LETTER

Interleukin 6 as a potential diagnostic and prognostic biomarker in saliva in patients with carcinoma of the larynx

Dear Editor,

Modification of the immune response and immunosuppression is a well-known phenomenon in squamous cell carcinoma (SCC) of the head and neck. Research over the past ten years emphasized the disorder of antitumor cellular immune response as an imbalance between Th1 and Th2 response in favor of Th2 response, what could be one of the mechanisms of tumor cell survival. Cytokines present in the serum as products of secretion of immune cells are of great interest in recent years in the literature. Until now, clinically significant diagnostic and prognostic markers have not been identified, while studies showed different results.

Interleukin 6 (IL-6) is the only cytokine that has been investigated in few studies as a prognostic marker in the serum in patients with laryngeal cancer. Elevated levels of IL-6 were established in the serum in patients with advanced stage, in relapse[1,2] and with dysplasia[3]. To our knowledge, few studies exist about the examination of cytokines in saliva in patients with head and neck SCC[1].

Easy availability of the test sample is of great importance for the determination of diagnostic and prognostic biomarkers. Saliva could be a good indicator for the level of substances in the serum and an ideal biofluid for investigations.

We aim to investigate the levels of IL-6 in the saliva in patients with laryngeal carcinoma. We prospectively enrolled in the study group 20 male patients with newly diagnosed, biopsy-proven SSC (moderately to poorly differentiated) with clinical stage III/IV and in the control group 20 age- and sex-matched healthy volunteers. Exclusion criteria for both groups were chronic, inflammatory or systemic immunological disease and previous or concomitant history of malignancy. The patients received neither adjunctive radiation nor chemotherapy or immunosuppressive therapy in the last six months. Unstimulated saliva was collected from all subjects in the morning.

Detection of salivary IL-6 (RnD Systems, Minneapolis, USA) was performed using commercially available high-sensitivity sandwich ELISA immunoassay kits according to the manufacturer's instructions. The statistical comparison of biochemical parameters for significance of differences between the groups was performed by independent Student's t-test with p values <0.05 considered to be statistically significant. Jandel SigmaStat software (version 2.0) was used for statistical analyses.

Mean values for IL-6 in the saliva were 0.2861 ± 0.12 pg/ml and 0.0205 ± 0.012 pg/ml in SSC group and controls, respectively. The levels of IL-6 were significantly higher in patients with laryngeal SSC compared to controls ($p < 0.001$).

Although it is known that there is an imbalance in the production of cytokines in cancer of the larynx, diagnostic and prognostic markers have not been determined. This study showed that levels of IL-6 were increased significantly in the saliva in patients with laryngeal SSC. We, therefore, conclude that the determination of IL-6 in saliva as non-invasive, low-cost and reproducible biofluid. This is sensitive, but not specific biomarker that could be valuable for early diagnosis, progression of the disease, and overall survival in laryngeal SCC. Further studies in the saliva of different interleukins on larger sample size could be useful to determine highly sensitive and specific biomarkers in the saliva of patients with laryngeal SSC.

Conflict of interest

None.

References

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