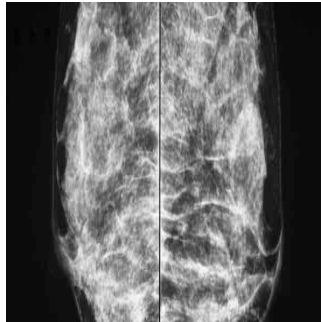

Combining Tomosynthesis and Mammography is Cost-Effective



A new study has found that adding tomosynthesis to biennial digital mammography screening for women with dense breasts may improve breast cancer detection at a reasonable cost relative to biennial mammography screening alone. The incremental cost per quality-adjusted life year (QALY) gained by adding tomosynthesis to mammography screening was \$53,893, according to the research published in the journal *Radiology*.

The study, conducted by researchers at University of Washington (WA, USA), assessed the comparative effectiveness of combined biennial digital mammography and tomosynthesis screening, compared to biennial digital mammography screening alone, among women with dense breasts.

The effectiveness of the combined screening is attributable to the decrease in false-positive results. An additional 0.5 deaths were averted and 405 false-positives were avoided per 1,000 women after 12 rounds of screening, the researchers said, noting that combined screening remained cost-effective (less than \$100,000 per QALY gained).

"Our study suggests that adding tomosynthesis at the time of mammography screening has the potential to decrease the number of unnecessary diagnostic workups and invasive procedures that result from false-positive findings," said lead author Christoph I. Lee, MD, assistant professor in the Departments of Radiology Health Services at the University of Washington (WA, USA).

While mammography is the only screening test proven to reduce mortality from breast cancer, mammo is less accurate in women with dense breasts for whom cancers may be masked by overlapping breast tissue. MRI (magnetic resonance imaging) is the most sensitive breast imaging technique. Aside from being expensive, MRI requires intravenous contrast injection and is currently reserved for screening women at high risk for breast cancer, Dr. Lee pointed out. "Digital breast tomosynthesis, in contrast to MRI, may offer operational and ease-of-use advantages since it is an integrated part of newer generation mammography units."

Tomosynthesis Provides 3D Image of the Breast

Tomosynthesis, like mammography, also uses ionising radiation to generate images of the breast. However, unlike conventional mammography, tomosynthesis allows for three-dimensional (3D) reconstruction of the breast tissue, which can then be viewed as sequential slices through the breast. Data show that digital breast tomosynthesis has shown promise at improving breast cancer detection in women with dense breast tissue.

In the UW study, Dr. Lee and colleagues utilised a breast cancer simulation model to estimate the comparative clinical effectiveness and cost-effectiveness of biennial screening with both digital mammography and tomosynthesis compared to digital mammography alone. The researchers evaluated U.S. women aged 50 to 74 years with dense breasts, using data and metrics from the National Cancer Institute's Breast Cancer Surveillance Consortium, Medicare reimbursement rates and medical literature.

"Our analysis, using currently available data, provides women, physicians, payers and policymakers in the U.S. with much needed information regarding the comparative effectiveness of combined mammography and tomosynthesis screening relative to mammography screening alone," explained Dr. Lee. Given that nearly half of the U.S. screening population has dense breasts, the finding should help to encourage more women to consider supplemental screening beyond conventional mammography.

Source: RSNA

Image Credit: Wikimedia Commons

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