

# Obesity during pregnancy and its oral repercussions: what is the current evidence?

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Dear editor,

Periodontal medicine is a field that has been in evidence in recent years due to the increased number of diseases and conditions that have been linked to periodontitis<sup>1</sup>. A systematic review on periodontal medicine indicated 57 different conditions that may be associated with periodontal disease, among them, the pregnancy<sup>2</sup>.

During pregnancy, physiological, immunological and hormonal changes occur in the women's body. Considering the high levels of estrogen and progesterone and the reduced antimicrobial activity of peripheral neutrophils, pregnant women are more prone to acute periodontal inflammation even with a small amount of dental plaque<sup>3</sup>.

Obesity is a chronic and inflammatory disease that has been considered one of the biggest public health problems<sup>4</sup>. In Brazil, 63.3% and 30.2% of women are considered with overweight and obesity, respectively<sup>5</sup>.

There is strong evidence to associate obesity with periodontitis<sup>6-8</sup>. This association is explained by the adipose tissue of overweight patients secreting inflammatory mediators, such as TNF- $\alpha$ , IL-6, adiponectin, leptin and resistin, reducing the host's immune response and causing a generalized inflammatory state of the body<sup>6-8</sup>. Therefore, in the presence

of dental plaque, obese patients present an exacerbated inflammatory response of the periodontal tissues.

Considering the synergistic effect of pregnancy and obesity on periodontal tissues, previous studies have investigated the association of these outcomes in pregnant women<sup>9-20</sup>. Most of them showed a positive association between maternal excessive weight and periodontitis<sup>9-18,20</sup>, and also associated maternal overweight with other systemic disorders, such as arterial hypertension and gestational diabetes mellitus, which in turn may further damage periodontal tissues.

Foratori-Junior et al.<sup>17</sup> (2020) conducted a longitudinal study in which they evaluated overweight/obese women during the 2nd and 3rd trimesters of pregnancy and also after delivery. The authors pointed out that overweight/obese women had a higher prevalence of periodontitis during pregnancy and this condition remained even with the reduction of hormone levels after childbirth.

It is important to highlight that some limitations were found among those studies that sought to assess the association of these outcomes during pregnancy. Most of them had a cross-sectional design, which makes it impossible to understand the cause-and-effects relationship between the outcomes. In addition, they differ in relation to the sample size, cutoff points of the BMI to classify excessive weight and, mainly, to the classification for periodontitis. These divergences make it difficult to compare studies.

It is known that maternal periodontitis may result in negative perinatal outcomes, being associated with a doubled risk of prematurity<sup>21</sup> and with low birth weight<sup>22</sup>. Therefore, the holistic care of women during pregnancy is necessary, considering their systemic involvement.

As future perspectives, it is expected that population-based longitudinal studies will be conducted in order to better understand the association of obesity and periodontitis during pregnancy. In addition, studies at biological levels are also important, aiming to identify the plausible pathophysiological mechanisms of the association of these outcomes and, possibly, to identify biomarkers that serve as instruments for us to adopt adequate protocols in the management of periodontitis during pregnancy in women affected by obesity

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