

## NEWS REPORT

Breast MRI useful in combination with mammography for select patients

By Kara A. Nyberg, PhD

December 17, 2004 — Three-dimensional (3-D), high resolution breast magnetic resonance imaging (MRI) is highly sensitive and moderately specific in identifying malignant and nonmalignant lesions, according to a prospective study published recently in the *Journal of the American Medical Association*.

Responding to the increasing use of breast MRI for breast cancer evaluation, the International Breast Magnetic Resonance Consortium conducted a large-scale, multicenter investigation to determine the accuracy of 3-D and dynamic MRI in conjunction with mammography for assessing breast lesions.

According to David A. Bluemke, MD, PhD, lead investigator at Johns Hopkins University Medical Center, in Baltimore, Maryland, MRI is an expensive test. "Rather than do MRIs on every patient, we expected the study to tell us how to intelligently use the test for which patients," he told Clinical Care Options.

Patients with clinically suspicious or mammographically identified breast lesions at 14 university hospitals in North America and Europe were enrolled in the trial. Approximately half of the 821 participating patients had malignant lesions detected by biopsy, including ductal carcinoma in situ and invasive cancer.

The sensitivity of high-resolution 3-D MRI was 88.1%, with 356 of 404 lesions correctly identified as malignant (95% confidence interval [CI]: 84.6%-91.1%). Specificity was 67.4%, with only 281 of 417 lesions correctly identified as nonmalignant, (95% CI: 62.7%-71.9%).

Dynamic MRI performed on a subset of 345 patients with focal lesions yielded statistically lower sensitivity and specificity values than 3-D MRI ( $P < .001$ ).

Although the positive predictive value of 3-D MRI was greater than that of mammography (72.4% vs 52.8%, respectively), the investigators speculate that breast MRI will most likely be used in conjunction with mammography rather than as a replacement for the technique.

MRI accuracy was not substantially affected by breast density, menopausal status, or tumor histology. "The study provides good justification for our subsequent studies that are evaluating patients who are at high risk either due to genetic or familial factors. These patients are frequently younger, with dense breasts that are difficult to evaluate with a mammogram."

#### Reference

Bluemke DA, Gatsonis CA, Chen MH, et al. Magnetic resonance imaging of the breast prior to biopsy. *JAMA*. 2004;292(22):2735-2742.

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