Renal Cell Carcinoma: The Translation of Molecular Biology Into New Treatments, New Patient Outcomes, and Nursing Implications

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Kidney and renal pelvic cancers have increased in incidence in the United States since the 1970s (Chow, Gridley, Fraumeni, & Jarvholm, 2000; Hock, Lynch, & Balaji, 2002). A projected 54,390 new cases are expected in 2008, roughly 85% of which will be renal cell carcinoma (RCC), and 13,010 deaths are expected (Jemal et al., 2008). RCC cases account for only 3% of patients diagnosed with cancer in the United States, but RCC is resistant to conventional chemotherapy (Motzer, 2003; Motzer, Michaelson, et al., 2006) and therefore is associated with poor prognosis. Patients diagnosed with early-stage disease have a five-year survival rate of 90%. However, about 30% of patients present with metastatic disease (Donskov & von der Maase, 2006) and 20%–30% of patients are likely to develop metastases after surgery (National Cancer Institute [NCI], 2006). The most common sites for metastases are lung, bone, brain, liver, and adrenal glands (NCI); breast metastases are uncommon (McLaughlin, Thiel, Smith, Wehle, & Menke, 2006). Patients presenting with distant metastases have about a 10% five-year survival rate. Durable responses, with survival greater than 39 months (Rosenberg, Yang, White, & Steinberg, 1998), have been achieved with high-dose interleukin-2 (IL-2) therapy, but only in a small percentage of patients (Fisher, Rosenberg, & Fyfe, 2000; Motzer, Michaelson, et al.).

Key Points . . .

- Renal cell carcinoma (RCC) is one of the most treatment-resistant solid tumors. Clinical trial participation is essential for clarifying the appropriate patient groups for specific treatments and to assess the long-term efficacy of new treatments.
- RCC incidence is increasing. Many small tumors are found during imaging scans for other conditions, creating a need for nursing support, education, management of expectations, and assessment of quality of life.
- Better understanding of hereditary forms of RCC has led to new treatment options.

Better understanding of tumor biology has led to new techniques for staging patients, new treatment approaches, and more sophisticated ways to assess patient quality of life, each of which will have an effect on nursing practice, particularly on patient counseling and management of treatment-related side effects. This review will examine the epidemiology, pathogenesis, diagnosis, and staging of RCC, with a brief discussion of developments in treatment and a range of nursing interventions that are appropriate for supporting patients with RCC and their families and caregivers.

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