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Salivary cytokines in disabled children with dental caries

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Background: Dental caries is an inflammatory disease with multifactorial etiology. Cytokines generate and maintain host responses to microbial infection.

Objective: To assess salivary pro-inflammatory cytokines – tumour necrosis factor (TNF-α), interleukin-1β (IL-1β), interleukin-6 (IL-6) and anti-inflammatory cytokines – interleukin-4 (IL-4), interleukin-10 (IL-10) in disabled children with dental caries.

Materials and Methods: Whole saliva of 212 disabled children, as well as 212 healthy children (control group), was investigated for the presence of TNF-α, IL-1β, IL-6, IL-4 and IL-10 by the enzyme immunoassay – ELISA. The written consent of children's parents was taken for the study. SPSS vs.16.0 was used for descriptive and inferential analysis, using both parametric and non-parametric tests ($p<0.05$).

Results: The results showed an elevation of pro-inflammatory cytokines (TNF-α, IL-1β, IL-6) in un-stimulated whole saliva in disabled children with dental caries, compared with controls, it being statistically significant ($p<0.05$). Although children with disabilities were found higher concentration of anti-inflammatory salivary cytokines, their production is not commensurate with an increase of pro-inflammatory cytokines. The study also shows a positive correlation between concentration of pro-inflammatory cytokines in un-stimulated whole saliva in disabled children and df-index, DMF-index, high concentration of *Streptococcus Mutans* in dental biofilm.

Conclusions: These data suggest some links between the production of pro-inflammatory cytokines in saliva and dental caries in disabled children, providing a map to guide future studies in order to identify high risk or preventive targets for dental caries.

Key words: *dental caries*, saliva, disabled children, cytokines.

Biography

Spinei Aurelia has completed her PhD (in 2001) and postdoctoral studies (in 2013) from State University of Medicine and Pharmacy „Nicolae Testemitanu", Republic of Moldova. She is Associate Professor, chief of preventology course within the Department of Pediatric Maxillo-facial Surgery, Pedodontics and Orthodontics, State University of Medicine and Pharmacy "Nicolae Testemitanu". She has published 94 articles, 22 materials of scientific communications, 9 patents, 15 innovation patents, 4 textbooks and 2 books and has been serving as an editorial board member of repute (Romanian Journal of Dental Medicine, edited by UNAS, Romania).

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