The Involvement of Interleukin-11 in the Pathogenesis of Periodontal Disease

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Abstract

Aim: IL-11 is an anti-inflammatory cytokine which plays important roles during immune response. Previously a significant reduction of IL-11 levels has been reported from periodontal health to disease clinically. The aim of the current study was to evaluate the potential role of IL-11 in the pathogenesis of periodontal disease by determination of IL-11 gene expression levels in human gingival fibroblasts (HGFs) in response to a major periodontal pathogen Fusobacterium nucleatum (Fn) in vitro.

Methods: HGFs were cultured in a media containing DMEM/F12, 10% fetal bovine serum, 1% Penicillin and Streptomycin and 1% Amphotericin B. Fn (subsp. Polymorphum; ATCC 10953) was obtained anaerobically and diluted with DMEM/F12. HGFs were infected with Fn for 4 hours at 50 multiplicity of infection (MOI) in an antibiotic-free medium. Escherichia coli lipopolysaccharide (LPS) was used as a positive control. RNA isolation was performed and subsequently, cDNA was converted. Relative quantification levels of IL-11 were evaluated by real time-Polymerize chain reaction (rt-PCR).

Results: A significant downregulation (2fold) of IL-11 was detected in HGFs infected with Fn for 4 hours compared to control group.

Conclusion: IL-11 may be dysregulated by Fn, a major periodontal pathogen, therefore may be involved a role in the pathogenesis of periodontal disease.

Biography:

Dr Kübra ARAL has completed his PhD in Periodontology in Turkey and postdoctoral studies from University of Birmingham, UK. She has published more than 15 papers in reputed journals and has been a reviewer for high impacted journals in the field of Dentistry


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