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## **Investigation of Subgingival Profile of Periodontopathic Bacteria** Using Polymerase Chain Reaction

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Abstract: Periodontopathic bacteria such as *Porphyromonas gingivalis*, Aggregatibacter actinomycetemcomitans, Tannerella forsythia, Campylobacter rectus and *Treponema denticola* play an important role in the initiation and progression of periodontitis. The aim of this investigation was to evaluate the relationship between periodontal clinical parameters and the subgingival profile of periodontopathic bacteria. Twenty-six periodontitis patients (23-62 years of age; mean age, 40.2±13.2) with no systemic disease agreed to participate in the study. Periodontal clinical parameters, including probing depth (PD) and bleeding on probing (BOP) were recorded. Subgingival plaque samples were obtained from deep (PD≥4 mm) and shallow (PD≤3 mm) pockets in each patient for detection of P. gingivalis, A. actinomycetemcomitans, T. forsythia, C. rectus and T. denticola by polymerase chain reaction technique. The relationship between the periodontal pathogens and clinical parameters was determined with the Fisher exact test, and a statistically significant association was found between detection of P. gingivalis, T. forsythia, C. rectus and T. denticola and PD or BOP. T. denticola was the most prevalent pathogen in both shallow PD and deep PD sites. No statistically significant association was found between detection of A. actinomycetemcomitans and the clinical parameters examined. A statistically significant association was found between detection of the red complex bacteria and the clinical parameters. These results suggest that the red complex pathogens and C. rectus play an important role in the initiation and progression of periodontitis.

## Key words: <u>Periodontopathic bacteria</u>, <u>Polymicrobial infection</u>, <u>Red complex</u>, <u>Periodontitis</u>

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