

Bilateral Mastectomy and Breast Cancer Mortality

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Abstract

Background: The benefit of performing bilateral mastectomy for women with unilateral breast cancer on reducing deaths from breast cancer has not been shown in an observational setting. We sought to estimate the 20-year cumulative risk of breast cancer mortality among women with stage 0 to stage III unilateral breast cancer according to the type of initial surgery performed.

Methods: We identified 661,270 women with unilateral breast cancer in the SEER 17 registry database diagnosed from 2000 to 2019. From these, we generated three closely matched cohorts according to type of surgery performed (lumpectomy, unilateral mastectomy and bilateral mastectomy). We generated three similar cohorts of equal size ($n = 36,028$) using 1:1:1 propensity score matching according to surgical approach. Women were followed for up to 20 years for contralateral breast cancer and for breast cancer mortality. We compared the 20-year cumulative risk of contralateral breast cancer and breast cancer mortality by surgical approach.

Results: There were 766 contralateral breast cancers observed in the lumpectomy group, 728 contralateral breast cancers in the unilateral mastectomy group, and 97 contralateral cancers in the bilateral mastectomy group. The 20-year risk of contralateral breast cancer was 6.9% in the lumpectomy/unilateral mastectomy group. The cumulative breast cancer mortality was 32.1% at 15 years after developing a contralateral cancer and was 14.5% for those who did not develop a contralateral cancer (HR, 4.00; 95% CI, 3.52-4.54, using contralateral breast cancer as a time dependent covariate). There were 3,077 deaths from breast cancer in the lumpectomy group, 3,269 deaths from breast cancer in the unilateral mastectomy group, and 3,062 deaths from breast cancer in the bilateral mastectomy group.

Conclusions and Relevance: The risk of dying of breast cancer increases significantly after experiencing contralateral breast cancer. Women with breast cancer treated with bilateral mastectomy had a greatly diminished risk of contralateral breast cancer but experienced similar mortality rates as patients treated with lumpectomy or unilateral mastectomy.