



CFAO GRADUATE STUDENT POSTERBOARD ABSTRACTS

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Can exposure to peptide functional domains change the pellicle formation on orthodontic brackets?

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White spot lesions have been identified as a common adverse effect of orthodontic treatment. Fixed orthodontic appliances increase risk of developing white spot lesions due to the greater surface area for adherence of plaque and the irregular bracket shape limits the selfcleansing ability of saliva, lips, tongue and cheeks.

Of the many salivary proteins which have been identified in the acquired enamel pellicle (AEP), the peptide RR14 derived from histatin and DR9 derived from statherin have been identified as having antibacterial/antifungal properties and a roll in remineralization respectively. Previous research has demonstrated that both histatin and statherin show an affinity for metallic orthodontic brackets. Our aim is to investigate how exposure to hybridized peptide DR9-RR14 will affect the protein concentrations of the acquired pellicle on the metallic orthodontic bracket.

The total sample consisted of 30 orthodontic brackets divided in the three groups: exposure to saliva only (n=10); exposure to DR9-RR14 after saliva (n=10); and exposure to DR9-RR14 before saliva (n=10). The pellicle was harvested by incubation with a buffer solution. The total protein concentration was assessed by micro BCA. Individual protein identification characterization and quantification was obtained through liquid chromatography electro spray ionization tandem mass spectrometry (LC-ESI-MS/MS). A comparative analysis of protein variation between each group will be assessed.