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In Women Over the Age of 65, Breast-Specific Gamma Imaging (BSGI) Limits Biopsies, Costs for Diagnosing Breast Cancer

Pivotal Study Presented at Interdisciplinary Breast Center Conference

Newport News, Va., March 18, 2009 — For women over the age of 65, Breast-Specific Gamma Imaging (BSGI) provides a valuable tool in the diagnosis of breast cancer by confirming when disease is present, but excelling in confirming that cancer is not there. With a specificity rate of almost twice that of magnetic resonance imaging (MRI), BSGI decreases the need for diagnostic biopsy, according to findings presented today at the 19th Annual National Interdisciplinary Breast Center Conference in Las Vegas.

“Unnecessary biopsies in women over the age of 65 can be more serious due to a higher risk of complications. The ability of BSGI to effectively evaluate these women at a reasonable cost, without contraindications, in relative comfort, and leading to decreased morbidity is very valuable,” said Dr. Leora Lanzkowsky, Director of Women's Imaging, CHW- Nevada Imaging Centers in Las Vegas.

BSGI has comparable sensitivity, but superior specificity when compared to MRI. *Specificity* refers to the technique's ability to detect that disease is actually not present. *Sensitivity* refers to the ability of an imaging technique to detect the presence of disease.

BSGI, a molecular breast imaging technique, is a follow-up to mammography that can see lesions independent of tissue density and discover early stage cancers. With BSGI, 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 “hot spots” on the BSGI image. The Dilon 6800 Gamma Camera is a high-resolution, compact gamma camera, optimized to perform BSGI.

Lanzkowsky says BSGI is more comfortable for the patient than mammography because it does not compress the breast. In addition, for this age group MRI has a higher degree of contraindications including pacemakers, implanted metallic devices, and renal diseases that place them at risk for nephrogenic systemic fibrosis (NSF), a skin reaction to the Gadolinium-based contrast material used in MRI.

According to the study, women over the age of 65 account for 30 percent of the U.S. screening mammography population, and also account for 30 percent of breast cancers diagnosed in the United States — and this age group is increasing. "These women are usually under-evaluated with advanced imaging techniques. This often results in a delay in diagnosis compared to younger patients. In this Medicare-dependant population, a late diagnosis can lead to shortened life expectancy and more expensive treatment regimens. BSGI can change all that," said Dr. Lanzkowsky.

The Study

Lanzkowsky and her colleagues conducted a retrospective review of 43 patients with 62 abnormalities. An index lesion was present in 40 (93 percent) of patients in the additional three patients, the studies were conducted due to a palpable mammography abnormality or due to attending physician request. Sixty-seven percent of the index lesions were indeterminate on mammography (either BIRADS 0 or 3). For patients with positive BIRADS findings sent on for additional imaging procedures, all of them had either heterogeneously dense or very dense breasts obscuring the visualization of the remaining breast tissue on mammography. MRI breast protocol, parallel imaging with a breast coil, and 1.5T Siemens MRI were used, as well as BSGI with the Dilon 6800 gamma camera. All pathology results were confirmed through biopsy, or one-year follow up.

The Results

The results demonstrate a good correlation between BSGI and MRI for the detection of significant malignant lesions. While the sensitivity was slightly less for BSGI compared to MRI (81 percent v 88 percent), the specificity was higher for BSGI (65 percent v 37 percent), PPV (45 percent v 33 percent) NPV (91percent v 89 percent). The finding of BSGI specificity of almost twice as much as with MRI, is particularly important as it leads to a decrease in the reliance on biopsy.

About Dilon Technologies

Dilon Technologies Inc. is bringing innovative new medical imaging products to market. Dilon's cornerstone product, the Dilon 6800, is a high-resolution, small field-of-view gamma camera, optimized to perform BSGI, a molecular breast imaging procedure which images the metabolic activity of breast lesions through radiotracer uptake. Many leading medical centers around the country are now offering BSGI to their patients, including: Cornell University Medical Center, New York; George Washington University Medical Center, Washington, D.C.; and The Rose, Houston. For more information on Dilon Technologies please visit www.dilon.com.

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