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Cariogenic and Protective non-Cariogenic Streptococcus in Orthodontic Treatment with Clear Aligners

Objectives: The increased demand for orthodontic treatments has popularized clear aligners because of aesthetics and the advantage of being able to remove them to eat, drink and perform daily oral hygiene. The effects of fixed orthodontic appliances on oral health have been previously described and include an increase of bacterial plaque and induction of changes in oral biofilm with consequent risk of periodontal diseases and dental caries. Although scarce, there are studies in literature that compare the impact on periodontal health of aligners v*ersus* fixed appliances, but little is known about effects on enamel demineralization. Since caries depend on the imbalance between cariogenic (e.g., *S. mutans* and *S. sobrinus*) and commensal species (e.g., *S. mitis, S. oralis* and *S. sanguinis*), it is important to understand the impact of treatment with aligners in oral biofilm and consequent susceptibility to caries.
This prospective study assesses the fluctuations occurring in oral S*treptococci* during orthodontic treatment with clear aligners both of cariogenic and protective non-cariogenic species.
Methods: Oral biofilm and saliva samples were collected in 35 patients undergoing orthodontic treatment with transparent Invisalign aligners at 3 time points: before placing the first aligner (T0), after 1 (T1) and 3 months (T3). We also collected personal data (gender, age, oral health habits) and the DMFT index was determined.
DNA was isolated both from biofilm and saliva samples and qPCR used to quantify cariogenic and non-cariogenic species.
Results: The relative quantities of *streptococci* vary between individuals but not significantly between time points for the same individual.
Conclusions: While having an impact on the oral microbiome of the individual, there isn't a significant increase in cariogenic species when aligners are used. The results presented are from 3 time points. Further conclusions will be possible when data from other time points (full treatment and 2 months after treatment) are completed

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