Trajectories of Salivary Cortisol, IgA and Progesterone in Anxious Pregnant Women in Relation to Gingival Health Status

A thesis
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Abstract

Background: Anxiety is one of the most common mental issue affecting pregnant women throughout their gestational period. Anxiety has been related to hormonal changes in expectant women's body, and had some impact on oral health through different mechanisms.

The aims: This study aimed to assess the effect of pregnancy-specific anxiety on oral and salivary variables and its impact on gingival condition of the primigravida pregnant women in third trimester.

Subjects, Materials and Methods: The total sample was 200 pregnant women aged between (20-29) years old, they were selected from Baghdad Teaching Hospital in Baghdad city / Iraq. Beck anxiety inventory (BAI) was used to assess the anxiety of pregnant women. Pregnant women were categorized according to this scale into three groups (low, medium and high anxiety group). The diagnosis of oral variables were done by using plaque index by Silness and Löe (1964); gingival index of loe and silness (1963) and calculus index set by Ramfjord (1959). Unstimulated saliva sample was collected according to Navazesh and kumer, 2008. Salivary pH was measured by pH meter and salivary flow rate was assessed by divided volume of collected saliva per five minutes. Sub-sample of 40 pregnant women with high anxiety level and 40 with low anxiety level were selected for measuring serum cortisol according to WHO, 2010: salivary cortisol, IgA and progesterone levels measured by using ELISA technique.

Results: from the total sample that include 200 women, the high anxiety group was 21%, moderate anxiety group was more occurrence about 59% and the low anxiety group was 22%. The plaque index was higher among the high anxiety group with significant difference, the gingival index was higher

among low anxiety group with significant differences, and a moderate type of gingival severity was higher percent than other types. The salivary pH and flow rate in high anxiety group have lowest mean values with significant difference. A sub sample of 80 pregnant women were selected; the mean value of gingival index was higher among low anxiety group with non-significant difference. This study showed a negative significant correlation between flow rate and plaque index in low anxiety group, and a negative significant correlation between pH and plaque index in high anxiety group. A positive strong significant correlation between plaque and gingival index among high anxiety group. Concerning the serum and salivary biomarkers; serum and salivary cortisol were found higher among high anxiety group with significant differences, while salivary IgA and progesterone were lower among this group with significant difference. The correlation between salivary biomarkers was a negative strong significant among the high anxiety group, while correlation between serum and salivary cortisol was positive strong significant in high and low anxiety groups. The finding of current study showed a positive significant correlation between salivary cortisol with plaque index in both group and strong positive significant correlation between salivary progesterone with gingival index in low anxiety group. The correlations of salivary biomarkers with salivary flow rate was non-significant except a negative significant correlations between flow rate and salivary cortisol in low anxiety group.

Conclusion: The results of this study revealed that the anxiety levels have an effect on the serum and salivary biomarkers, physical variables and oral cleanliness, which affect the gingival condition.

مسارات الكورتيزول اللعابي، الغلوبيولين المناعي أ والبروجسترون في النساء الحوامل القلقين فيما يتعلق بالحالة الصحية اللثوية

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