Advances in molecular biology have facilitated the identification of cellular signaling pathways, which, when altered in cancer, promote cancer cell division, survival, and angiogenesis. Researchers have used this knowledge to develop anticancer agents that target components of these pathways, such as growth factors, cell surface receptors, and intracellular proteins. Potential advantages of targeted agents include lower systemic toxicity because, unlike cytotoxic chemotherapy, these agents are selective for their targets (Chabner & Roberts, 2005) and improved patient selection and efficacy because the agents’ use can be limited to patients possessing the targeted pathway component.

Targeted agents fall into two main categories: monoclonal antibodies and protein kinase inhibitors (Kay, 2006). These types have similar mechanisms of action in that they bind the target and inhibit signal transmission along the targeted pathway. However, monoclonal antibodies are large molecules that must be administered through IV, whereas protein kinase inhibitors are small molecules that may be formulated for oral administration. Oral targeted agents are becoming more widely used (see Table 1) and many additional oral agents are being evaluated in clinical trials (see Table 2). In the United States, the pace of approval of these agents for use in cancer treatment is accelerating (Aisner, 2007).

Nursing Experience

Nursing Responsibilities With Oral Agents

One of the primary nursing responsibilities in oncology is monitoring patients to ensure their safety. Oral administration offers some advantages compared with IV injections, including patient convenience, fewer disruptions in work and daily activities for travel to an infusion clinic, and avoidance of pain and complications (e.g., infusion-related hypersensitivity reactions); disadvantages include possible lower adherence with self-administration (Gobel, 2007; Moore, 2007). However, daily oral dosing provides continuous drug exposure, compared to intermittent IV infusions, and multiple opportunities to modify dosages to manage side effects. At the same time, accessibility and affordability issues arise because oral drugs may not be readily available (e.g., in the United States). At the same time, accessibility and affordability issues arise because oral drugs may not be readily available (e.g., in the United States). At the same time, accessibility and affordability issues arise because oral drugs may not be readily available (e.g., in the United States). At the same time, accessibility and affordability issues arise because oral drugs may not be readily available (e.g., in the United States).