عنوان مقاله:

Cytokines, Minerals, Total Antioxidant Capacity, Nitric Oxide, and Salivary Characteristics as Biomarkers Associated With Early Childhood Caries: A Narrative Review

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نویسندگان:

Negareh Salehabadi - *Student Research Committee, Faculty of Dentistry, Mazandaran University of Medical Sciences, Sari, Iran.*

Aaryousha Moallem Savasari - *Student Research Committee, Faculty of Dentistry, Mazandaran University of Medical Sciences, Sari, Iran.*

Azam Nahvi - *Department of Pediatric Dentistry, Faculty of Dentistry, Mazandaran University of Medical Sciences, Sari, Iran.*

خلاصه مقاله:

Background: Early childhood caries (ECC) is one of the multifactorial, acute, and progressive types of tooth decay. Some salivary biomarkers are associated with this disease. Objectives: The data we used in our review were searched from articles published between ۱۹۵۰ to ۲۰۲۱ and using early childhood caries (ECC), children, saliva, salivary biomarkers, salivary characteristics, salivary minerals, cytokines, total antioxidant capacity (TAC) and nitric oxide (NO) as keywords, collected from official web pages (Scopus, PubMed, Embase and Google scholar) and documents published from different international institutions. Methods: The search was limited to articles published in the English language. After the abstract screening, the full text of ۱۹۴ relevant studies was reviewed. Finally, ۱۰۱ relevant studies were selected. Results: Cytokines with the potential to affect ECC include interleukin (IL)-۱ (IL-۱β), IL-۶, IL-۸, IL-۱۰, IL-۱۲, tumor necrosis factor-alpha (TNFα), a soluble cluster of differentiation (sCD)۱۴-cluster of differentiation ۱۴ (CD۱۴), CD۶۳ and vascular endothelial growth factor (VEGF). The minerals associated with the ECC are calcium (Ca), phosphate (PO_4^{3-}), fluoride (F), magnesium (Mg), iron (Fe), and lead (Pb). Conclusion: Some characteristics of saliva that seem to concern ECC include salivary pH, salivary total protein, salivary total lipid, salivary buffering capacity, and saliva flow rate. Other vital factors observed to have significant effects on the ECC process involve total antioxidant capacity (TAC) and nitric oxide (NO).

کلمات کلیدی:

Pediatric dentistry, Saliva, Minerals, Antioxidant, Dental caries, Nitric oxide, Cytokines