

INTERNATIONAL CONFERENCE ON DENTISTRY & DENTAL MATERIALS

MARCH 15-16, 2023 | (Hotel Crowne Plaza Dubai - Deira)



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Effects of menstrual cycle on the periodontium and it's pro-inflammatory cytokines (IL-1 β , IL-6 and TNF- α) in young women residing in Yaounde - Cameroon

Periodontal disease, which is comprised of gingivitis and periodontitis, are common and chronic infections of the teeth and surrounding tissues. Associated periodontal tissue destruction is mainly induced by proinflammatory cytokines such as interleukin-1beta (IL-1 β), interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF- α). In literature, these are said to vary throughout the menstrual cycle. The aim of this study was to evaluate clinical periodontal parameters and levels of pro-inflammatory markers on gingival crevicular fluid during the menstrual cycle. We carried out a longitudinal prospective study of the above parameters on 25 young women with regular menstrual cycles. For 6 months, we collected samples during the Follicular, Ovulation (OP) and Luteal phases (LP) and analyzed them using the Enzyme-Linked Immuno Sorbent Assay (ELISA) method for the determination of IL-1 β , IL-6 and TNF- α levels. Gingival index was slightly increased in the OP and remained constant in the LP ($p=0.016$). IL-1 β ($p=0.012$), IL-6 ($p=0.002$) and TNF- α ($p=0.015$) levels were statistically significant, with an increase in IL-1 β and IL-6 throughout the menstrual cycle, peaking in the LP. The increase in pro inflammatory cytokines during the menstrual cycle had a slight effect on the gingival tissue, with little gingival inflammation. This study revealed that the effects of the menstrual cycle were more pronounced on these biological markers, which in turn, appeared to have little or no clinical manifestation on the periodontium.

Keywords: periodontium, menstrual cycle, crevicular fluid, TNF- α , IL-1 β , IL-6.

Biography:

Prof. Ama Moor Vicky Jocelyne, is a medical doctor since 18 years, specialized in clinical pathology since 10 years and has received her Ph.D degree in the year 2018 from University of Yaounde 1 in Cameroon. She is working on dyslipidemia occurrence in Cameroon, with an interest in medicinal plants. She is associate Professor in the Department of Biochemistry at the Faculty of Medicine and Biomedical Science, the University of Yaounde 1. She has published more than 60 papers in reputed journals.