Improved Survival After Primary Tumor Surgery in Metastatic Breast Cancer: A Propensity-adjusted, Population-based SEER Trend Analysis

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BACKGROUND
There is ongoing debate about nonpalliative primary tumor surgery in metastatic breast cancer patients. This issue has become even more relevant with the introduction of increasingly sensitive imaging modalities.

METHODS
Metastatic breast cancer patients were identified in the SEER registry between 1998 and 2009. The effect of primary tumor surgery on overall and cancer-specific mortality using risk-adjusted Cox proportional hazard regression modeling and stratified propensity score matching was assessed.

RESULTS
Overall, 16,247 women with metastatic breast cancer were included. Of those 7600 women underwent primary tumor surgery although 8647 did not have any surgery at all. Primary tumor surgery decreased from 62.0% in 1998 to 39.1% in 2009 (P < 0.001). Primary tumor surgery was associated with decreased overall mortality (hazard ratio (HR) = 0.53, 95% CI 0.50-0.55, P < 0.001) and cancer-specific mortality (HR = 0.51, 95% CI 0.48-0.54, P < 0.001) in the propensity score-matched model. The benefit of primary tumor surgery increased from 1998 to 2009 for overall mortality (1998: HR = 0.72, 95% CI 0.59-0.89, 2009: HR = 0.42, 95% CI 0.35-0.50) and cancer-specific mortality (1998: HR = 0.72, 95% CI 0.58-0.89, 2009: HR = 0.40, 95% CI 0.33-0.48).

CONCLUSIONS
The present study—the first population-based analysis using propensity score methods—provides evidence of a favorable impact of primary tumor surgery on mortality in metastatic breast cancer patients. Most importantly, the benefit of primary tumor surgery increased over time from 1998 to 2009. Although the final results of ongoing randomized studies are awaited, currently available evidence should be discussed with metastatic breast cancer patients.
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