Blinatumomab: A New Treatment for Adults With Relapsed Acute Lymphocytic Leukemia

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Background: Patients with acute lymphocytic leukemia (ALL) often experience relapse of their disease following standard treatment. Blinatumomab (Blincyto®) is a newly approved option for inducing remission in individuals with relapsed or refractory Philadelphia chromosome-negative B-cell ALL.

Objectives: This article provides an overview of blinatumomab, its benefits demonstrated in clinical trials, adverse effects, administration details, and the role of the oncology nurse in caring for and educating patients who receive blinatumomab.

Methods: This article summarizes the results of two phase II studies on blinatumomab and provides practice implications for nurses caring for patients receiving this therapy.

Findings: Attentive symptom monitoring and management are crucial. Individuals who achieve remission from blinatumomab can then be considered for stem cell transplantation and a chance for cure.

Blinatumomab (Blincyto®), as a single-agent therapy, is an effective new immunotherapy agent to induce remissions in refractory B-cell ALL. Blinatumomab is indicated for relapsed or refractory ALL in adults (Amgen Inc., 2014). CD19 is a surface antigen expressed in B-cell development and in more than 95% of B-precursor ALL blasts, making it a promising target for immunotherapy (Raponi et al., 2011). The drug is bispecific to both CD19 and CD3 (Topp et al., 2015). Blinatumomab simultaneously binds CD3-positive cytotoxic T cells and CD19-positive B cells, causing the T cells to induce lysis of the normal and malignant B cells (Hoffmann et al., 2005).

Indications

In December 2014, the U.S. Food and Drug Administration (FDA, 2014) accelerated the approval of blinatumomab for relapsed or refractory Philadelphia chromosome-negative B-cell ALL. Currently, this is the only FDA-approved indication for blinatumomab therapy.