

The Role of Salivary Cytokines in Patients with Oral Lichen Planus

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Editorial

Oral lichen planus (OLP) is chronic inflammatory disease of the oral mucosa whose etiology is still unknown but mounting evidence points to the immunologic basis of this disorder [1]. OLP has many different forms; however, reticular type is the most frequent one. OLP is thought to be precancerous lesion with different percentages of malignant transformation reported in the literature. It is well known that erosive/atrophic type most commonly evolve into oral cancer. So far, many salivary cytokines have been investigated in patients with OLP in order to obtain better diagnostic and/or prognostic evaluations. Still, due to the conflicting results, none of the investigated cytokines have been proposed as the most useful marker of the disease. Salivary IL-6 levels have been reported as elevated IL-6 levels in OLP patients by many authors; however some authors reported decreased levels. Sosroseno et al. [2] presumed that increased IL-6 levels develop simultaneously with presentation of autoantigens to the Langerhans cells. Therefore, IL-6 might modulate the severity of the oral lichen disease. Higher salivary IL-6 levels might reflect local or systemic production within many cell types, however, as cytokines act mainly locally and shortly it is more probable that their increased levels reflect local production from keratinocytes, monocytes, macrophages, activated T lymphocytes, endothelial cells and fibroblasts. Abdel-Haq et al. [3] reported that salivary IL-6 levels were increased in patients with OLP in comparison to the healthy controls. Furthermore, patients with atrophic-erosive oral lichen planus had significantly higher IL-6 concentrations in their saliva compared to patients with reticular form of disease. The same authors concluded [3] that the differences observed in IL-6 levels in patients with erosive-atrophic forms of oral lichen planus may indicate a substantial role played by the cytokine in the disease. Gu et al. [4] detected elevated levels of oral and serum IL-6 in patients with ulcerative lichen in comparison to the reticular lichen and controls thus suggesting that elevated IL-6 might reflect chronic inflammatory nature of ulcerative lichen. On the contrary, Fayyazi et al. [5] suggested that OLP is a delayed type of hypersensitivity reaction in which cytokines (including IL-6) control proliferation and differentiation of cytotoxic T-lymphocytes which attack epidermis and lead to apoptosis of undifferentiated keratinocytes. Last but not least Rhodus et al. [6] reported that patients with oral squamous cell carcinoma have elevated salivary IL-6 and TNF- α in comparison to the patients with precancerous lesions and healthy controls. It might be that these cytokines might serve as a biomarker of malignant potential of precancerous lesions which might develop into oral squamous cell carcinoma. Zhang et al. [7] and Rhodus et al. [6] found increased levels of salivary IL-6 and TNF- α in patients with erosive lichen when compared to the healthy controls. On the contrary, Rhodus et al. [8] evaluated salivary levels of IL-6 and TNF- α before and after dexamethasone therapy and reported that the levels of IL-6 and TNF- α did not differ from the controls after dexamethasone therapy. Liu et al.

[9] concluded that the level of salivary IL-6 was significantly lower in OLP group than in control group and that the levels of salivary IL-6 and TNF- α positively related to OLP clinical type. The level of salivary TNF- α is associated with local oral environment. Juretić et al. [10] reported that proinflammatory cytokines TNF- α and IL-6 were elevated in the saliva of patients with oral lichen planus in comparison to the controls which may have diagnostic and/or prognostic significance. In patients with OLP, TNF- α levels in saliva are elevated, correlating with the severity of illness. Salivary TNF- α analysis may be a useful diagnostic tool and a potential prognostic marker in OLP [1]. Liu et al. [11] reported that salivary IL-4 unlike IFN- γ might be useful biomarker for monitoring severity of OLP. With regards to subtypes, salivary IL-4 level in erythematous/ulcerative group was significantly higher than that in reticular group. Zhang et al. [12] found that in patients with OLP, salivary IL-18 was elevated, correlating with the severity of illness. These findings may be considered to improve the predictive or prognostic values of inflammatory cytokines for OLP and also to design possible novel therapeutic approaches. Ghallab et al. [13] demonstrated that salivary IFN- γ , TNF- α , and sTNFR-2 can be detectable in erosive oral lichen planus patients and decreased significantly after treatment with prednisone, which may reveal the possibility of using these disease-related biomarkers in diagnosis and monitoring.

Tao et al. [14] indicated that both IFN- γ and IL-4 may play more important role in pathogenesis of erythematous/ulcerated OLP, and changes of these proinflammatory cytokines in whole unstimulated saliva may reflect the status of the OLP lesion. In OLP lesions, both IFN- γ and IL-4 in erythematous/ulcerated OLP were higher significantly than that in control specimens. In whole unstimulated saliva only IFN- γ of erythematous/ulcerated OLP was increased compared with control.

Therefore, it may be concluded that still none of the investigated salivary cytokines could serve as a predictor of a malignant transformation of OLP into oral cancer. Further research is needed.

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