Distribution patterns of black-pigmenting Gram-negative bacteria in periodontitis patients

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In ten patients suffering from moderate to advanced periodontal disease, separate microbiological samples were taken from four sites of every tooth in the dentition. A total of 927 samples, 84 to 102 per patient, were analyzed to determine distribution patterns of black-pigmenting Gram-negative bacteria [1,2]. While Prevotella intermedia- and Pr. melaninogenica-positive samples were obtained from all subjects, Porphyromonas gingivalis was not detected in any site of three subjects. The P. gingivalis-positive patients could be divided into two distinct groups: they presented either with few positive sites and low proportion or with overall high frequencies and high proportion of P. gingivalis. The number of samples necessary to diagnose the presence of P. gingivalis at a 95% confidence level varied considerably between these groups. In four patients, sampling four randomly selected sites was sufficient; in the remaining three positive patients, 25 or more samples were required to detect the organism with equal certainty. The majority of P. gingivalis-positive samples were also positive for Pr. intermedia. Seven different protocols for multiple subgingival sampling were studied. When considering the number of samples needed to detect the presence of P. gingivalis and to estimate the highest proportion of this organism, selection of the deepest pocket in each quadrant was the most efficient method of sampling.

References