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1759 IL-1β, TNF-α and IL-10 mRNA Expression in Advanced Chronic Periodontitis

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Cytokines play key roles in periodontal pathogenesis and altered cytokine profiles may exist in uncontrolled periodontitis lesions. **Objectives:** This study was to investigate the mRNA expression profiles of three selected pro- and anti-inflammatory cytokines in chronic periodontitis. **Methods:** The participants were 13 subjects with advanced chronic periodontitis, mean age of 51.8±3.6 years. They received intensive non-surgical periodontal treatment but showed unresolved periodontitis lesions. Biopsies were collected from the sites with remaining deep pockets and adjacent non-pocket sites in a same patient during periodontal surgery. The tissue samples were evaluated for IL-1β, TNF-α and IL-10 mRNA expressions by Quantikine® mRNA quantitation kits. ANOVA and Chi-square test were used for statistical analysis. **Results:** The detection frequency for the three-target cytokine mRNA expressions at pocket (probing depth 6-10mm) and non-pocket (probing depth 2-3mm) sites was as follows - pocket/non-pocket: 100%/100% for IL-1β, 84.6%/85.7% for TNF-α and 92.3%/100% for IL-10. TNF-α expression was higher at pocket sites (322.0±74.4 amol/mL) than at non-pocket sites (184.6±43.5 amol/mL)($p<0.05$), while no significant difference was found in the expressions of IL-10 and IL-1β between pocket and no-pocket sites. In the total expression levels of the three-target cytokines, higher relative proportion of TNF-α expression was found at pocket sites (39.7±7.2%) than at non-pocket sites (26.8±8.9%). The relative ratio of TNF-α and IL-1β expressions was also higher in pocket sites (3.7±0.5) than in non-pocket sites (2.4±0.9). A positive correlation existed in IL-10 mRNA expression between the pocket and non-pocket sites ($r=0.77$, $p<0.05$). No significant correlation was found among the three-target cytokine expressions. **Conclusions:** This study showed that both pro- and anti-inflammatory cytokines were expressed in pocket and non-pocket sites in unresolved chronic periodontitis. However, TNF-α mRNA expressions appeared to be upregulated in pocket sites which might reflect host-mediated periodontal destruction. Supported by the Hong Kong Research Grant Council (RGC, HKU 7310/00M & 7287/97M). ljjin@hkusua.hku.hk

Seq #169 - Cytokines II
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