Alcohol Consumption Before and After Breast Cancer Diagnosis: Associations With Survival From Breast Cancer, Cardiovascular Disease, and Other Causes

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Abstract

Purpose Alcohol intake is associated with increased risk of breast cancer. In contrast, the relation between alcohol consumption and breast cancer survival is less clear.

Patients And methods We assessed pre- and postdiagnostic alcohol intake in a cohort of 22,890 women with incident invasive breast cancer who were residents of Wisconsin, Massachusetts, or New Hampshire and diagnosed from 1985 to 2006 at ages 20 to 79 years. All women reported on prediagnostic intake; a subsample of 4,881 reported on postdiagnostic intake.

Results During a median follow-up of 11.3 years from diagnosis, 7,780 deaths occurred, including 3,484 resulting from breast cancer. Hazard ratios (HR) and 95% CIs were estimated. Based on a quadratic analysis, moderate alcohol consumption before diagnosis was modestly

associated with disease-specific survival (compared with nondrinkers, HR = 0.93 [95% CI, 0.85 to 1.02], 0.85 [95% CI, 0.75 to 0.95], 0.88 [95% CI, 0.75 to 1.02], and 0.89 [95% CI, 0.77 to 1.04] for two or more, three to six, seven to nine, and ≥ 10 drinks/wk, respectively). Alcohol consumption after diagnosis was not associated with disease-specific survival (compared with nondrinkers, HR = 0.88 [95% CI, 0.61 to 1.27], 0.80 [95% CI, 0.49 to 1.32], 1.01 [95% CI, 0.55 to 1.87], and 0.83 [95% CI, 0.45 to 1.54] for two or more, three to six, seven to nine, and ≥ 10 drinks/wk, respectively). Results did not vary by beverage type. Women consuming moderate levels of alcohol, either before or after diagnosis, experienced better cardiovascular and overall survival than nondrinkers.

Conclusion Overall alcohol consumption before diagnosis was not associated with disease-specific survival, but we found a suggestion favoring moderate consumption. There was no evidence for an association with postdiagnosis alcohol intake and breast cancer survival. This study, however, does provide support for a benefit of limited alcohol intake for cardiovascular and overall survival in women with breast cancer.

Breast Cancer: Alcohol May Impact Survival

By Cole Petrochko, Staff Writer, MedPage Today
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Action Points

- Pre-breast-cancer-diagnosis overall alcohol consumption was not associated with disease-specific survival, but there was a suggestion favoring moderate consumption.
- Alcohol consumption after diagnosis was not associated with disease-specific survival.

Women who were moderate drinkers before being diagnosed with breast cancer appear to have a slight survival edge.

Compared with nondrinking controls, women who consumed three to six drinks weekly had a significant protective effect on breast cancer survival (HR 0.85, 95% CI 0.75 to 0.95), according to Polly Newcomb, PhD, of the Fred Hutchinson Cancer Research Center in Seattle, Wash., and colleagues.

Post-diagnosis drinking did not affect disease-related survival, though modest alcohol consumption both before and after diagnosis was associated with improved cardiovascular and overall survival outcomes, they wrote online in the *Journal of Clinical Oncology*.

In previous studies women's alcohol intake has been tied to increased risk of breast cancer, with "incontrovertible" evidence "that even moderate alcohol consumption increases risk of breast cancer; for each drink increase in average daily alcohol consumption, the relative risk of breast cancer increases by 7%," they wrote.

They also noted that prior research on disease-related survival and drinking has been inconclusive.

Newcomb and colleagues conducted a cohort study on pre- and post-diagnosis alcohol consumption in a population of 22,890 women with incident invasive breast cancer in Wisconsin, Massachusetts, and New Hampshire. Post-diagnosis alcohol intake was measured through a subsample of 4,881 patients.

Participants completed a baseline phone interview on lifetime alcohol consumption, amount and frequency of consumption, reproductive and menstrual history, physical activity, height, weight, oral contraceptive and postmenopausal hormone use, and personal and family history of cancer. Information on participant clinical data was reviewed through state cancer registries.

A second survey was distributed to a subpopulation of survivors that measured alcohol consumption after diagnosis.

Causes of death were classified as breast cancer, cardiovascular disease, or any cause.

Survival was measured to date of death or until the end of the study in December 2009, while consumption was averaged weekly.

Median duration of follow-up post-diagnosis was 11.3 years. There were 7,780 deaths, roughly half of which were attributed to breast cancer (3,484), 1,531 of which were tied to cardiovascular disease, and 2,765 due to other causes.

Roughly one fifth of participants reported that they did not drink (19%), while half consumed one to two drinks weekly, 16% consumed three to six drinks a week, 7% consumed seven to nine drinks a week, and 8% consumed 10 or more drinks weekly.

"Compared with those who abstained form alcohol before diagnosis, drinkers were younger, of lower body mass index, higher education, and were more likely to have smoked and used hormones," researchers noted.

Similarly, moderate drinking "suggested a U-shaped pattern with increasing alcohol consumption" in relation to outcomes for cardiovascular disease and all-cause mortality, with moderate drinking most strongly associated with better survival.

Among the women surveyed post diagnosis, 23% never drank, 46% drank one or two drinks weekly, 16% drank three to six drinks, 6% consumed seven to nine drinks, and 9% consumed 10 or more drinks a week.

There was no association with survival in women who drank after cancer diagnosis compared with those who did not drink, though there was a significant improvement in women who drank moderate amounts in survival from all-cause mortality (P=0.04) and a trend for improved survival from cardiovascular disease-related mortality (P=0.07).

"This research suggests a U-shaped association between alcohol intake before breast cancer diagnosis and modestly better breast cancer survival," they concluded, emphasizing that this association was not seen in post-diagnosis drinkers but that moderate consumption did have a positive impact on cardiovascular disease and all cause-related mortalities.

The authors noted that the study was limited by absent hormone receptor status and breast cancer recurrence or recurrence of second primaries.

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