Denileukin Diftitox as Novel Targeted Therapy in Non-Hodgkin’s Lymphoma

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Non-Hodgkin’s lymphoma (NHL) is a complex group of hematologic malignancies. The majority are B-cell lineage, with 10%–20% arising from T-cell lineage. Detailed knowledge of the subtypes and staging of NHL is essential to plan treatment and provide effective management of treatment-related side effects. Although numerous regimens have demonstrated efficacy in the treatment of NHL, some subtypes of lymphomas generally are not curable. The recent development of targeted therapies such as denileukin diftitox (Ontak®, Ligand Pharmaceuticals, Inc., San Diego, CA) has resulted in potentially significant advances in the treatment of NHL. Oncology nurses must gain a better understanding of the unique mechanism of action of this agent and its side effects to successfully manage patients being treated with this novel therapy.

Key Words: lymphoma, non-Hodgkin; fatigue; pruritus; vascular leak syndrome

Hodgkin’s disease and non-Hodgkin’s lymphoma (NHL) are two distinct diseases that together account for 5% of all cancers in the United States. In 2003, an estimated 53,000 new cases of NHL were diagnosed. Although intensive research has shed light on some aspects of NHL, a detailed understanding of the disease biology still is relatively limited. Unfortunately, the incidence rate of NHL has doubled since the 1970s (American Cancer Society, 2003).

NHL rarely occurs before the age of 10; however, its incidence rises after age 25, with the sharpest increase occurring after age 55. The survival rate of NHL is related to age and consistently is lower for individuals older than 65 (Ries et al., 2000). The rising incidence of NHL creates a need for oncology nurses to gain a better understanding of the complexity and treatment management of this diverse group of malignancies.

Classification, Staging, and Prognostic Factors

NHL encompasses a complex group of hematologic malignancies that have common and diverse features. Classification and staging of NHL subtypes are critical in determining disease prognosis and treatment. Key classification schemes currently used include a combination of the Working Formulation, Revised European American Classification Lymphoma, and World Health Organization classification system (Harris et al., 1994, 2000a, 2000b). The Ann Arbor staging system is the most widely used staging system (Rosenberg, 1977). Staging studies use different imaging techniques, including computed tomography (CT) scans, plain films, magnetic resonance imaging, and radionuclide imaging positron emission tomography and gallium scan, as well as bone marrow biopsy and aspiration. Hematologic laboratory studies such as complete blood count with differential and liver function tests, including lactic dehydrogenase (LDH) and β2-microglobulin, are helpful with staging and prognostic factors. The International Prognostic Index (IPI) is used to classify patients by age (younger than 60 versus older than 60), performance status (0 or 1 versus 2–4), LDH (normal versus elevated), number of extra nodal sites (0 or 1 versus 2–4), and stage (I or II versus III or IV). The IPI score not only serves as a prognostic factor but also assists with treatment planning (Fisher, 2003).

Low-Grade B-Cell Non-Hodgkin’s Lymphoma

Several subtypes of NHL belong to the low-grade or indolent B-cell NHL classification; the most common is follicular lymphoma (FL), which comprises 25%–40% of all adult lymphomas (Seng & Peterson, 1997). Disease often presents with asymptomatic, chronically waxing and waning lymphadenopathy detected by patients or healthcare providers.