

Journal of Research in Medical and Dental Science
2021, Volume 9, Issue 4, Page No: 30-35
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Available Online at: www.jrmds.in
eISSN No. 2347-2367; pISSN No. 2347-2545



The Relation of Salivary Cathelicidin and Beta-Defensin with Dental Caries of Schoolchildren

ABSTRACT:

Background: Salivary antimicrobial peptides contribute to oral health by playing a role in innate response against

oral diseases, owing to their antimicrobial, antiplaque and immunomodulatory activity.

Aim of study: This study was performed to determine the levels of cathelicidin LL-37 and beta-defensins in saliva of children, and assess the relationship of both biomarkers to dental caries prevalence and severity.

Materials and Methods: Eighty-eight schoolchildren of age 6-7 years participated in the study. The sample was divided

into two groups; study group of 44 children with moderate/severe caries and control group of 44 children free from caries. Oral examination and measurement of clinical parameters of caries experience by dmf index, caries severity by

ICDAS index. Saliva samples were collected from both groups, then submitted to enzyme-linked immunosorbent assay.

Results: A non-significant difference was found in salivary level of cathelicidin LL-37 between the two groups. However, the results revealed that the salivary level of beta-defensin was significantly decreased in the study group than in the control group. Moreover, a significant negative correlation was found between both peptides with caries experience and caries severity.

Conclusion: The results support the idea of a protective role of antimicrobial peptides as important immune molecules in maintaining the oral health against caries. Therefore, it could be a gate for more advanced future biological screening method for caries susceptibility and new strategies for prevention.