



Salivary biomarkers in premenopausal women with invasive ductal carcinoma before and after surgical removal of tumor mass

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Abstract: Background: Despite the numerous advances made in breast cancer research, carcinoma of the breast is still the most common, disfiguring and deadliest cancer among women. Multiple molecules isolated from saliva can be used as cancer biomarkers for diagnosis, prognosis, and monitoring studies.

Objective: This study is designed to evaluate secretory status, total protein, CA15-3, and pH in the saliva of premenopausal women diagnosed with invasive ductal carcinoma before and after surgical removal of tumor mass in comparison with those in healthy corresponding women.

Methodology: Forty Iraqi premenopausal women with invasive ductal carcinoma (IDC) in different sites and hospitals for early detection of breast cancer and gynaecology were involved in this study along with 25 healthy women as control. Secretory status and the level of pH, CA15-3, and TP markers were detected in the saliva of all subjects.

Results: 72.5% of IDC patients are non-secretors, which is significantly higher than 32.5% of healthy women, and the salivary pH of IDC patients before surgical removal of tumor is significantly more acidic than that of healthy women and still acidic even after surgical removal. CA15-3 and TP levels are significantly elevated in the saliva of IDC patients whether before or after surgical removal in comparison with those in healthy women. Statistical analysis showed significant negative correlation between salivary levels of both CA15-3 and TP with pH value in IDC patients before surgery, and with both pH value and frequency of non-secretors after surgery.

Conclusion: These findings suggest that saliva possesses a considerable diagnostic and prognostic values in breast cancer, and secretory status may act as a risk factor associated with aggressiveness behavior of breast cancer that need further investigation.

Key words: Breast cancer, invasive ductal carcinoma, saliva, secretory status, CA15-3, pH, TP.