

Factors and Regimens That Could Predict Response to Neoadjuvant Therapy Identified

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Neoadjuvant therapy, giving chemotherapy and/or targeted agents before surgery, has been used more and more frequently to reduce tumor size and thus improve the chances of being able to perform breast-conserving surgery in breast cancer patients. A German group collected data from eight clinical trials comparing various neoadjuvant regimens, including those containing Herceptin (trastuzumab), and identified factors that potentially predict response to treatment.

A total of 6,634 patients involved in the trials, spanning from 1998 to 2006, were given chemotherapy, including Adriamycin (doxorubicin) and Taxol (paclitaxel). Half of the trials were performed before the adoption of Herceptin for HER2-positive breast cancer, which showed a doubling of complete response rates in trials involving Herceptin compared with the earlier trials.

After looking at the treatment regimens, researchers narrowed down factors that increased the chance of complete response, defined in this meta-analysis as having removed all of the cancer before surgery, including no cancer cells found in nearby lymph nodes. Longer duration of therapy regimens, about 18 to 36 weeks of treatments, were found to be more beneficial than 8 to 12 weeks. Giving drugs in sequence and in combination had similar pathologic complete response rates (i.e. no evidence of cancer in the surgically removed tumor).

Researchers hope that by continuing to examine these various regimens, a patient population can be identified that would be best served by treatment before breast-conserving surgery. While additional meta-analysis of these trials is ongoing, it appears that factors that increase the likelihood of complete response are young age, small tumor size, lymph nodes that do not contain cancer cells, hormone receptor-negative disease, and histologic grade 3 cancer. Women with HER2-positive cancers also have a better chance of complete response, presumably due to the widespread introduction of Herceptin.

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