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Postdiagnosis supplement use and breast cancer prognosis in the After Breast Cancer Pooling Project.

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Abstract

Vitamin supplement use after breast cancer diagnosis is common, but little is known about long-term effects on recurrence and survival. We examined postdiagnosis supplement use and risk of death or recurrence in the After Breast Cancer Pooling Project, a consortium of four cohorts of 12,019 breast cancer survivors from the United States and China. Post-treatment supplement use (vitamins A, B, C, D, E, and multivitamins) was assessed 1-5 years postdiagnosis. Associations with risk of recurrence, breast cancer-specific mortality, or total mortality were analyzed in Cox proportional hazards models separately by cohort. Individual cohort results were combined using random effects meta-analysis. Interactions with smoking, treatment, and hormonal status were examined. **In multivariate models, vitamin E was associated with a decreased risk of recurrence** (RR: 0.88; 95 % CI 0.79-0.99), **and vitamin C with decreased risk of death** (RR: 0.81; 95 % CI 0.72-0.92). However, when supplements were mutually adjusted, all associations were attenuated. There were no statistically significant associations with breast cancer mortality. **The use of antioxidant supplements (multivitamins, vitamin C, or E) was not associated with recurrence, but was associated with a 16 % decreased risk of death** (95 % CI 0.72-0.99). In addition, **vitamin D was associated with decreased risk of recurrence among ER positive, but not ER negative tumors** (p-interaction = 0.01). In this large consortium of breast cancer survivors, post-treatment use of vitamin supplements was not associated with increased risk of recurrence or death. **Post-treatment use of antioxidant supplements was associated with improved survival,** but the associations with individual supplement were difficult to determine. Stratification by ER status and considering antioxidants as a group may be more clinically relevant when evaluating associations with cancer risk and mortality.