

Trends in Local Therapy Utilization and Cost for Early-Stage Breast Cancer in Older American Women: Implications for Population Health Management

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BACKGROUND: Older women with early-stage disease comprise the most rapidly growing breast cancer demographic, yet it is not known which local therapy strategies are most favored by this population in the current era. Understanding utilization trends and cost of local therapy is important for informing design of bundled payment models as payers migrate away from fee-for-service. We therefore utilized the SEER-Medicare database to determine patterns of care and costs for local therapy among older women with breast cancer.

HYPOTHESIS: Trends in local strategy for breast cancer among elderly patients in the United States likely tended towards breast conservation during the last decade. Cost differences among the various options are significant.

METHODS: Treatment strategy and covariables were determined in 55,327 women age \geq 66 with Tis-T2 N0-1 M0 breast cancer who underwent local therapy between 2000 and 2008. Trends in local therapy were characterized using Joinpoint. Polychotomous logistic regression determined predictors of local therapy. Median aggregate cost over the first 24 months after diagnosis was determined from Medicare claims through 2010 and reported in 2014 dollars.

RESULTS: Median age was 75. Local therapy distribution was as follows: 27,896 (50.3%) lumpectomy with external beam radiation; 18,356 (33.1%) mastectomy alone; 6,159 (11.1%) lumpectomy alone; 1,488 (2.7%) mastectomy with reconstruction; and 1,455 (2.6%) lumpectomy with brachytherapy. Mastectomy alone declined from 39.0% in 2000 to 28.2% in 2008 while use of breast conserving local therapies rose from 58.7% to 68.2%. Mastectomy with reconstruction was more common among the youngest, healthiest patients, whereas mastectomy alone was more common among patients living in rural, low income regions. By 2008, cost was \$36,749 for lumpectomy with brachytherapy, \$35,030 for mastectomy with reconstruction, \$31,388 for lumpectomy with external beam radiation, \$21,993 for mastectomy alone, and \$19,287 for lumpectomy alone. We conclude that the use of mastectomy alone in older women declined in favor of breast conserving strategies between 2000 and 2008. Using these cost estimates, price points for local therapy bundles can be constructed to incentivize treatment strategies which confer the highest value.