Multi-Centre Screening Study Shows Benefits of Breast MRI

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In the first multi-centre larger study across the United States, Canada and Germany, researchers have shown MRI (magnetic resonance imaging) can improve the detection of clinically and mammographically hidden cancers in the opposite breast of women recently diagnosed with unilateral breast cancer through mammography and clinical breast examination (CBE).

"It is our hope the study's findings will lead to more patient benefits, in specific cases, to help optimize cancer therapy, and to additionally inform discussions about surgical treatment options," says Dr. Petrina Causer, Sunnybrook radiologist and lead investigator for the only Canadian centre in the study, led by the American College of Radiology Imaging Network, and published in this week's New England Journal of Medicine.

If cancer is detected in the opposite breast by MRI at the time of initial diagnosis of unilateral breast cancer through mammography and CBE, the patient could undergo a single round of cancer therapy bilaterally instead of receiving a separate second round if cancer is detected in the opposite breast after initial diagnosis. Positive or negative findings from MRI after thorough CBE and mammography, will also help augment discussions about the relative value of bilateral and unilateral surgical options.

A total of 1007 women 18 years or older participated in the study. Participants had received a diagnosis of unilateral breast cancer through mammography and CBE within 60 days before the study MRI was performed. Participants underwent dynamic, contrast-enhanced breast MRI. Study findings indicated MRI detected biopsy-proven tumours in the opposite breast of 30 of the 969 eligible participants, for a diagnostic yield of MRI, after negative findings from mammographic and clinical breast examination, of 3.1 per cent.

MRI captures three-dimensional images of the breast and is performed without radiation and with minimal discomfort to the patient. Contrast-enhanced MRI provides physiological advantages in making lesions more visually conspicuous due to contrast enhancement. Pre-contrast images of the patient's breast are first taken. A dye or contrast agent is then administered to the patient and a series of sequential post-contrast images are captured. Overlay of pre-contrast and post-contrast images is then performed to produce the contrast enhancement needed to analyze the breast for possible lesions.

This study was funded by the National Cancer Institute.

About Sunnybrook Health Sciences Centre and Odette Cancer Centre
Sunnybrook Health Sciences Centre is transforming health care through the dedication of its more than 10,000 staff members who provide compassionate and innovative patient focused care.

Odette Cancer Centre (TSRCC) at Sunnybrook is one of North America's largest and leading comprehensive cancer centres providing care to over 10,000 new patients every year. TSRCC offers a full range of outpatient and inpatient treatment and supportive care programs, is a Cancer Care Ontario partner and is fully affiliated with the University of Toronto.

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