Salivary Proteomic Biomarkers for Early Detection of Oral Cancer in the Egyptian Population

Dalia Ghalwash
The British University, Al Shorouk City, Cairo, Egypt

Abstract

Aim: The present study evaluated the sensitivity and specificity of important proteomic salivary biomarkers; IL-6, IL-8, and sCD44 in the early detection of oral cancer, and any possible associations with risk factors of oral cancer in an Egyptian population.

Methods: The present investigation was conducted on 100 individuals; 25 healthy controls, 25 patients having oral potentially malignant disorders (OPMDs) with dysplasia; 25 patients having OPMDs without dysplasia, and 25 oral cancer patients. Demographic data modified gingival index, oral hygiene level, and salivary levels of the biomarkers were assessed.

Results: Salivary levels of IL-6, IL-8, and sCD44 progressively increased with increased disease severity. Salivary IL-8 and IL-6 levels possess a discriminating potential from normal tissue through different degrees of dysplasia to oral cancer, sCD44 levels had a discriminating power between normal and dysplastic tissues with high sensitivity and specificity. A positive correlation was found between the three biomarkers and the grade of oral squamous cell carcinoma (OSCC) and with different risk factors.

Conclusion: This is the first study that evaluated multiple salivary proteomic biomarkers in the Egyptian population, and the results validate the ability of IL-6, IL-8, and sCD44 to be used as sensitive diagnostic and prognostic biomarkers for screening and early detection of oral cancer. Assessment of salivary levels of these proteomic biomarkers constitutes a simple, noninvasive, point-of-care diagnostic tool.