Randomized Trial of High-dose Chemotherapy and Blood Cell Autografts for High-Risk Primary Breast Carcinoma

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Background
In patients with high-risk breast carcinoma some studies have suggested that high-dose chemotherapy (HDC) and autologous hematopoietic stem cell support (AHSCS) improved tumor response rates compared with conventional-dose chemotherapy. In addition, better supportive care measures have dramatically reduced morbidity and mortality due to HDC. However, whether HDC-AHSCS will improve overall survival in patients with high-risk breast cancer remains an open question. Dr. Gabriel N. Hortobagyi and colleagues from The University of Texas M. D. Anderson Cancer Center in Houston reported this randomized trial comparing standard combination chemotherapy versus the same therapy followed by high-dose consolidation chemotherapy with AHSCS for patients with high-risk breast cancers.

Methods
A total of 78 breast cancer patients who had either 10 or more positive lymph nodes after primary surgery or four or more positive lymph nodes after four cycles of induction chemotherapy were included. All patients received eight cycles of 5-FU, adriamycin, and cyclophosphamide (FAC) chemotherapy. Half of the patients were randomly assigned to receive, in addition, two cycles of cyclophosphamide, etoposide, and cisplatin with AHSCS. Postmenopausal women with estrogen receptor-positive tumors also received tamoxifen. All patients received radiation treatment.

Results
- After a median follow-up of 6.5 years,
  - The 3-year overall survival rate in the FAC only group and AHSCS group was 77% and 58%, respectively. The differences were not statistically significant.
  - The 3-year relapse-free survival rate in the FAC only group and AHSCS group was 62% and 48%, respectively. The differences were not statistically significant.
  - The patients who received AHSCS had greater and more frequent toxicity

Discussion
In this study, the addition of high-dose chemotherapy and AHSCS to standard chemotherapy did not increase survival in high-risk breast cancer patients and in fact was associated with greater toxicity. There might be a subgroup of patients with high-risk breast cancers who will benefit from high-dose chemotherapy and AHSCS. However, to date, this group of patients has not been identified.