Proportion and Quantity of *Aggregatibacter aphrophilus* in Plaque from Adolescents with and without Alveolar bone loss in Västerbotten County

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ABSTRACT

Background: Periodontitis is an inflammatory disease defined by alveolar bone loss (ABL). A common pathogen involved is Aggregatibacter actinomycetemcomitans and it is closely related to Aggregatibacter aphrophilus that is found in the oral microbiome and has low virulence in periodontitis. It is hypothesized that presence of high levels of A. aphrophilus may be beneficial for periodontal health by taking up space, thereby preventing A. actinomycetemcomitans from growing in high numbers.

Aim: The aim is to study a possible relationship between A. aphrophilus and A. actinomycetemcomitans and evaluate whether the presence of high levels of A. aphrophilus in plaque might be accompanied by low levels of A. actinomycetemcomitans in the same niche.

Methods: X-rays from 1655 youths born 2001, were analyzed in an ongoing PhD project. 24 individuals with ABL were found and 13 of them participated in the study. A control group was randomly selected. In the present project, the levels of the two Aggregatibacter species in plaque samples, previously collected from 37 of the volunteers were measured earlier with qPCR.

Results: The levels of A. aphrophilus compared to A. actinomycetemcomitans in the group with ABL varied between the samples and did not show a statistically significant difference. For the control group, A. aphrophilus were present in 81% compared to 20% presence of A. actinomycetemcomitans. The results showed statistical significance for the control group.

Conclusions: Our findings suggest that high levels of A. aphrophilus can be associated with periodontal health. Also, our results indicate a possible inverse relationship between the two bacteria.