Obese Women with HR+ Operable Breast Cancer Face Inferior Outcomes, ECOG-Led Study Shows

Philadelphia, PA [August 27, 2012]: Women who were obese at diagnosis of hormone receptor-positive operable breast cancer that was treated with standard chemohormonal therapy were shown to have outcomes inferior to those of their nonobese counterparts, according to the results of a study published online today in Cancer, a peer-reviewed journal of the American Cancer Society. The study was designed and conducted by the US Cancer Cooperative Groups under the leadership of the Eastern Cooperative Oncology Group (now part of the ECOG-ACRIN Cancer Research Group).

“We’ve had a very tumor-centric view of treating cancer and haven’t paid much attention to how characteristics of the patient influence prognosis. Considering factors specific to the patient, such as obesity, and to the tumor, such as breast cancer subtype, could help us better identify those at risk of recurrence,” said lead study investigator Joseph Sparano, MD, Albert Einstein College of Medicine, Montefiore Medical Center (Bronx, New York) and Therapeutics Co-Chair of the ECOG-ACRIN Breast Committee. “We found a pretty striking relationship between obesity and recurrence of a common breast cancer subtype, which we think may eventually lead to testing new strategies to prevent recurrence.”

To assess the correlation between body mass index (BMI) and outcome, study investigators analyzed data from 6885 women with stage I to III breast cancer who were enrolled in E1199, E5188, or E3189, three National Cancer Institute-sponsored clinical trials designed and coordinated by the Eastern Cooperative Oncology Group. All of the trials required women to have an excellent performance status and to be free of significant comorbidities; the rate of obesity (defined as a BMI of ≥30 kg/m²) in the trials ranged from 25% to 37%. Primary outcome measures in the current study were disease-free survival (DFS) and overall survival (OS).

The relationship between obesity and breast cancer was initially found in an analysis of data from E1199—the most recent of the three trials and the one using the “most contemporary” chemotherapy and endocrine therapy regimens—and subsequently confirmed in E5188 and E3189.

In E1199, increasing BMI assessed as a continuous variable was strongly correlated with inferior DFS (overall $P = .0006$) and OS ($P = .0007$) in women with hormone receptor-positive/human epidermal growth factor receptor 2 (HER-2)-negative or unknown disease; however, a similar finding was not found in women with triple-negative disease ($P = .89$ for DFS; $P = .45$ for OS) or HER-2-positive disease ($P = .51$ for DFS and $P = .61$ for OS). Furthermore, obesity assessed as a categorical variable remained strongly correlated with inferior DFS (hazard ratio [HR], 1.24; 95% confidence interval [CI], 1.06-1.46; $P = .0079$).
and OS (HR, 1.37; 95% CI, 1.13-1.67; \( P = .0015 \)) in women with hormone receptor-positive/HER-2-negative or unknown disease, but not in those with other disease subtypes.

In an accompanying E1199 analysis—this one evaluating the interaction between obesity and breast cancer subtype—the interaction term with \( P = .021 \) was found to be statistically significant for OS (HR = 1.45 for obese over nonobese in hormone receptor-positive/HER-2-negative or unknown disease \( [P = .00014] \) vs. HR = 1.05 for other subtypes \( [P = .62] \)). Additionally, the interaction term with \( P = .070 \) indicated a strong trend for DFS (HR = 1.30 for obese over nonobese in hormone receptor-positive/HER-2-negative or unknown disease \( [P = .0012] \) vs. HR = 1.05 \( [P = .60] \) for other subtypes).


About ECOG-ACRIN

The ECOG-ACRIN Cancer Research Group designs and conducts biomarker-driven cancer research involving adults who have or are at risk of developing cancer. ECOG-ACRIN was formed in May 2012 by the merger of two highly respected cancer cooperative groups: the Eastern Cooperative Oncology Group (ECOG) and the American College of Radiology Imaging Network (ACRIN). ECOG-ACRIN has integrated therapeutic and diagnostic imaging-based research disciplines with the latest bioinformatics technologies into a single scientific organization. With its capacity to explore integral biomarkers, including imaging markers of response and prognosis, ECOG-ACRIN is poised to achieve patient-centered research breakthroughs across the cancer care continuum, from prevention and screening through the treatment of metastatic disease. For more information, visit www.ecog-acrin.org.

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