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Molecular Markers for Breast Cancer May Help Predict a Patient's Prognosis

New Brunswick, New Jersey, January 18, 2007 – Women classified as having triple negative tumors have a poor prognosis but may not be at higher risk for local relapse after conservative breast surgery and radiation, according to a study released in the December 20, 2006 issue of the *Journal of Clinical Oncology* (Vol 24, No. 36 5652-5657), the official journal of the American Society of Clinical Oncology.

Scientists at The Cancer Institute of New Jersey, Robert Wood Johnson Medical School and Yale School of Medicine wanted to determine the prognostic significance of triple negative breast cancers classified by three molecular markers - estrogen receptor, progesterone receptor and HER2/*neu*. They looked at the prognosis for the locoregional relapse and distant metastasis in conservatively managed breast cancer patients, those treated with breast-conserving surgery followed by radiation therapy. Utilizing a database of 1,990 conservatively managed patients, 482 patients were identified as having all three molecular markers available. Of those patients, 117 were classified as triple negative since they were negative for all three markers and 365 were classified as non-triple negative.

One of the more striking differences between the triple negative and the non-triple negative groups was the higher percentage of younger women with triple negative tumors, with only 37% of the triple negative group over 50 years at diagnosis compared with 55% of the non-triple cohort. Younger women have been shown to have a higher rate of local relapse compared with older women. Also, the triple negative group had a higher proportion of patients with strong family histories (defined as at least one first-degree relative with breast cancer) and patients in the triple negative group were more likely to be African American.

Utilizing the three molecular markers as predictors, researchers demonstrated that patients with triple negative breast cancers have a relatively poor prognosis, with a poorer distant metastasis-free, disease-free, and cause-specific survival. However, local recurrences (tumors recurring within the conservatively treated breast) were not increased in the triple negative cohort. These results indicate that although these patients are at higher risk for metastasis, their local relapse rates are acceptable and they are candidates for breast conserving surgery and radiation. Future research should focus on new strategies to decrease distant metastasis in patients with triple negative tumors.

“This study only begins to address the utilization of a classification system based upon molecular markers for breast cancer as a predictor of a patient's prognosis,” said Bruce G. Haffty, M.D., the lead author of the study and the Chair of Radiation Oncology at The Cancer

Institute of New Jersey and UMDNJ-Robert Johnson Wood Medical School. “As our understanding of molecular markers and genetic profiling continues to increase so will our ability to better detect and predict a patient’s prognosis and tailor the treatment they receive,” continued Dr. Haffty, an Associate Director at The Cancer Institute of New Jersey.

Breast cancer widely affects women in the United States and New Jersey, with more than 178,480 women nationwide and 6,080 in New Jersey expected to be diagnosed in 2007.

About The Cancer Institute of New Jersey

The Cancer Institute of New Jersey is the state’s first and only National Cancer Institute-designated Comprehensive Cancer Center, and is dedicated to improving the prevention, detection, treatment and care of patients with cancer. CINJ’s physician-scientists engage in translational research, transforming their laboratory discoveries into clinical practice quite literally bringing research to life. The Cancer Institute of New Jersey is a Center of Excellence of UMDNJ-Robert Wood Johnson Medical School. To support CINJ, please call 732/235-8614.

The Cancer Institute of New Jersey Network is comprised of hospitals throughout the state and provides a mechanism to rapidly disseminate important discoveries into the community. Partner Hospitals: Robert Wood Johnson University Hospital, Atlantic Health System (Morristown Memorial Hospital, Mountainside Hospital, Overlook Hospital). Affiliate Hospitals: Bayshore Community Hospital, CentraState Healthcare System, Cooper University Hospital (CINJ at Cooper),* Jersey Shore University Medical Center, JFK Medical Center, Monmouth Medical Center, Raritan Bay Medical Center, Robert Wood Johnson University Hospital at Hamilton (CINJ-Hamilton), Saint Peter’s University Hospital, Somerset Medical Center, Southern Ocean County Hospital, The University Hospital/UMDNJ-New Jersey Medical School,* and University Medical Center at Princeton.

*Academic Affiliate

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