
LOCAL CURRENT PERIODONTAL INFECTION IS POSITIVELY ASSOCIATED WITH WHITE BLOOD CELL COUNT, A MEASURE OF SYSTEMIC INFLAMMATORY RESPONSE: THE ORAL INFECTIONS AND VASCULAR DISEASE EPIDEMIOLOGY STUDY (INVEST).

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Purpose: To investigate the cross-sectional relationship between current periodontal infection, as assessed by clinical probing depth, and white blood cell count (WBC).

Methods: We enrolled 760 subjects (59% f; 62% Hispanic, 21% Black, 17% White) of mean age (\pm SD) 66 ± 8 yrs in INVEST and the Northern Manhattan Stroke Study (NOMASS). Subjects received a clinical periodontal exam and WBC was measured in blood using automated cell counters. Linear regression was utilized in this analysis and adjusted models included: age, gender, race/ethnicity, diabetes, smoking, systolic blood pressure and education.

Results: Probing depth was assessed in up to 192 sites per mouth (mean 106 ± 48). The mean number of sites with probing depth ≥ 4 mm (PD ≥ 4) was 17 ± 21 . Mean WBC was $6.11 \pm 1.91 \times 10^9$ cells/L. As the severity of periodontal infection increased from the first quartile of PD ≥ 4 to the fourth, mean WBC values increased as follows: 5.91, 6.08, 6.21 and 6.28×10^9 cells/L (p for trend = 0.03). This trend, although attenuated, remained after adjustment: 5.95, 6.09, 6.21 and 6.21×10^9 cells/L (p for trend = 0.13) Figure 1. Findings were similar using percent of sites with probing depth ≥ 4 mm as the independent variable.

Conclusion: These data show a cross-sectional relationship between a clinical measure of current periodontal infection and WBC. Because systemic inflammation is believed to contribute to cardiovascular disease risk, this finding is consistent with the hypothesis that localized infections are themselves related to cardiovascular outcomes.

