Integration of 3D digital mammography with tomosynthesis for population breastcancer screening (STORM): a prospective comparison study

Ciatto S (posthumous), Houssami N, Bernardi D, Caumo F, Macaskill P. et al Lancet Oncology.2013 Apr; doi:10.1016/S0140-6736(08)61345-8

Objective

To evaluate the effect of the addition of tomosynthesis to conventional 2D mammography in population breast-cancer screening.

Materials and Methods

Participants had a digital mammogram using the Selenia[®] Dimensions[®] system from Hologic with integrated 2D and 3D mammography performed in the combo mode.

Results

Based on 7294 screenings:

| | Number of Cancers | Cancer Detection Rate | False Positive | False Positive Rate, % |
|------------------------|-------------------|-----------------------|----------------|------------------------|
| 2D mammography | 39 | 5.3 / 1000 screens | 322 | 4.4% |
| 2D plus 3D mammography | 59 | 8.1 / 1000 screens | 254 | 3.5% |

Cancer detection increased 51% across all ages and breast densities for integrated 2D and 3D mammography compared to 2D mammography. The authors estimated that false positive recalls could have been reduced by 17% without decreasing the cancer detection rates.

Conclusion

Integrated 2D and 3D mammography improves breast-cancer detection and has the potential to reduce false positive recalls.

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