

3rd International Conference on

Advanced Dental Education

November 15-16, 2018 | Edinburgh, Scotland

Expression of human beta defensins 1, 2 and 3 in gingival crevicular fluid of patients affected by localized aggressive periodontitis

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The appropriate expression of human beta defensins (HBD) peptides in health and disease may contribute to the maintenance of periodontal homeostasis, possibly through its antimicrobial effect and promotion of adaptive immune responses. The objective was detection of the effect of non-surgical periodontal therapy on the frequency of expression of human beta defensins (HBDs)-1, 2 and 3 in the gingival crevicular fluid (GCF) of patients affected by localized aggressive periodontitis. 20 patients affected by localized aggressive periodontitis (age ranges 20-35 years) and 20 healthy subjects (age range 21-37 years), all subjects were examined using clinical periodontal parameters and radiographic examination using long cone parallel technique; all patients were subjected to non-surgical periodontal therapy combined with 100 mg doxycycline capsule with a maintenance program, GCF samples were collected from patients and healthy control subjects at baseline as well as three months after periodontal therapy from the patients group. In the patient group at baseline; the expression frequency for mRNA transcripts was 30%, 85% and 35% for HBD-1, 2 and 3 respectively, but the expression frequency had changed after periodontal therapy to be 80%, 45% and 85% for the three defensins respectively. In the healthy control subjects the expression frequency was 95%, 40% and 95% for HBD-1, 2 and 3 respectively. There was a statistically significant difference in the expression frequencies of the three defensins from baseline to three months after periodontal therapy ($p < 0.001$), also there was a significant difference between healthy subjects and diseased patients considering the expression frequency of three defensins ($P < 0.001$).

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