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## **RSNA 2011: BSGI/MBI Effective for Detecting Breast Cancer In Dense and Non-Dense Breasts**



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Findings presented during the RSNA have shown that unlike mammography, Breast-Specific Gamma Imaging (BSGI), also known as Molecular Breast Imaging (MBI), is as effective in detecting breast cancer in women with dense and non-dense breasts.

“Dense breast tissue is extremely common, occurring in 50 percent of pre-menopausal and 40 percent of post-menopausal women, and is a strong risk factor for developing breast cancer,” said Rachel Brem, M.D., first author of this study from The George Washington University Medical Center, Washington, D.C. “However, mammography is far less effective in women with dense breasts, missing 35 percent to 45 percent of breast cancers in these women.” Mammography in women with dense breasts is limited and necessitates additional imaging modalities that are not impacted by breast density.

“As we increasingly appreciate the importance breast density has on risk for developing breast cancer and the limitations of mammography, it is crucial that we find technologies that allow for the detection of breast cancer, regardless of risk,” said Dr. Brem. “It is exciting that BSGI does exactly that and can be used to detect breast cancer in all women, regardless of density.”

Under new legislation, mammography clinics in Connecticut and Texas are now required to inform patients about their breast density. While other states may follow suit, doctors are already using advanced diagnostic imaging tools that are effective in the detection of cancer in both dense and non-dense breasts.

Many leading medical centers around the country are now offering BSGI/MBI to their patients, such as Cornell University Medical Center, New York and The George Washington University Medical Center, Washington, D.C.

Researchers from The George Washington University Medical Center (Washington, D.C.) conducted a retrospective review of their BSGI database from January 2004 to August 2009. They evaluated 344 women with breast cancer, of whom breast density was available per mammography report. Researchers included Rachel F. Brem, M.D.; Caitrin M. Coffey, BS; Jocelyn A. Rapelyea, M.D.; Jessica Torrente, M.D.; Jennifer H. Lieberman, BA; Megan R. Kann, BA; Anita McSwain, M.D., MPH; and Christine Teal.

Results found there was no difference in the sensitivity of BSGI/MBI in detecting breast cancer in women with non-dense and dense breasts. The overall sensitivity of BSGI/MBI for breast cancer detection was 95.6 percent; 137 of 142 (96.5 percent) women with non-dense breasts, and 192 of 202 (95.1 percent) women with dense breasts had positive BSGI/MBI examinations.

“The ability to utilize physiologic imaging to improve breast cancer detection is very exciting in that it is equally effective in women with dense and non-dense breasts,” said Dr. Brem. “The sensitivity of BSGI has been reported to be equal to MRI, but BSGI is performed with the patient comfortably seated. BSGI requires a fraction of the physician time for image interpretation, has a lower false positive rate, and can be performed in women who cannot undergo MRI, such as those with implantable devices and renal insufficiency. The integration of BSGI in clinical practice is a robust tool for the improved detection of the smallest cancers: those which are detected early, and are most curable,” said Dr. Brem.

#### About BSGI/MBI

As a follow-up to mammography, BSGI/MBI utilizes the Dilon 6800® Gamma Camera to help physicians more clearly differentiate benign from malignant tissue. To perform BSGI/MBI, the patient receives a pharmaceutical tracing agent that is absorbed by all the cells in the body. Due to their increased rate of metabolic activity, cancerous cells in the breast absorb a greater amount of the tracing agent than normal healthy cells and generally appear as dark spots on the BSGI/MBI image.

Published on : Tue, 29 Nov 2011