

## **2944 Th1 and Th2 Cytokines in Saliva from Chronic Periodontitis Patients**

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The balance between local levels of Th1 and Th2 cytokines is important in determining the outcome of an immune response. Increased Th2 responses have been proposed to relate to periodontal disease progression. Objectives: This preliminary study was to determine characteristic cytokine levels of Th1 and Th2 cells in human saliva and to evaluate their interrelationships as well as possible association with overall periodontal conditions. Methods: The participants were 30 adults with untreated chronic periodontitis and 11 periodontally healthy subjects as controls. Full-mouth probing depth and bleeding on probing were recorded by the Florida Probe. Stimulated whole saliva was collected by a standard spitting method immediately prior to clinical examination. Various Th1 cytokine (IL-2 and IFN-gamma) and Th2 cytokine (IL-4 and IL-6) levels in saliva were determined by ELISA. Results: All of the 4 target cytokines were detected in the healthy subjects and patients. Both salivary IL-2 and IL-4 levels in patients were significantly higher than in healthy subjects ( $p < 0.05$ ). IL-2 levels showed a significant correlation with full-mouth mean probing depth ( $r=0.608$ ,  $p=0.0013$ ). The ratio of IL-2 to IL-4 in the patients was relatively higher than in the healthy subjects. Conclusions: This study suggests that increased expression of both Th1 and Th2 cytokines might be related to periodontal disease. Further study is warranted to elaborate the relative role of Th1 and Th2 cytokines in periodontal pathogenesis and to evaluate the clinical implications of their levels in saliva. [ljjin@hkusua.hku.hk](mailto:ljjin@hkusua.hku.hk)

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