

Potamkin Prize Winner Shares Results of Landmark MRI Trial

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It is well known that traditional mammogram screening is less sensitive in detecting breast cancer in women with radiographically dense breasts. It is also believed that the increased density is an independent risk factor that increases a women's risk of breast cancer.


Over the last decade there has been grassroots advocacy to increase the public awareness of the challenges that women with radiographically dense breasts face with traditional screening and to empower women to seek supplemental screening. Although the traditional approach to supplemental screening had been whole breast ultrasound, there have been multiple studies that have shown that MRI detects significantly more breast cancer than ultrasound in women with dense breasts. A prior ECOG-ACRIN study (ACRIN 6666) showed supplemental MRI detected more than twice the number of cancer than supplemental ultrasound.

The high cost of MRI has traditionally relegated it to use in women extremely high risk. Christiana Kuhl, a radiologist in Germany, challenged this traditional dogma by introducing a short MRI examination (abbreviated breast MRI or ABMRI) in an effort to reduce cost and expand its use into a broader population of women. Her early results were promising. On

that basis of these early results, the cancer cooperative group, ECOG-ACRIN, teamed up with Dr. Kuhl to perform a study (EA1141) comparing an abbreviated breast MRI exam with tomosynthesis, also known as 3D mammography, in the detection of cancer in women with radiographically dense breasts. We chose to compare to tomosynthesis as it is more sensitive than traditional mammography and is quickly becoming the standard of care in the US.

randomized to prevent bias related to knowledge of the other exam. The study population included mostly women with heterogeneously dense breast at a 5 to 1 ratio to women with extremely dense breasts. The study was designed to detect differences in invasive cancer detection, wanting to minimize the impact of overdiagnosis on the results.

Abbreviated MRI detected 17 invasive cancers compared to 7 for tomosynthesis. All 7 of the cancers detected on tomosynthesis were detected by ABMRI. However, there was a downside in that ABMRI resulted in 107 biopsies compared to 29 for tomosynthesis. Even with the increased cancer detection, the percentage of positive biopsies was approximately 31 percent for tomosynthesis and 20 percent for ABMRI.

The ECOG-ACRIN trial offers well controlled multicenter data that clearly shows ABMRI is an effective screening test for women with radiographically dense breasts, resulting in almost 2 and half times more cancers detected at the cost of almost 4 times the number of biopsies. There are many unanswered questions remaining including whether screening intervals may be extended with ABMRI due to the high sensitivity and what the impact of the additional cancers detected is on cancer mortality. 



Abbreviated MRI is an effective screening test for women with radiographically dense breasts, resulting in almost **two and half times more cancers detected.**



The study included 1444 women across the North America and Germany with heterogeneously dense or extremely dense breast who underwent tomosynthesis and ABMRI screening in parallel, with the order of the examinations

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