

Abstract

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Vitamin D Status and Periodontal Disease Among Pregnant Women.

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BACKGROUND: Maternal periodontal disease is found in up to 40% of pregnant women and is associated with adverse pregnancy outcomes. Vitamin D deficiency may play a role in periodontal disease and tooth loss, and insufficient vitamin D status is common among pregnant women. The objective of this study was to examine the relationship between maternal vitamin D status and periodontal disease.

METHODS: A case-control study was conducted. Cases were defined as pregnant women with clinical moderate/severe periodontal disease; controls were pregnant women who were periodontally healthy. Maternal data was chart abstracted and serum was collected between 14-26 weeks' gestation. Serum 25-hydroxyvitamin D (25[OH]D) levels were measured using liquid chromatography - tandem mass spectrometry. Median serum 25(OH)D levels and prevalence of vitamin D insufficiency (defined as <75 nmol/L) were compared between cases and controls. The odds ratio (OR) and 95% confidence interval(CI) for moderate/severe periodontal disease among women with vitamin D insufficiency was calculated using multivariable logistic regression, adjusting for maternal race, season of blood draw and other potential confounders.

RESULTS: 117 cases were compared to 118 controls. Cases had lower median 25(OH)D levels than controls (59 vs. 100 nmol/L, $P < .001$) and were more likely to have vitamin D insufficiency (65% vs. 29%, $P < .001$). The adjusted OR (95%CI) for moderate/severe periodontal disease among women with vitamin D insufficiency was 2.2 (.99-4.5).

CONCLUSION: Vitamin D insufficiency (serum 25(OH)D < 75 nmol/L) is associated with maternal periodontal disease during pregnancy. Vitamin D supplementation represents a potential therapeutic strategy to improve maternal oral health.

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