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22922 | Association Between Maternal Cardiometabolic Risk Factors and Oral Health of Infants

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Background & Aim: Maternal health conditions during pregnancy influence infant health[1-3]. Cardiometabolic risk factors (CRFs), such as obesity, hypertension, and gestational diabetes, increase maternal and neonatal complications due to chronic inflammation, which disrupts immune and endocrine adaptation[4,5]. While the effects of CRFs on infant development are well studied, their impact on oral health remains unclear. Therefore, this study aims to assess the association between maternal CRFs and oral health of infants at three years of age. **Methods:** The prospective OralBioBorn cohort follows pregnant women (healthy and with CRFs) and their children up to 36 months postpartum. At age three, oral hygiene habits, caries experience using ICDAS, and Quigley-Hein plaque index (PI) of children were assessed. PI was evaluated on buccal and lingual surfaces. **Results:** Preliminary data from 36 children (26 from healthy mothers, 10 from mothers with CRFs) showed no cavitated, missing, or filled teeth due to caries, nor PUFA Index lesions, in either group. The PI did not differ significantly between children of healthy mothers and those of mothers with CRFs (0.17±0.32 vs. 0.49±0.72, $p>0.05$, Mann-Whitney U test). **Conclusions:** The lack of associations between maternal CRFs and child oral health may reflect multiple factors, including the small sample size, the young age of the children, and the possibility that maternal CRFs do not exert a strong early influence on oral health. Future work will focus on evaluating a larger cohort and considering additional determinants, such as oral hygiene and dietary habits, which may play a more prominent role in shaping early oral health outcomes. This will provide a deeper understanding of potential mediating factors influencing early oral health trajectories.

Keywords: Maternal Cardiometabolic Risk Factor, Obesity, Hypertension, Gestational Diabetes, Children's Oral Health.

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References:

[1] Muglia, L. J., Benhalima, K., Tong, S., & Ozanne, S. (2022). Maternal factors during pregnancy influencing maternal, fetal, and childhood outcomes. BMC medicine, 20(1), 418. https://doi.org/10.1186/s12916-022-02632-6

[2] Foratori-Junior, G. A., Jesuino, B. G., Caracho, R. A., Orenha, E. S., Groppo, F. C., & Sales-Peres, S. H. C. (2020). Association between excessive maternal weight, periodontitis during the third trimester of pregnancy, and infants' health at birth. Journal of applied oral science: FOB, 28, e20190351. https://doi.org/10.1590/1678-7757-2019-0351 9.

[3] Han, Y. W., & Wang, X. (2013). Mobile microbiome: oral bacteria in extra- oral infections and inflammation. Journal of dental research, 92(6), 485–491. https://doi.org/10.1177/0022034513487559

[4] Sahu, A. K., Harsha, M. M., & Rathoor, S. (2022). Cardiovascular Diseases in Pregnancy - A Brief Overview.Current cardiology reviews, 18(1), e250821195824. https://doi.org/10.2174/1573403X17666210825103653

[5] Resende, R; Borba, P; Amâncio, N; Almeida, R. (2022). Updates on the influence of obesity on the onset of gestational diabetes and its complications for mother and fetus. Research, Society and Development, v. 11, n. 17, e185111738952, 2022 (CC BY 4.0) | ISSN 2525-3409 | DOI: http://dx.doi.org/10.33448/rsd-v11i17.38952