# Nursing Considerations With Pazopanib Therapy:
## Focus on Metastatic Renal Cell Carcinoma

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The rapid evolution of targeted therapies has had a dramatic impact on multiple domains in oncology, particularly metastatic renal cell carcinoma (RCC). Four agents antagonizing vascular endothelial growth factor–mediated signaling have been approved for the treatment of metastatic RCC, including the monoclonal antibody bevacizumab and the small molecular inhibitors sunitinib, sorafenib, and pazopanib. Pazopanib was approved in 2009 for this disease on the basis of a phase III clinical trial demonstrating a superior progression-free survival compared to placebo in 435 patients with either treatment-naive or cytokine-refractory disease. The trial offered insight related to the toxicity profile associated with this agent. The most common clinical adverse events are diarrhea, hypertension, nausea, anorexia, and vomiting. With respect to laboratory adverse events, hepatotoxicity represents a specific concern with pazopanib. Oncology nurses play a critical role in counseling patients regarding the toxicity profile and management of adverse events in pazopanib treatment.

Enhanced understanding of tumor biology has led to the identification of molecular pathways that are susceptible to pharmacologic targeting. Since 1990, this paradigm has changed the face of cancer therapy. For example, the recognition of HER2 as a driver of breast cancer proliferation triggered the development of the monoclonal antibody trastuzumab (Slamon et al., 1987, 2001; Slamon, Leyland-Jones, & Shak, 1998). In renal cell carcinoma (RCC), modulation of the *von Hippel-Lindau* gene leads to overproduction of vascular endothelial growth factor (VEGF), which in turn triggers aberrant angiogenesis (blood vessel growth and formation) (Kim & Kaelin, 2004). To date, four drugs targeting VEGF-mediated signaling have been approved for the treatment of metastatic RCC on the basis of randomized, phase III studies: bevacizumab, sorafenib, sunitinib, and pazopanib (Escudier et al., 2007, 2010; Motzer et al., 2009; Rini et al., 2010; Sternberg et al., 2010).

The availability of multiple agents for RCC represents a unique clinical dilemma, as treatment with one agent may cause patients to develop resistance to the others because of the similar mechanism of action. Prior to VEGF-directed therapies, immunotherapy (e.g., interleukin-2, interferon-α) represented the mainstay of treatment for RCC. To date, patients and clinicians must decide among a variety of targeted agents. For instance, the National Comprehensive Cancer Network (2011) guidelines

### At a Glance

- Pazopanib is an orally available receptor tyrosine kinase inhibitor, with effects against vascular endothelial growth factor receptor, platelet-derived growth factor receptor, and c-Kit.
- Pazopanib exhibits activity against a wide variety of malignancies, including renal cell carcinoma, melanoma, and cancers of the breast, prostate, colon, and lung.
- Nurses must have a working knowledge of the benefits and potential side effects of pazopanib to ensure that therapeutic goals are achieved.

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