Cruciferous vegetable consumption linked to improved breast cancer survival rates

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Eating cruciferous vegetables after breast cancer diagnosis was associated with improved survival among Chinese women, according to results presented at the AACR Annual Meeting 2012, held here March 31 - April 4.

"Breast cancer survivors can follow the general nutritional guidelines of eating vegetables daily and may consider increasing intake of cruciferous vegetables, such as greens, cabbage, cauliflower and broccoli, as part of a healthy diet," said Sarah J. Nechuta, M.P.H., Ph.D., a postdoctoral research fellow at Vanderbilt University in Nashville, Tenn.

She and her colleagues investigated the role of cruciferous vegetables in breast cancer survival in the Shanghai Breast Cancer Survival Study, a prospective study of 4,886 Chinese breast cancer survivors diagnosed with stage 1 to stage 4 breast cancer from 2002 to 2006.

After adjusting for demographics, clinical characteristics and lifestyle factors, the researchers found cruciferous vegetable intake during the first 36 months after breast cancer diagnosis was associated with a reduced risk for total mortality, breast cancer-specific mortality and recurrence in a dose–response pattern. Across increasing quartiles of cruciferous vegetable consumption, risk for total mortality decreased by 27 percent to 62 percent, risk for breast cancer-specific mortality decreased by 22 percent to 62 percent, and risk for recurrence decreased by 21 percent to 35 percent.

Nechuta noted that cruciferous vegetable consumption habits differ between China and the United States and suggested this fact be considered when generalizing these results to U.S. breast cancer survivors.

"Commonly consumed cruciferous vegetables in China include turnips, Chinese cabbage/bok choy and greens, while broccoli and brussels sprouts are the more commonly consumed cruciferous vegetables in the United States and other Western countries," she said. "Second, the amount of intake among Chinese women is much higher than that of U.S. women. The level of bioactive compounds such as isothiocyanates and indoles, proposed to play a role in the anticancer effects of cruciferous vegetables, depend on both the amount and type of cruciferous vegetables consumed."

She suggested that future studies with direct measurements of bioactive compounds such as isothiocyanates and host factors that influence the effects of these biological compounds be conducted to better understand the association of cruciferous vegetable intake with breast cancer outcomes.

More information: Cruciferous Vegetable Intake After Diagnosis of Breast Cancer and Survival: a Report From the Shanghai Breast Cancer Survival Study

Abstract

Background: Cruciferous vegetables are a major source of glucosinolate-derived bioactive compounds, such as isothiocyanates and indoles, which have been shown in animal studies and in vitro to inhibit cancer growth and progression. However, little is known regarding the role of cruciferous vegetables in breast cancer prognosis. Using resources from the Shanghai Breast Cancer Survival, a large population-based prospective cohort study of Chinese breast cancer survivors, we

evaluated the association of cruciferous vegetable consumption after cancer diagnosis and breast cancer outcomes with repeated dietary assessments after diagnosis.
Methods: Women with incident breast cancer aged 20-75 years were recruited within 6-months of diagnosis during 2002-2006. In-person baseline interviews collected detailed data on clinic characteristics, socio-demographics, and lifestyle factors. Medical records were used to verify clinical data. The cohort has been followed-up by a combination of in-person follow-up surveys and record linkage to the Shanghai Vital Statistics Registry. Cruciferous vegetable intake (g/day) was reassessed at 18- and 36-months. Cox regression models were used to derive hazard ratios (HR) and 95% confidence intervals (CIs) for the associations of cruciferous vegetables and breast cancer outcomes. Analyses include 4,886 women with stage I-IV breast cancer.
Results: After a median follow-up of 5.2 years, 587 deaths (496 breast cancer deaths) and 615 recurrences occurred. Cruciferous vegetable intake increased after diagnosis (mean (SD)=62.5 (44.5) at 6-months and 133.8 (93.3) at 36-months). After adjustment for socio-demographics, clinical characteristics including treatment and tumor characteristics, and lifestyle factors, cruciferous vegetable intake was associated with improved breast cancer survival in a dose-response pattern (P for trend
Conclusion: Cruciferous vegetable intake after breast cancer diagnosis was associated with improved prognosis among Chinese women.

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