Effectiveness of Digital Breast Tomosynthesis Compared With Digital Mammography Outcomes Analysis from 3 Years of Breast Cancer Screening

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JAMA Oncology, Published online February 18, 2016.
doi:10.1001/jamaoncol.2015.5536

Objective

A new study of breast cancer screening published online by JAMA Oncology suggests digital breast tomosynthesis (DBT) outcomes were sustainable with significant reduction in patient recall, increasing cancer cases per recalled patients and a decline in interval cancers.

Materials and Methods

A total of 44,468 screening examinations with 23,958 patients over a four year time period. The study began on September 1, 2010 and concluded on September 30, 2014 (excluding September 2011, which was the transition period from DM to DBT). Differences in screening outcomes between each DBT year and the DM year, as well as between groups of women with only 1, 2, or 3 DBT screenings, were assessed, and the odds of recall adjusted for age, race/ethnicity, breast density, and prior mammograms were estimated. Data analysis was performed between February 16 and October 26, 2015.

Findings

Recall rates rose slightly for years 1 to 3 of DBT (88, 90, and 92 per 1000 screened, respectively) but remained significantly reduced compared with the DM0 rate of 104 per 1000 screened. Reported as odds ratios (95% CIs), the findings were DM vs DBT1, 0.83; DM vs DBT2, 0.85 and DM vs DBT3, 0.87. The cancer cases per recalled patients continued to rise from DM0 rate of 4.4% to 6.2%, 6.5% and 6.7% for years 1 to 3 of DBT, respectively. Outcomes assessed for the most recent screening for individual women undergoing only 1, 2, or 3 DBT screenings during the study period demonstrated decreasing recall rates of 130, 78, and 59 per 1000 screened, respectively. Interval cancer rates, determined using available follow-up data, decreased from 0.7 per 1000 women screened with the use of DM to 0.5 per 1000 screened with the use of DBT1.

Conclusion

Digital breast tomosynthesis screening outcomes are sustainable, with significant recall reduction, increasing cancer cases per recalled patients, and a decline in interval cancers.

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