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Endothelin-1 (ET-1): A novel biomarker of periodontal disease ?

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Endothelin(ET)-1 is a 21-amino-acid peptide with multifunctional regulation. ET was originally discovered as a potent vasoconstrictive peptide from endothelial cells. It has been reported that ETs are produced by various cells besides endothelial cells. ETs are related to inflammatory and sclerotic lesions, such as arteriosclerosis and hepatic cirrhosis. Initial research indicated that ET-1 levels in the gingival crevicular fluid from patients with chronic periodontitis were higher than those in the gingival crevicular fluid from healthy subjects. The aim of the present study was to assess the relationship between the clinical parameters and the concentrations of ET-1 within the gingival crevicular fluid from inflamed gingiva and periodontitis sites and, subsequently, after the treatment of periodontitis sites.

A total of 60 subjects were divided into three groups - healthy (group I), gingivitis (group II) and chronic periodontitis (group III) - based on gingival index, pocket probing depth and clinical attachment loss. A fourth group consisted of 20 subjects from group III, 6-8 wk after treatment (i.e. scaling and root planing). Gingival crevicular fluid samples collected from each patient were quantified for ET-1 using an enzymatic immunometric assay.

ET-1 was not detected in any sample from any of the study groups. The results showed that all the gingival crevicular fluid samples were negative for the ET-1 molecule. Therefore, ET-1 cannot be considered as a potential biomarker of periodontal disease progression.

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