

## FEATURE ARTICLE

# Nursing Care of Patients Receiving High-Dose, Continuous-Infusion Interleukin-2 With Pulse Dose and Famotidine

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High-dose, continuous-infusion interleukin-2 (IL-2) followed by pulse dose and concurrent administration of famotidine has demonstrated response rates of 64% and 33% in patients with metastatic melanoma and metastatic renal cell carcinoma, respectively. Currently, no information is available concerning the nursing care of patients receiving that IL-2 regimen. Given the high response rates of patients on the treatment, attention by the nursing profession is warranted. Effective nursing care of patients receiving IL-2 is essential to the regimen's success. Recognition and prompt treatment of common side effects lead to better patient outcomes. This article provides nurses with an overview of the treatment regimen, expected side effects, psychosocial considerations, and discharge instructions for patients receiving continuous-infusion plus pulse IL-2 and famotidine.

**M**etastatic melanoma and metastatic renal cell carcinoma present challenging and somewhat dismal treatment dilemmas. Traditional chemotherapy, namely cytotoxic drugs, has yielded marginal response and has not been proven to extend life expectancy significantly (Brown & Kirkwood, 2003; Li & McClay, 2002; Mitchell, 2004). Immunologic treatment modalities have proven much more effective but are offered at relatively few treatment centers across the United States because of the specialized training required by all staff involved with treatment.

Treatment with interleukin-2 (IL-2) has provided better outcomes for patients with these cancers. IL-2 is a lymphokine or protein produced primarily by activated T-helper cells. Natural killer cells are stimulated by IL-2 to become lymphokine-activated-killer (LAK) cells. LAK cells act as supercharged cancer killer cells. When given as high-dose bolus (600,000 IU/kg IV piggyback every eight hours), which is perhaps the most familiar dosing, IL-2 has a number of dose-limiting side effects. Because of the toxicity of the regimen, many patients are not eligible for the treatment (Dillman, Wiemann, Bury, Church, & DePriest, 1997; Dillman, Wiemann, VanderMolen, et al., 1997).

Recently, researchers (Quan, Brick, et al., 2004; Quan, Ramirez, et al., 2004; Quan, Ramirez, Taylor, Vinogradov, et al., 2005; Quan, Ramirez, Taylor, Quan, et al., 2005) found that a combination of IL-2 given as a continuous infusion for 72 hours (18 million IU/m<sup>2</sup> every 24 hours) with famotidine 20 mg IV every 12 hours, followed by a 24-hour rest period, then IL-2 18 million IU/m<sup>2</sup> over 15–30 minutes (“pulse” dose) produced

### At a Glance

- ◆ Metastatic melanoma and metastatic renal cell carcinoma present challenging treatment dilemmas.
- ◆ Continuous-infusion plus pulse interleukin-2 dosing with famotidine can provide good treatment outcomes for patients with metastatic melanoma or renal cell carcinoma.
- ◆ Nursing care of patients receiving continuous-infusion followed by pulse interleukin-2 is unique, requiring a different approach than care of patients receiving chemotherapy or the traditional high-dose bolus regimen.

promising results in patients with Eastern Cooperative Oncology Group performance status of 0 or 1 with metastatic melanoma or renal cell carcinoma. The cycle generally is repeated

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Digital Object Identifier: 10.1188/07.CJON.513-519