

Periodontal Disease and Breast Cancer—Response

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In our recent article, we found that among the postmenopausal women in the Women's Health Initiative (WHI) Observational Study (OS), periodontal disease was associated with increased risk of breast cancer, particularly among smokers (1). As we indicated in our article, there are a number of potential mechanisms that could explain this association including inflammation. It is known that periodontal disease is associated with chronic systemic inflammation and increased C-reactive protein (2, 3).

Dr. Grant (4) suggests that vitamin D status, which can impact systemic inflammation, might explain the association between periodontal disease and increased risk of breast cancer. Although there is some evidence to suggest an association between low 25-hydroxyvitamin D (25[OH]D) concentrations and increased periodontal disease, in the Buffalo Osteoporosis and Periodontal

Disease Study (5), an ancillary study of periodontal disease in the WHI OS, no association was observed between blood 25(OH)D concentrations and incident periodontal disease in the 5-year follow-up of study participants (6). The evidence of vitamin D as a risk factor for breast cancer in WHI OS is weak (7–9). No association was observed between latitude of clinic center and breast cancer incidence in the WHI OS (7). In the randomized trial of vitamin D and calcium in the WHI, neither the vitamin D and calcium intervention (8) nor a baseline measure of serum 25-hydroxyvitamin D (9) were associated with the risk of breast cancer. On the basis of this evidence, it seems unlikely that vitamin D status would be a strong confounder of our observed association.

Identification of mechanism is of course of importance in understanding and utilizing epidemiologic findings for potential prevention. Other studies with more detailed biologic data regarding exposures (e.g., of periodontal disease including periodontal pathogens, changes in oral bone, and blood measures of inflammation) and of tumor characteristics are required to better understand the mechanism of our observations.

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Disclosure of Potential Conflicts of Interest

No potential conflicts of interest were disclosed.

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