Serum placental growth factor, vascular endothelial growth factor, soluble vascular
endothelial growth factor receptor-1 and -2 levels in periodontal disease, and adverse
pregnancy outcomes. Sert T, Kirzioglu FY, Fentooglu O, Aylak F, Mungan T. Source
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Abstract

BACKGROUND:

The aim of this study is the evaluation of levels of serum interleukin (IL)-1β, IL-6, IL-10,
tumor necrosis factor (TNF)-α, vascular endothelial growth factor (VEGF), placental
growth factor (PIGF), and soluble VEGF receptor (sVEGFR)-1 and -2 in the
association between periodontal disease and adverse pregnancy outcomes.

METHODS:

One hundred and nine mothers, who recently gave birth, and 51 women who were not
recently pregnant, aged 18 to 35 years, were included in this study. The mothers were
classified as term birth, preterm birth (PTB), and preterm low birth weight (PLBW) in
respect to their gestational age and baby's birth weight. The birth mothers were
grouped as having gingivitis or periodontitis. The non-pregnant group also included
periodontally healthy patients. Venous blood samples were collected to evaluate serum
IL-1β, IL-6, IL-10, TNF-α, VEGF, PIGF, and sVEGFR-1 and -2 levels.

RESULTS:

Mother's weight, education, and income level were significantly associated with
pregnancy outcomes. Serum levels of IL-1β, TNF-α, IL-6, VEGF, and sVEGFR-1 and -2 showed an increase in significance when related to pregnancy. Whereas in the
PLBW group IL-1β, VEGF, and sVEGFR-2 levels were increased, in the PTB group
sVEGFR-1 levels were increased. Additionally, the patients in the PLBW group with
periodontitis had higher serum levels of IL-1β, VEGF, sVEGFR-2, and IL-1β/IL-10.

CONCLUSION:

The serum levels of IL-1β, VEGF, and sVEGFR-1 and -2 may have a potential effect on
the mechanism of the association between periodontal disease and adverse
pregnancy outcomes.

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