ORIGINAL RESEARCH

Evaluation of salivary sialic acid, total protein, and total sugar in oral cancer: A preliminary report

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ABSTRACT

Aim: Detection of cancer at the early stage is of utmost importance to decrease the morbidity and mortality of the disease. Apart from the conventional biopsy, noninvasive methods like analysis of saliva may provide a cost-effective approach for screening a large population. Thus, this study aimed to estimate salivary levels of sialic acid, total protein, and total sugar in the oral cancer patients and in healthy control group to evaluate their role in diagnosis and prognosis of oral cancer.

Study Design: Unstimulated whole saliva samples were collected from 30 healthy controls (Group I) and 30 squamous cell carcinoma patients (group II). Estimations of salivary levels of sialic acid, total protein, and total sugar were performed. This was correlated histopathologically with the grades of carcinoma.

Statistical Analysis and Results: The Student's 't' test and multivariate regression analysis were performed. The results showed that salivary levels of total protein, total sugar, protein-bound sialic acid, and free sialic acid were significantly higher in oral cancer patients compared to those of normal healthy controls (P values in all the results were less than 0.001). The salivary free sialic acid levels were found to be significantly higher in well-differentiated squamous cell carcinoma than in moderately differentiated carcinoma ($P < 0.001$). However, protein-bound sialic acid, total proteins, and total sugars did not show any statistical significance between well and moderately differentiated carcinomas.

Conclusion: Biochemical analysis of saliva can be used in early detection of cancer and is best correlated with histopathological degree of squamous cell carcinoma.

Key words: Histopathological differentiation, oral cancer, saliva, sialic acid, total protein, total sugar

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