

ABSTRACT

Background:

Periodontitis is a disease of tooth supporting tissues and is inflammatory in origin. The etiological role of bacteria is established, although contributions of individual species or groups of organisms are unclear and unrecognized periodontal pathogens remain to be identified. A strong association has emerged between newly identified gram positive *Filifactor alocis* and periodontitis. Polymerase Chain Reaction (PCR) is a highly sensitive and specific technique for the microbiological analysis of the subgingival plaque.

Aim:

To identify the presence of *Filifactor alocis* in periodontal biofilms through PCR technique in healthy, generalized chronic periodontitis and generalized aggressive periodontitis subjects.

Materials and methods:

In this study, subgingival plaque samples were obtained from 45 subjects divided into three groups based on their periodontal conditions namely healthy n=15, generalized chronic periodontitis (GCP) n=15, and generalized aggressive periodontitis (GAP) n=15. The clinical parameters, plaque index, sulcus bleeding index, probing pocket depth and clinical attachment level were determined. Furthermore, *Filifactor alocis* was identified using Real-time PCR.

Results:

In the selected site, the difference between mean plaque index, sulcus bleeding index and clinical attachment level were statistically significant between healthy and periodontitis (chronic and aggressive) sites. The mean probing pocket depth of healthy group was 2.71 ± 0.22 , 5.76 ± 0.58 for chronic periodontitis, and 6.27 ± 0.14 for aggressive periodontitis which was statistically significant ($p < 0.05$). *Filifactor alocis* was identified in all 45 samples and it was expressed in terms of cycle threshold (CT) values and was found to be higher in deep diseased pockets rather than healthy. The mean CT value of healthy control group was 38.01, chronic periodontitis group was 30.85 and aggressive periodontitis group was 28.92.

Conclusion:

Within the limits of present study, it can be concluded that *Filifactor alocis* is a potent diagnostic marker organism for periodontal disease and it should be considered an important periodontal pathogen. The putative pathogens cause dysbiosis and the role of putative periodontal pathogen *F. alocis* causing dysbiosis need to be evaluated in future studies for preventive, predictive and personalized treatment, beneficial for patients.

Key words: *Filifactor alocis*, PCR, chronic periodontitis, aggressive periodontitis