Identification of Periodontal Pathogens in Obese Subjects with Chronic Periodontitis

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Objectives: To identify and quantify subgingival periodontal pathogens in obese subjects with chronic periodontitis (CP) and to correlate their presence with clinical parameters. Material & method: This cross-sectional comparative study involved 230 Malaysian adults aged >30 years old with mild, moderate and severe CP (Centre for Disease Control and Prevention in conjunction with American Academy of Periodontology (CDC-AAP)). They were assigned into test (obese, $n=116$) and control group (non-obese, $n=114$). Obese was defined as individuals with body mass index $>30$kg/m\textsuperscript{2} (WHO 1998). Visible plaque index (VPI), Gingival bleeding index (GBI), Probing pocket depth (PPD) and Clinical attachment loss (CAL) were recorded. Subgingival plaque were sampled from the deepest probing depths which showed bleeding on probing to quantify \textit{P. gingivalis}, \textit{T. forsythia}, \textit{P. intermedia} and \textit{A. actinomycetemcomitans} using qPCR technique. Results: Obese subjects displayed higher VPI and GBI than non-obese group, while non-obese subjects displayed higher PPD and CAL than obese group ($p<0.05$). \textit{P. gingivalis} was detected 100\% in both groups but higher level in non-obese subjects ($23.80\times10^5$ cells/µl). Similarly, \textit{T. forsythia} level was found to be higher in non-obese subjects (98.2\%, 8.61\times10^5 cells/µl). \textit{P. intermedia} showed higher prevalence in obese subjects (91.4\%) but equal level distribution. \textit{A. actinomycetemcomitans} was the least detected but significantly higher level in obese subjects (30.2\%, 22.92\times10^5 cells/µl). A negligible correlation ($r<0.30$) existed between \textit{P. gingivalis} with all clinical parameters in non-obese subjects, but only with CAL and PPD in obese subjects. While low positive correlation ($r<0.50$) presence between \textit{T. forsythia} with PPD and CAL in obese subjects. Conclusions: Obese subjects with CP showed significantly higher VPI and GBI, also higher \textit{A. actinomycetemcomitans} level than non-obese group. While non-obese subjects with CP showed significantly higher PPD and CAL, also higher \textit{P. gingivalis} and \textit{T. forsythia} level than obese group. Only low positive correlation existed between PPD and CAL with \textit{T. forsythia} level in obese subjects with CP.