Obese Women with ER-positive/HER2-negative Breast Cancer Have Poorer Survival Rates

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Obesity was associated with inferior survival in women with stage I to III breast cancer.
Women with ER-positive/HER2-negative disease had inferior outcomes.
Research is needed to identify contributing factors and develop therapeutic interventions.

SAN ANTONIO - Obesity was associated with worse overall and disease-free survival in women with operable breast cancer treated with adjuvant chemotherapy, but for the first time, researchers observed this finding in only a specific subset of patients – those with estrogen receptor (ER)-positive/HER2-negative disease.

About one third of all adults in the United States are obese, posing a major public health problem because of obesitys association with an increased risk of diabetes and heart disease. This study indentified a new hazard associated with obesity.

Results were presented at the 33rd Annual CTRC-AACR San Antonio Breast Cancer Symposium, held Dec. 8-12, 2010.

"We were surprised to find that there was no evidence that this finding played out in the other breast cancer subtypes – its mainly a phenomenon that we seem to be seeing those with ER-positive/HER2-negative disease," said Joseph A. Sparano, M.D., professor of medicine and womens health at Albert Einstein Medical College of Medicine and associate chairman of the department of oncology at Montefiore Medical Center in Bronx, N.Y.

"Our results may be explained by the fact that obesity is associated with hyperinsulinemia, which may drive the growth of estrogen-dependent tumors," said Sparano.

Sparano and colleagues conducted a retrospective study to evaluate the effect of obesity on the outcomes of three Eastern Cooperative Oncology Group trials: E1199, E5188 and E3189. All three trials involved doxorubicin/cyclophosphamide and other agents.

The researchers first evaluated the relationship between body mass index (BMI) and disease-free survival and overall survival in the E1199 trial. Results showed a nonsignificant trend toward worse disease-free survival and overall survival for the obese patients compared with others.

However, after evaluating these data by breast cancer subtype, obese women with ER and/or progesterone receptor (PR)-positive/HER2-negative disease had

significantly worse disease-free survival and overall survival. The same effect was not seen in women with HER2-positive and triple-negative disease.

After this initial finding was seen in the E1199 trial, the research team attempted to validate these findings in two other trials, one of which included only ER-positive disease (E5188) and a second that included only ER-negative disease. The results held up in these two other studies – obesity was associated with worse outcomes in patients with ER-positive disease in the E5188 trial, but only in patients with ER-negative disease treated in the E3189 trial.

"If validated in other studies, this finding provides strong rationale for trying to identify potential causes, and prospectively evaluate intervention strategies designed to reduce their risk of recurrence," Sparano said.

The researchers plan additional studies to evaluate the relationship between obesity and tumor gene expression, and to identify other host factors that may be associated with recurrence, such as insulin and other growth-factor levels.

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The mission of the CTRC-AACR San Antonio Breast Cancer Symposium is to produce a unique and comprehensive scientific meeting that encompasses the full spectrum of breast cancer research, facilitating the rapid translation of new knowledge into better care for breast cancer patients. The Cancer Therapy & Research Center (CTRC) at The University of Texas Health Science Center at San Antonio, the American Association for Cancer Research (AACR) and Baylor College of Medicine are joint sponsors of the San Antonio Breast Cancer Symposium. This collaboration utilizes the clinical strengths of the CTRC and Baylor, and the AACRs scientific prestige in basic, translational and clinical cancer research to expedite the delivery of the latest scientific advances to the clinic. The 33rd annual symposium is expected to draw nearly 9,000 participants from more than 90 countries.

Contact Media:
Jeremy Moore
(267) 646-0557
jeremy.moore@aacr.org [4]
In San Antonio, Dec. 8-12:
(210) 582-7036

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