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The Impact of Periodontal Health Status with Salivary and Milk Pro-Inflammatory Cytokines on Infant's Growth and Mother-Infant Bonding Related to Body Composition of Lactating Mother in Postpartum Period

A thesis

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Abstract

Background: In the postpartum period, periodontal health condition of lactating mothers with chronic periodontitis adversely effects on their infants growth that depend in their nutrition on breastfeeding only, body composition of lactating mothers and finally mother-infant bonding relation.

Aims of the study: The purpose of this study was to evaluate the effect of periodontal health condition with salivary and milk pro-inflammatory cytokines for lactating mothers in postpartum period on infant's salivary growth hormone and parameters, body composition of lactating mothers and mother-infant bonding status among a sample of mothers and their infants in Diyala Governorate.

Materials and Methods: The selected sample included lactating mothers aged 30-40 years old and their infants with age range 3-12 months. The sample size composed of 90 mothers and their infants who depended only on breastfeeding without any artificial milk or nutrient in order to achieve the purpose of the study. Mothers included two groups according to periodontal health condition study group (45women) with chronic periodontitis and control group (45women) with healthy periodontium.

The study was conducted in four parts, the first one included examination of the periodontal status that was assessed by measuring probing pocket depth and clinical attachment loss also include unstimulated salivary collection from the mother. In addition the salivary pro inflammatory cytokines (interleukin 6 and salivary tumor necrosis factor alpha) were also assessed by using enzyme-linked immunosorbent assay. The body composition of mothers were measured in the second part of the study using body fat/hydration monitor scale in addition weight, height and body mass index. The infant were subjected to anthropometric measurements in the third part include measuring weight, length, and head circumference to assess the growth pattern, in addition to salivary growth hormone level analyses, however the last part

was involved determining of the presence or absence of maternal bonding disorder among the mothers by subjecting them to postpartum bonding questionnaires.

Results: The study demonstrated that salivary and milk's interleukin 6 and tumor necrosis factor alpha levels among study group were higher than control group of mothers with highly significant result. The data reported that salivary growth hormone level was found to be higher in control group of infants than in study group with highly significant statistical difference. The results demonstrate the underweight and short stature infants were present in both study and control group, however the occurrence was higher among study group than the control group. Concerning the head circumference of infants, the infants with developmental problems was found in study and control group. The current study reported that body mass index value for mothers was higher in study than in control group with significant result. The data illustrated that the salivary pro-inflammatory cytokines for mothers correlated negatively to infant's salivary growth hormone in study group also the data reported that 95.56% of the lactating mother in study group with disordered bonding status, the opposite result found for the control group as the normal infant bonding found for 95.65% of them.

Conclusions: Lactating mothers with severe chronic periodontitis have high level of pro-inflammatory cytokines (IL6 and TNF alpha) as a result of chronic periodontitis pathogenesis and that affected on infants growth measurements and salivary growth hormone as a result of breastfeeding regarded as essential nutrition in this study, also affect on mother infant bonding relation by high level of pro-inflammatory cytokines induce high level of stress hormone and that directly affect on mother's behaviors and emotion, in addition to important influence on body composition of lactating mothers by direct effect on fat metabolism and other component of body composition like hydration, bone and muscle. Therefore, periodontal health status in postpartum period in mothers with chronic periodontitis

adversely affected on infant's growth, mother infant- bonding relation and body composition of lactating mothers.