Research Roundup from San Antonio: New Data on Triple-negative, HER2-positive, Local, and Advanced Breast Cancer

By Caroline Helwick, Alice Goodman, and Jo Cavallo

The 2012 San Antonio Breast Cancer Symposium featured more than 2,500 abstracts and lectures, including timely research in the field and discussions for scientists and clinicians alike. In addition to nearly two dozen in-depth reports from the meeting, *The ASCO Post* brings readers the following news briefs.

Bevacizumab in Triple-negative Breast Cancer

Bevacizumab (Avastin) did not improve outcomes when added to chemotherapy in patients with early breast cancer who have the triple-negative subtype, the results of the randomized phase III BEATRICE study showed.[1]

Overall, the outcomes were better than expected, but "in terms of improvement in outcomes, giving 1 year of bevacizumab isn't the answer," said **David Cameron, MD**, Professor of Oncology at Edinburgh University in Scotland.

David Cameron, MD

C. Kent Osborne, MD, Director of both the Breast Center and Cancer Center at Baylor College of Medicine, Houston, who moderated the press conference where the results were first presented, added, "It's getting to the point where it's going to be difficult to know the role of bevacizumab, if any, in breast cancer."

BEATRICE included 2,591 women with triple-negative invasive early breast cancer starting adjuvant chemotherapy with a taxane, anthracycline, or both. Patients were randomly assigned to four to eight cycles of chemotherapy, alone or with the addition of bevacizumab. Treatment was continued for 1 year.

Invasive disease–free survival was achieved by 83.7% in the bevacizumab arm compared with 82.7% for chemotherapy alone, for a 13% nonsignificant reduction in risk.

C. Kent Osborne, MD

While the overall survival analysis was premature, a similar trajectory was observed. The bevacizumab arm had a 16% nonsignificant reduction in mortality. Bevacizumab was associated with more cardiovascular toxicity, but most cases were reversible after discontinuation.

Intraoperative Radiotherapy vs External-beam Radiotherapy

Low-dose intraoperative radiation therapy proved comparable to whole-breast irradiation (ie, external-beam radiotherapy) for preventing breast cancer recurrence in an updated analysis of the randomized noninferiority TARGIT-A trial.[2]

After a median follow-up of 29 months, the 34 cases of ipsilateral breast recurrence were observed slightly but significantly more often in the targeted intraoperative radiotherapy group. Nonetheless, the absolute difference of 2.01% fell within the prespecified boundary for noninferiority of targeted intraoperative radiotherapy (2.5%), reported **Jayant Vaidya, MD, FRCS, PhD**, Reader and Consultant Surgeon at the University College London.

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Jayant Vaidya, MD, PhD

The study population consists of 3,451 women aged 45 and older with unifocal early invasive breast cancer (preferably < 3.5 cm). The updated results showed a hazard ratio for recurrence of 2.05 for targeted intraoperative radiotherapy vs external-beam radiotherapy (P = .042). In addition to the recurrences, 88 deaths have occurred in the two treatment groups, but in this case there was a trend toward 30% fewer deaths overall with targeted intraoperative radiotherapy (P = .099) and a 53% reduction in non–breast cancer mortality (P = .009) vs external-beam radiotherapy.

Dr. Vaidya maintained that focusing radiation therapy on the primary tumor site, where most recurrences are observed, is a logical strategy, giving rise to the targeted intraoperative radiotherapy protocol. After surgical excision, patients receive about a 20Gy dose directly to the wound bed. Patients with high-risk features (~15%) receive supplemental external-beam radiation therapy in this "risk-adapted" approach.

Prespecified stratification by hormone receptor as a surrogate for radiation sensitivity status showed that the difference in recurrence rate owed primarily to increased locoregional recurrence in patients with progesterone receptor–negative tumors and delayed delivery of targeted intraoperative radiotherapy (necessitating reopening of the wound cavity). An analysis limited to the 1,625 progesterone receptor–positive women who received targeted intraoperative radiotherapy concurrent with lumpectomy produced a between-group difference for local recurrence of 0.18% and a reduction in overall mortality of 3.1% (P = .08) vs external-beam radiotherapy.

Dr. Vaidya emphasized the need for careful patient selection in applying targeted intraoperative radiotherapy in clinical practice. "Patients should fulfill the eligibility criteria for the TARGIT-A trial," he said. "The preferred treatment option is concurrent [targeted intraoperative radiotherapy at the time of surgery] in progesterone receptor–positive patients. Add external-beam radiotherapy if adverse prognostic factors are present."

Cognitive Impairment May Precede Chemotherapy Treatment

A small study by **Bernadine E. Cimprich, PhD, RN, FAAN**, Emerita Professor, and colleagues at the University of Michigan[3] found that some common neurocognitive problems associated with chemotherapy in the treatment of breast cancer, such as poor performance on verbal working memory tasks (ie, "chemobrain"), are often present before treatment begins and may be the result of fatigue and anxiety.

Bernadine E. Cimprich, PhD, RN, FAAN

The research involved testing the neurocognitive responses of 65 patients with stages 0 through IIA breast cancer and 32 age-matched healthy subjects using functional magnetic resonance imaging (MRI). The functional MRI was performed 24 to 34 days after surgery and before either adjuvant anthracycline-based combination chemotherapy (n = 28) or radiotherapy (n = 37) for localized breast cancer. The participants were asked to perform a verbal working memory task during functional MRI scanning and provide self-reported levels of fatigue both 1 month prior to treatment and 1 month following therapy.

The findings showed that the chemotherapy group had significantly greater severity of fatigue (P < .05) and performed less accurately on the verbal working memory task both 1 month pre- and 1 month post-treatment, compared with participants in the other two groups. The radiotherapy-treated patients had an intermediate cognitive function score between that of the chemotherapy and control groups.

The researchers concluded that pretreatment neurocognitive compromise and fatigue are contributors to the cognitive impact often attributed solely to chemotherapy. Moreover, they noted that early therapeutic interventions that target fatigue may improve cogni-

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