is similar to prostate since their differentiation and growth are under the control of steroid hormones and PSA is found to be secreted in breast milk of lactating mother and nipple aspirate. Mammary PSA having identical molecular weight and m RNA sequences of seminal PSA. PSA gene expression in breast malignancy found to be under hormonal control since steroid hormone receptor positive breast tumor cell lines T-47D and BT-474 are stimulated by glucocorticoids, mineralocorticoids, progestin's and androgens, hence some amount PSA always will be Present in female serum in the range of 0.1-0.9 ng/lit. The aim of this study is to analyze the level of serum PSA level in patients with Carcinoma breast and to know its correlation with carcinoma breast.[1-5]

Aims & Objectives

To compare the level of serum prostate specific antigen in patients with carcinoma breast with normal standardized level and to compare the preoperative and postoperative serum PSA level in patients with carcinoma breast.

MATERIALS AND METHODS

Patients presenting with clinical features of lump in the breast, admitted as in-patient in Department of General Surgery, Dhanalakshmi Srinivasan Medical college from January 2022 to June 2023 will be enrolled in our Prospective randomized control study.

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Inclusion Criteria: 50 patients presenting with lump in the breast which proven to be carcinoma through tissue diagnosis.

Exclusion Criteria: Patients with lump over breast which proven to be benign through tissue diagnosis and patients with associated ovarian and uterine pathology.

RESULTS

This study was conducted in the Department of General Surgery, Dhanalakshmi Srinivasan Medical College & Hospital, Perambalur for a period of eighteen months. Patients, who fulfilled the inclusion criteria, were enrolled in this study, after obtaining an informed consent. Total Number patients enrolled in the study – 50.

Statistical Analysis: Group Statistic.

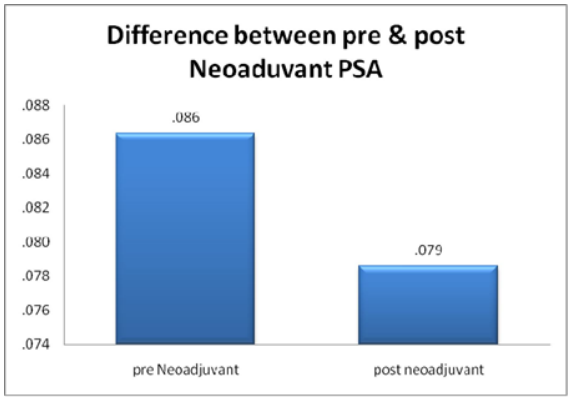

Figure 1: graphical description of mean differences

Table 1: T-Test Group Statistics

PN		N	Mean	Std. Deviation	Std. Error Mean
DIFF	Pre-Neoadjuvan t	22	.086	.0560	.0119
	Post-neoadjvant	28	.079	.0738	.0140

Table std. deviation and std.mean error of pre neoadjuvant and neoadjuvant

Table 2: Independent Sample Test

	Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	of the Difference Lower	of the Difference Upper
DIFF Equal Variances assumed	4.125	.048	.411	48	.683	.0078	.0190	-.0304	.0460
Equal variances not assumed			.424	47.959	.673	.0078	.0184	-.0291	.0447

P >0.01, no significant differences in PSA level between pre neoadjuvant and neoadjuvant

Table 3: Paired Samples Testa

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	of the Difference Lower	of the Difference Upper			
Pair 1 PSAPREM RMINngml - PSAPOST MRMINmgml	.0036	.1201	.0227	-.0430	.0502	.157	27	.876

a. PN = Neo Adjuvant

P>0.01, no significant differences between PSA level in pre MRM and post MRM

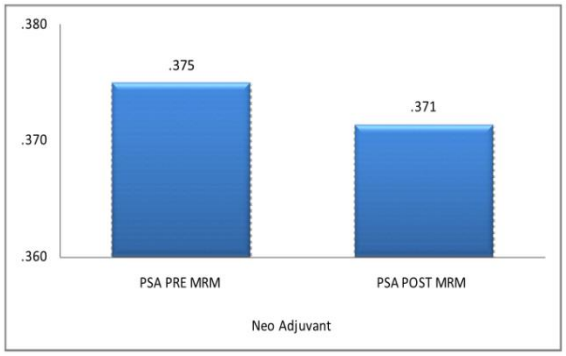

Figure 2: Mean distribution between pre-MRM and post MRM

DISCUSSION

Prostate specific antigen [PSA] is a tumor marker used widely for the diagnosis and monitoring of prostatic adenocarcinoma. The PSA Positivity rate was 28% in the group of all cancer patients. 33% in patients under the age of 50 and 26% in patients at the age of 50 or older. PSA positive tumor were found in 34% of stage I, 24% of stage II, 18% of stage III and stage IV disease. These findings suggest that PSA production in these tissues may be regulated by mechanism which involve derangement of balance between the various steroid hormone and their receptors and also expression of non-functional receptors or deranged post-receptor pathway. Based on the information presented, PSA can now be regarded as a molecule secreted by tissue in malignant diseases. Studies shown that PSA concentration in cytosol extract has a favorable prognostic indicator in breast cancer, Serum PSA level of breast cancer patients were compared with standardized normal level and pre surgical and postsurgical levels are also been compared, there is no significant correlation between serum PSA level and carcinoma breast and no significant difference between Presurgical and post-surgical serum PSA level.[6-9]

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CONCLUSION

This study conducted in an attempt to know, if serum PSA measurement in Female patients with carcinoma breast have any diagnostic, prognostic or monitoring value. Serum PSA level of breast cancer patients were compared with standardized normal level and pre surgical and post-surgical levels are also been compared. After statistical analysis, the conclusion made that, there is no significant correlation between serum PSA level and carcinoma breast and no significant difference between Pre surgical and post-surgical serum PSA level in patients with carcinoma breast. In prostate, PSA enters the circulation by physical diffusion. Factors that affects the transport of PSA from tissue to blood may also be considered at this point and also the tumor behavior of the westerner and Asians may be considered for its significant change of PSA.

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