

INTRA-INDIVIDUAL CYTOKINE LEVELS IN CREVICULAR FLUID IN SUBJECTS WITH TEETH AND DENTAL IMPLANTS: A CROSS-SECTIONAL STUDY.

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**Aim:** To study the cytokine profile in individuals with dental implants and the intra-individual correlations in crevicular fluid samples from healthy and periodontitis/peri-implantitis sites. In addition, to calculate the diagnostic value of a combination of cytokines.

**Material and Methods:** Patients (n=163) with dental implants and a minimum of 10 years follow-up were included. Samples from gingival crevicular fluid (GCF) and peri-implant crevicular fluid (PICF) was collected from healthy and diseased sites within the same patient. Cytokines levels were detected using Bio-Plex Pro Human inflammation Panel.

**Results:** The levels of APRIL/TNFSF13, gp130s/IL6r $\beta$ , IL-19 and IL-35 were significantly higher at healthy implants compared to healthy teeth. The levels of IL11 and LIGHT/TNFSF14 were significantly lower for healthy implants compared to healthy teeth. The cytokines IL-29/IFN- $\lambda$ 1 and TWEAK/TNFSF12 were significantly correlated with peri-implantitis. The cytokines IFN- $\beta$ , sTNF-R1 and TWEAK/TNFSF12 were significantly correlated to periodontitis.

**Conclusion:** The intra-individual cytokines levels differed significantly between healthy tooth and healthy implant sites whereas no difference was found between sites with periodontitis and peri-implantitis. Higher levels of the cytokine TWEAK/TNFSF12 is associated with both periodontitis and peri-implantitis and could be a new biomarker candidate to identify disease. Correctly classified observations were 82% regarding peri-implantitis and 91% regarding periodontitis.