

## FEATURE ARTICLE

# Nursing Considerations for Clofarabine in the Treatment of Acute Lymphoblastic Leukemia in Children

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Each year, almost 3,500 children are diagnosed with leukemia, representing approximately 30% of pediatric cancer cases. Acute lymphoblastic leukemia is the most common form of pediatric leukemia, accounting for approximately 80% of cases. A significant number of children fail to respond to existing chemotherapies or are unable to maintain remission. Their prognosis is poor, with little hope for long-term survival.

**C**lofarabine is a next-generation purine nucleoside analog (NA) approved by the U.S. Food and Drug Administration for use in children with relapsed or refractory acute lymphoblastic leukemia (ALL). In clinical trials, clofarabine induced remission in heavily pretreated patients with limited therapy options. Most treatment-related side effects have been manageable and reversible with appropriate therapeutic interventions. Side effects associated with clofarabine are similar to other chemotherapeutic agents and are manageable with proper treatment.

As knowledgeable participants in the management of patients with complex, life-threatening diseases, nurses can facilitate a successful outcome through educating patients and their families and by actively intervening to prevent or reduce side effects.

## Current Treatment of Pediatric Acute Lymphoblastic Leukemias

### Initial Disease

The key to securing long-term survival in children diagnosed with ALL is to achieve a complete and durable remission through aggressive induction chemotherapy followed by delayed intensification and maintenance therapy. Most protocols recommend less toxic regimens for low- or standard-risk patients and more aggressive regimens for patients at higher risk. The presence of certain characteristics at initial diagnosis appears to be associated with more favorable prognoses. Factors such as age (1–10 years) and initial low white blood cell counts (less than 50,000/mcl) (see Figure 1) appear to signify a more positive outcome. Conversely, patients who are older than 10 years, with higher initial white blood cell counts (more than 50,000/mcl) or who also have cer-

### At a Glance

- ◆ Clofarabine is a nucleoside analog approved for treatment of relapsed or refractory acute lymphoblastic leukemia in pediatric patients.
- ◆ The recommended dose of clofarabine in children is 52 mg/m<sup>2</sup> per day for five consecutive days.
- ◆ Side effects of clofarabine are similar to those seen with other chemotherapeutic agents and are manageable with timely and appropriate nursing interventions.

tain chromosomal abnormalities, have less favorable prognoses (Bleyer, 1997; Weinstein & Tarbell, 2001). Immunophenotype is another prognostic factor. Patients with pre-B-cell leukemia are considered to have standard risk, whereas patients with T-cell

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