Relationship between clinical probing depth and subgingival microbiota assessed by BANA (n-benzoyl-dl-arginine 2-naphthylamine) test

ABSTRACT

Periodontitis is defined as "an inflammatory disease of the supporting tissues of the teeth caused by specific microorganisms or groups of specific microorganisms, resulting in progressive destruction of the periodontal ligament and alveolar bone with increased probing depth formation, recession, or both". The aim of the present study was to determine the relationship between clinical probing depth and subgingival microbiota assessed by BANA (N-benzoyl-DL-arginine-2- naphthylamide) test in chronic periodontitis patients. In this study, 34 subjects within the age range between 35-55 years old attending at the Department of Periodontology, University of Dental Medicine, Mandalay were chosen. 4 teeth with sites exhibiting clinical probing depth ≥2mm were selected from each subject (total 136 sites) and other clinical parametrs examination were performed. Samples of subgingival plaque taken from clinical probing depth of ≥2mm were analysed by chair-side enzymatic method (BANA). According to frequency distribution of BANA hydrolysis, BANA positive cases (105 sites, 77.2%) predominated over BANA weakly positive cases (15 sites, 11%) and BANA negative cases (16 sites, 11.8%) respectively. Clinical probing depths of more than >6mm were 91.1% BANA positive, probing depths of 4-6mm were 67.4% BANA positive and probing depths of 2-3mm were 73.3% BANA positive respectively. In this study, Chi-square value $(X2)$ was 9.772 and p value was 0.04. There was a statistically significant relationship between BANA test result and Clinical Probing Depth (PD). Present findings provide early detection of putative periodontal pathogens using BANA test and early diagnosis of periodontal destruction and also beneficially support in considering the strategies of periodontal management.