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Breast

Survival After Breast Conservation vs Mastectomy Adjusted for Comorbidity and Socioeconomic Status. A Swedish National 6-Year Follow-up of 48,986 Women

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IMPORTANCE

Cohort studies show better survival after breast-conserving surgery (BCS) with postoperative radiotherapy (RT) than after mastectomy (Mx) without RT. It remains unclear whether this is an independent effect or a consequence of selection bias.

OBJECTIVE

To determine whether the reported survival benefit of breast conservation is eliminated by adjustment for two pivotal confounders, comorbidity and socioeconomic status.

DESIGN, SETTING, AND PARTICIPANTS

Cohort study using prospectively collected national data. Swedish public health care; nationwide clinical data from the National Breast Cancer Quality Register, comorbidity data from Patient Registers at the National Board of Health and Welfare, and individual-level education and income data from Statistics Sweden. The cohort included all women diagnosed as having primary invasive T1-2 N0-2 breast cancer and undergoing breast surgery in Sweden from 2008 to 2017. Data were analysed between 19 August 2020, and 12 November 2020.

EXPOSURES

Locoregional treatment comparing 3 groups: breast-conserving surgery with radiotherapy (BCS+RT), mastectomy without radiotherapy (Mx-RT), and mastectomy with radiotherapy (Mx+RT).

MAIN OUTCOMES AND MEASURES

Overall survival (OS) and breast cancer-specific survival (BCSS). Main outcomes were determined before initiation of data retrieval.

RESULTS

Among 48,986 women, 29,367 (59.9%) had BCS+RT, 12,413 (25.3%) had Mx-RT, and 7,206 (14.7%) had Mx+RT. Median follow-up was 6.28 years (range, 0.01-11.70). All-cause death occurred in 6,573 cases, with death caused by breast cancer in 2,313 cases; 5-year OS was 91.1% (95% CI, 90.8-91.3) and BCSS was 96.3% (95% CI, 96.1-96.4). Apart from expected differences in clinical parameters, women receiving Mx-RT were older, had a lower level of education, and lower income. Both Mx groups had a higher comorbidity burden irrespective of RT. After stepwise adjustment for all covariates, OS and BCSS were significantly worse after Mx-RT (hazard ratio [HR], 1.79; 95% CI, 1.66-1.92 and HR, 1.66; 95% CI, 1.45-1.90, respectively) and Mx+RT (HR, 1.24; 95% CI, 1.13-1.37 and HR, 1.26; 95% CI, 1.08-1.46, respectively) than after BCS+RT.

CONCLUSIONS AND RELEVANCE

Despite adjustment for previously unmeasured confounders, BCS+RT yielded better survival than Mx irrespective of RT. If both interventions are valid options, mastectomy should not be regarded as equal to breast conservation.

