

Adjuvant Trastuzumab with Docetaxel or Vinorelbine for HER-2-Positive Breast Cancer

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Colozza et al. [1] recently presented an overview of four adjuvant trials with trastuzumab in patients with HER-2-overexpressing and/or amplified breast cancers (the North Central Cancer Treatment Group Trial N9831, the National Surgical Adjuvant Breast and Bowel Project Trial B31, the Breast Cancer International Research Group Trial 006, and the HERceptin® Adjuvant study). A very recent study showed that a short course of trastuzumab administered concomitantly with docetaxel or vinorelbine is effective in women with breast cancer who have an amplified *HER-2/neu* gene [2].

In vitro studies indicated that the combination of trastuzumab and vinorelbine exerts synergistic activity [3]. In fact, the results of recent clinical studies of this combination in untreated or heavily pretreated patients with HER-2-positive metastatic breast cancer [4, 5] have shown high objective response rates. In vitro, the combination of trastuzumab with docetaxel exerts synergistic activity, as well [2]. This combination in untreated patients with HER-2-positive metastatic breast tumors showed remarkable efficacy [6].

Concerning the adjuvant setting, Joensuu et al. [2] randomly assigned 1,010 women with axillary node-positive or high-risk node-negative cancer to receive three cycles of docetaxel or vinorelbine, followed by three cycles of fluorouracil, epirubicin, and cyclophosphamide.

The 232 women whose tumors had an amplified *HER-2/neu* gene were assigned to receive or not to receive nine weekly trastuzumab infusions. Within the subgroup of patients with HER-2/neu-positive breast cancer, those who received trastuzumab had better 3-year recurrence-free survival than those who did not (hazard ratio [HR], 0.42; $p = .01$). Interestingly, the hazard ratio remained similar (0.41) when adjustment was made according to the type of chemotherapy given (trastuzumab combined with docetaxel or vinorelbine). Thus, even though, globally, recurrence-free survival at 3 years was better with docetaxel than with vinorelbine (HR, 0.58; $p = .005$), the concurrent administration of trastuzumab with one of these drugs was able to overcome this difference. Moreover, in the adjuvant setting, delayed administration of trastuzumab may be less effective than concurrent administration with paclitaxel [7].

Thus synergy for trastuzumab plus cytotoxic drug combinations is specific for HER-2-overexpressing tumor cells [3] and is not observed in HER-2-negative cells, which show different sensitivity to docetaxel or vinorelbine.

DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST

The authors indicate no potential conflicts of interest.

REFERENCES

- 1 Colozza M, de Azambuja E, Cardoso F et al. Breast cancer: achievements in adjuvant systemic therapies in the pre-genomic era. *The Oncologist* 2006;11:111-125.
- 2 Joensuu H, Kellokumpu-Lehtinen PL, Bono P et al. Adjuvant docetaxel or vinorelbine with or without trastuzumab for breast cancer. *N Engl J Med* 2006;354:809-820.

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- 3 Pegram MD, Konecny GE, O'Callaghan C et al. Rational combinations of trastuzumab with chemotherapeutic drugs used in the treatment of breast cancer. *J Natl Cancer Inst* 2004;96:739–749.
- 4 Burstein HJ, Harris LN, Marcom PK et al. Trastuzumab and vinorelbine as first-line therapy for HER2-overexpressing metastatic breast cancer: multicenter phase II trial with clinical outcomes, analysis of serum tumor markers as predictive factors, and cardiac surveillance algorithm. *J Clin Oncol* 2003;21:2889–2895.
- 5 Papaldo P, Fabi A, Ferretti G et al. A phase II study on metastatic breast cancer patients treated with weekly vinorelbine with or without trastuzumab according to HER2 expression: changing the natural history of HER2-positive disease. *Ann Oncol* 2006;17:630–636.
- 6 Marty M, Cognetti F, Maraninchi D et al. Randomized phase II trial of the efficacy and safety of trastuzumab combined with docetaxel in patients with human epidermal growth factor receptor 2-positive metastatic breast cancer administered as first-line treatment: the M77001 study group. *J Clin Oncol* 2005;23:4265–4274.
- 7 Romond EH, Perez EA, Bryant J et al. Trastuzumab plus adjuvant chemotherapy for operable HER2-positive breast cancer. *N Engl J Med* 2005;353:1673–1684.