

Oral Microflora and the Risk of Dental Caries in Portuguese Children

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Abstract : Objectives: To assess the presence or absence of Streptococcus mutans, Streptococcus gordonii and Streptococcus salivarius in the oral biofilm of children in an elementary school of Viseu, Portugal, and verify the relationship between Streptococcus gordonii and Streptococcus salivarius and the absence of dental caries. Methods: A cross-sectional study was designed with a final sample of 40 children aged 6-11 years old. Oral examination was accomplished with the identification of their oral health status and oral biofilm collection. Analysis of biological samples by molecular techniques of DNA isolation and identification of three Streptococci bacteria by Polymerase Chain Reaction (PCR) was made. Results: We identified Streptococcus salivarius and Streptococcus gordonii only in the lower interincisal region. These species were also present mainly in the first permanent non-decayed molars. On the contrary, Streptococcus mutans was found mostly in decayed first permanent molars. Conclusion: This preliminary study establishes a possible association between the absence of dental caries and the presence of Streptococcus gordonii and Streptococcus salivarius. Since these two species are described as alkali producers, it is suggested that their presence somehow confers protection against caries. These results support new dental caries prevention strategies based on oral biofilm modulation by enrichment with alkalinogenic species.

Keywords : dental caries, oral biofilm, Streptococcus gordonii, Streptococcus salivarius

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