Abstract

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Vitamin D and breast cancer recurrence in the Women's Healthy Eating and Living (WHEL) Study.

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BACKGROUND: There is a paucity of research evaluating the relation between vitamin D and recurrence of breast cancer after treatment.

OBJECTIVE: This study was designed to evaluate the associations between circulating concentrations of 25-hydroxyvitamin D [25(OH)D] and dietary, supplemental, and total intake of vitamin D and recurrent or new breast cancer events within the Women's Healthy Eating and Living (WHEL) Study.

DESIGN: A prospective cohort study design (n = 3085) was used to evaluate the relation between dietary, supplemental, and total vitamin D intake and recurrent breast cancer, and a nested case-control study with 512 matched pairs was used for analysis of the association between 25(OH)D and breast cancer recurrence.

RESULTS: No relation between 25(OH)D and breast cancer recurrence was observed. Compared with women with serum concentrations of 25(OH)D ≥30 ng/mL, adjusted odds ratios (95% CI) for breast cancer recurrence were 1.14 (0.57, 2.31) for those with concentrations <10 ng/mL, 1.00 (0.68-1.48) for concentrations ≥10 and <20 ng/mL, and 1.05 (0.76, 1.47) for concentrations ≥20 and < 30 ng/mL. No significant associations were observed when analyses were stratified by pre- and postmenopausal status or for local, regional, or distant recurrence or death. Vitamin D intake was not related to breast cancer recurrence overall, although for premenopausal women there was a significant inverse association between dietary vitamin D intake and recurrence (P for trend = 0.02).

CONCLUSION: These results do not provide support for a relation between concentrations of 25(OH)D after treatment and the recurrence of breast cancer. This trial is registered at clinicaltrials.gov for the WHEL Study as NCT00003787.

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