

# Ipilimumab for Advanced Melanoma: A Nursing Perspective

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**M**elanoma, the most serious type of skin cancer, accounted for an estimated 62,480 new cases of cancer and 8,420 deaths in the United States in 2008 (American Cancer Society, 2008). Melanoma incidence is increasing at a faster rate than any other cancer. The percentage of Americans with melanoma has more than doubled since the late 1970s (Ries et al., 2007). Patients with stage IV melanoma (a cancer considered difficult to control with systemic therapy) have a very poor prognosis; one-year survival rates are dependent on the extent of metastases and are 59% for stage M1a, 57% for stage M1b, and 41% for stage M1c (Balch et al., 2001). Because patients with late-stage melanoma are unlikely to be cured with available treatment options, clinical trial participation is the preferred course of action.

Dacarbazine is the only chemotherapeutic agent for advanced melanoma approved in the United States. Although dacarbazine currently is considered the first-line standard of care, response rates are low (about 7.5%) and survival time is short (less than eight months) (Bedikian et al., 2006). The most common toxicity associated with dacarbazine administration is hemopoietic depression; symptoms of anorexia, nausea, and vomiting are observed in most patients. Temozolomide, another chemotherapeutic agent often used off-label for the treatment of melanoma because of its greater potential to treat brain metastases by penetrating the blood-brain barrier, demonstrated response and survival rates similar to dacarbazine (Quirt, Verma, Petrella, Bak, & Charette, 2007). High-dose interleukin-2 (IL-2) was approved for use in the second-line setting for advanced melanoma based on results from a single-arm trial that yielded an objective response rate of about 16%, with prolonged responses in some patients (Atkins et al., 1999). A 2007 investigation showed a 19% response rate for high-dose IL-2 monotherapy (Tarhini, Kirkwood, Gooding, Cai, & Agarwala, 2007). However, the high toxicity often associated with the treatment (e.g., risk of severe hypotension, cardiac dysrhythmias, respiratory impairments) requires administration in the hospital setting and limits the number of patients that can

**Purpose/Objectives:** To discuss the response patterns and side effects related to ipilimumab, a new immunotherapeutic agent under investigation in the treatment of advanced melanoma and other malignancies.

**Data Sources:** Published articles, abstracts, research data, and clinical experience.

**Data Synthesis:** Ipilimumab is a fully human monoclonal antibody that inhibits the activity of cytotoxic T-lymphocyte antigen-4 (CTLA-4), a naturally immunosuppressive molecule. The most common side effects are immune mediated (e.g., inflammatory diarrhea, pruritis) and appear to occur as a direct result of CTLA-4 inhibition and enhanced immune system activation. Side effects generally are grade I or II and resolve with standard treatments. Most grade III or IV events are managed successfully after swift diagnosis and treatment with corticosteroids; steroid-refractory events resolve after treatment with infliximab or mycophenolate.

**Conclusions:** The response patterns and side effects associated with ipilimumab therapy greatly differ from those common to other advanced melanoma therapies (e.g., chemotherapy, cytokines, vaccines).

**Implications for Nursing:** Nurses have an important role in educating patients about the differences between anti-CTLA-4 therapy and chemotherapy. In addition, teaching patients to recognize ipilimumab's side effects and report them early can result in fast treatment to prevent symptom progression from grade I or II to III or IV. Communication between nurses and patients throughout the treatment process will help patients benefit maximally from the new therapeutic strategy.

be treated (Atkins et al.). Interferon alpha-2b is approved for use in malignant melanoma in the adjuvant setting, but its administration also can result in significant and potentially life-threatening toxicity (Schering Corporation, 2008), including neutropenia or leukopenia. For the three therapies currently approved for malignant melanoma, the potential therapeutic benefit must be weighed against the toxicity risks before administration. Numerous phase III trials have evaluated dacarbazine with other drugs, but no combination has demonstrated improved survival compared to single-agent dacarbazine (O'Day & Boasberg, 2006). Many vaccines also have been