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Metalloproteinases and cellular components in saliva from periodontitis patients: preliminary study

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Abstract

Background: Metalloproteinases (MMPs) are extracellular matrix macromolecules important in cellular development and morphogenesis, being capable of activating growth factors nearby, cell surface receptors, adhesion molecules and immune mediators [1]. Because type I collagen is the major component of the periodontal extracellular matrix, special attention is given to the role of collagenases, among them MMP-8, which is involved in the degradation of this matrix. Periodontitis (PD) is a destructive inflammatory disease of the supporting tissues of the teeth, affecting 11% of the world's population. Disease results from the interaction between the oral biofilm and the immune system's response [2]. Moreover, salivary MMP levels are associated with aggravation of periodontitis [3, 4], but no relation with which leukocytes populations yet. **Objective:** Our aim is to evaluate MMP-8 salivary levels and the corresponding leukocyte populations in patients with periodontitis stage I/II, stage III/IV and healthy controls. **Methods:** The study includes patients from the Dental Clinic appointments of the University Clinic of IUCS (7 healthy, 5 stage I/II, 7 stage III/IV). Collection of unstimulated saliva samples, followed by quantification of MMP-8 by ELISA and cellular recovery for leucocyte analysis by flow cytometry. **Results:** In a small sample of 19 individuals, studied so far, we observed that PD patients had higher MPP-8 levels than healthy controls. For cellular analysis, only 3 samples were studied, 3 healthy individuals. However, it has not yet been possible to establish any association with MMP-8 levels. **Conclusions:** In a near future, we expect our results to allow a possible association between MMP-8 salivary levels and periodontitis disease expression (stage versus grade). Flow cytometry analyses will allow for the evaluation of the leukocyte populations in saliva and their link with MMP-8 levels, in order to find a potential biomarker for periodontitis.

Keywords: saliva; MMP-8, periodontitis

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