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The effect of periodontal treatment on IL-٦ production of peripheral blood monocytes in aggressive periodontitis and chronic periodontitis patients

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Abstract

Background: Several cytokines, including IL-٦ have been implicated in the pathogenesis of periodontal disease. It is established that monocytes from periodontitis subjects show an increased production of IL-٦ as compared to healthy subjects. However, little is known about the effect of periodontal treatment on IL-٦ production by monocytes in subsets of periodontitis patients. Objective: The aim of the present study was to evaluate the effect of surgical periodontal treatment on IL-٦ production of peripheral blood monocytes (PBM) in aggressive periodontitis patients (AP) and chronic periodontitis patients (CP) before and after stimulation by E.coli LPS. Methods: Fifteen AP patients, ١٥ CP patients and ١٥ periodontally healthy subjects (PH) took part in the study. PBM IL-٦ production was measured, using ELISA, before and after stimulation of cultured PBM cells by ٠,١ μg/ml LPS of E.coli. Following full-mouth non-surgical and surgical periodontal treatment of the AP and CP groups, the same measurements were repeated for these two groups. Results: LPS-stimulated IL-٦ production was significantly greater than non-stimulated IL-٦ for all ٣ groups. Before periodontal treatment, LPS-stimulated IL-٦ production of the AP group was significantly greater than the other ٢ groups. Periodontal treatment did not result in a significant decrease in unstimulated or LPS-stimulated IL-٦ production by PBM cells in AP and CP patients. No correlation was detected between IL-٦ levels and baseline clinical parameters or changes in clinical parameters. Conclusion: PBM cells in AP patients might be hyper-responsive in terms of IL-٦ production. This hyper-responsiveness does not seem to return to that of healthy subjects even after a successful periodontal treatment. Moreover, the regulation of host inflammatory mechanisms upon LPS challenge might be different between AP and CP patients.

Author keywords

IL-٦; Monocytes; Periodontitis

Indexed Keywords

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