New Options for Metastatic Breast Cancer

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Patients with advanced breast cancer are living longer and receiving multiple lines of chemotherapy; however, they eventually develop resistance to the agents. Two more agents have been approved for the treatment of breast cancer and will provide additional treatment options for such patients. Ixabepilone represents a new class of cytotoxic chemotherapy called the epothilones. Ixabepilone was approved for use as a single agent for the treatment of metastatic breast cancer resistant to taxanes, anthracyclines, and capecitabine, as well as in combination with capecitabine for disease refractory to taxanes and anthracyclines. Bevacizumab, a monoclonal antibody targeting vascular endothelial growth factor, was approved for first-line treatment of HER2-negative metastatic breast cancer in combination with paclitaxel. Understanding the efficacy, toxicity, and administration of the agents is crucial for oncology nurses to optimally educate and treat patients with advanced breast cancer.

Patients with advanced breast cancer are living longer and receiving multiple lines of chemotherapy during the course of their disease. A survey of 105 oncologists found that the median number of regimens a patient with metastatic breast cancer (MBC) received was 4, with a range of 1–10 (Seidman, 2006). Despite a multitude of active agents, the treatment of MBC is palliative, and because patients are living longer, they eventually develop resistance. Those factors underscore the need for more effective upfront therapies. Two more agents have been approved for breast cancer treatment to help address that need. Ixabepilone, approved by the U.S. Food and Drug Administration (FDA) in October 2007 for the treatment of resistant disease, represents a new class of cytotoxic chemotherapy, the epothilones. Bevacizumab, a monoclonal antibody targeting vascular endothelial growth factor (VEGF), was approved in 2004 for the treatment of colorectal cancer and in 2006 for non-small cell lung cancer. In February 2008, it also was approved for the upfront treatment of MBC. Understanding the efficacy, toxicity, and administration of the agents is crucial for oncology nurses to optimally educate and treat patients with advanced breast cancer.

At a Glance

- Metastatic breast cancer responds to multiple types of therapies, but drug resistance remains a clinical challenge.
- Ixabepilone, a first-in-class epothilone, recently was approved for use in patients with resistant breast cancer.
- Bevacizumab has been approved for use in combination with paclitaxel for upfront use in metastatic breast cancer.

Ixabepilone

Ixabepilone represents a novel class of cytotoxic chemotherapy, the epothilones. Epothilones exert their cytotoxic effect by binding to and stabilizing microtubules (Goodin, Kane, & Rubin, 2004), which are cellular components that have several functions crucial to cell division and growth. In a manner similar to taxanes, when bound to microtubules, epothilones disrupt their function (Goodin et al.). Evidence exists that epothilones have activity in taxane-resistant cancer cells (Goodin et al.). Other epothilones are in development, but ixabepilone is the first agent in the class to receive FDA approval. It is approved for use as a single agent for the treatment of MBC resistant to taxanes, anthracyclines, and capecitabine, as well as in combination with capecitabine for disease refractory to taxanes and anthracyclines.

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