HEM/ONC News

By Stacey Small

A Genomic Predictor of Response and Survival Following Taxane-Anthracycline Chemotherapy for Invasive Breast Cancer

Hatzis and colleagues conducted a prospective, multicenter study in order to assess genomic predictors of response and survival from neoadjuvant chemotherapy in 310 patients with newly diagnosed, invasive breast cancer. Results of the study were published in the May 11 issue of the *Journal of the American Medical Association*. Eligible patients had newly diagnosed breast cancer that was epidermal growth factor receptor-2 (HER2) or HER2/neu–negative. Patients were treated with sequential taxane and anthracycline–based regimens (and endocrine therapy if they were estrogen receptor [ER]–positive). Gene expression microarrays of newly diagnosed breast cancer were used to develop predictive signatures for sensitivity to endocrine therapy, chemoresistance, and chemosensitivity. The signatures were tested in an independent validation cohort of 198 patients with newly diagnosed HER2-negative breast cancer (99% of patients were clinical stage II–III). The genomic test predicted that 28% of patients in the independent validation cohort would be sensitive to treatment. Those patients had a 56% probability of excellent pathologic response (95% confidence interval [CI], 31–78%) and distant relapse-free survival (DRFS) of 92% (95% CI, 85–100%), with an absolute risk reduction (ARR) of 18% (95% CI, 6–28%). The genomic test predicted sensitivity in 30% of patients with ER-positive tumors (DRFS, 97% [95% CI, 91–100%]; ARR, 11% [95% CI, 0.1–21%]) and 26% of patients with ER-negative tumors (DRFS, 83% [95% CI, 68–100%]; ARR, 26% [95% CI, 4–48%]). Other genomic predictors revealed unexpectedly worse survival for patients predicted to be chemosensitive.

A Melanoma Vaccine Improves Interleukin-2 Therapy in Patients With Advanced Disease

In the June 2 issue of the *New England Journal of Medicine*, Schwartzentruber and coworkers reported the results of a randomized, phase III trial that sought to determine whether combining a melanoma vaccine with interleukin-2 would improve outcomes in patients with advanced melanoma. A total of 185 patients from 21 centers were enrolled. The primary endpoint of the study was clinical response; the secondary endpoints were toxic effects and progression-free survival (PFS). All patients had stage IV or locally advanced stage III cutaneous melanoma, expression of HLA*A0201, an absence of brain metastases, and suitability for high-dose interleukin-2 therapy. Patients were randomized to receive interleukin-2 alone (720,000 IU/kg) or gp100:209-217(210M) plus incomplete Freund's adjuvant (Montanide ISA-51) once per cycle, followed by interleukin-2. The vaccine/interleukin-2 group had a significant improvement in centrally verified overall clinical response as compared with the interleukin-2–only group (16% vs 6%, respectively; P=.03). PFS was longer in the vaccine plus interleukin-2 group than it was in the interleukin-2–only group (2.2 months; P=.008). The median overall survival in the vaccine plus interleukin-2 group was 17.8 months (95% CI, 11.9–25.8) compared with 11.1 months in the interleukin-2–only group (95% CI, 8.7–16.3; P=.06). The toxic effects in both groups were consistent with those expected with interleukin-2 therapy.

Bevacizumab Added to Chemotherapy Has Clinical Benefit in Patients With Epithelial Ovarian, Primary Peritoneal, or Fallopian Tube Cancer

Results from the OCEANS (A Phase III, Multicenter, Randomized, Blinded, Placebo-Controlled Trial of Carboplatin and Gemcitabine Plus Bevacizumab in Patients With Platinum-Sensitive Recurrent Ovary, Primary Peritoneal, or Fallopian Tube Carcinoma) trial by Aghajanian and associates were presented at the 2011 American Society of Clinical Oncology annual meeting (abstract LBA5007). This trial enrolled 484 women (242 per arm) with platinum-sensitive recurrent epithelial ovarian, primary peritoneal, or fallopian tube cancer who had not received any prior bevacizumab (Avastin, Genentech) for their recurrence, had an Eastern Cooperative Oncology Group performance status of 0–1, and had measurable disease. Patients were randomized to receive 6 cycles of standard chemotherapy (carboplatin and gemcitabine) plus either bevacizumab (15 mg/kg every 3 weeks) or placebo, followed by single-agent bevacizumab or placebo until progression or toxicity. Median follow-up was 24 months. The median PFS was 12.4 months with bevacizumab and 8.4 months with placebo. A comparatively higher objective response rate was observed in patients in the bevacizumab group (78.5%) versus the placebo group (57.4%; P<.0001).