The ABCs of Low Blood Cell Count

Debbie Cagen, MSN, ARNP, CPON, Michelle Franco, MSN, ARNP, and Dania Vasquez, MSN, ARNP

Children with cancer often receive treatment that may include both chemotherapy and radiation. These agents primarily can affect the body's hematopoietic system. The authors designed a teaching poster, in both English and Spanish, to assist in teaching the key concepts of low blood cell counts to pediatric patients and their families. Having a child with cancer often is an overwhelming experience, and most parents and family members need to learn new information in a variety of ways to maximize their understanding and retention. This poster was not designed to be a substitute for patient-family teaching but, rather, to serve as a reinforcement tool.

The treatment of pediatric malignancies often involves several months or years of therapy. Children with cancer are at risk for developing low blood cell counts from chemotherapy and, in some cases, radiation therapy. Bone marrow suppression is the single most common dose-limiting toxicity of the majority of chemotherapy agents (Wilson, 1998). The nadir period, when the bone marrow is most suppressed and the blood cell counts are the lowest, usually occurs 10–14 days postchemotherapy initiation (Wilson). At this vulnerable time, infection, fatigue, and bleeding may occur. Therefore, patients and their families must receive comprehensive discharge information about low blood cell counts and what to do at home.

The authors developed an educational teaching poster in English and Spanish titled "ABCs of Low Blood Cell Count." Many Spanish-speaking patients receive care at this institution; every effort is made to offer all teaching information in both English and Spanish.

The purpose of this teaching poster, located in the inpatient unit and the hematology/oncology clinic, is to serve as an adjunct tool to help patients and families learn what precautions to take when blood cell counts are low. This poster was designed to reinforce the information taught, not to replace formal patient-family teaching. Written educational materials (available in English and Spanish) that address this content also are distributed to patients and families as a part of the discharge planning process.

A nurse practitioner graduate student with extensive hematology/oncology nursing experience designed the teaching poster as a special clinical project. This nurse wanted to create an alternative method for teaching or reinforcing important information about low blood cell counts. Several representatives from the departments of nursing, child life, and social work and medical staff had opportunities to provide input before final production. This poster was not targeted to a specific age range or developmental level; it was developed with the intent that all pediatric patients and their families would benefit from the information.

The authors expanded on the written teaching pamphlets in developing this poster knowing that adults, too, often are visual learners. The research available on adult learning indicates that visual aids often reinforce long-term memory. Some memory loss is inevitable, as patients and family members often are overwhelmed with a large amount of information on a daily basis. A key element in helping patients and families retain and use what they learn is to provide memory cues and "crutches" (Broad & Newstrom, 1992, p. 9). These learning aids are invaluable tools to increase retention and emphasize key points.

The poster was designed to be creative, appealing, and large enough to be read easily. Because patients and families often have difficulty understanding how the bone marrow works, the poster uses analogies to maximize understanding and retention of the information presented. For example, the authors used cartoon graphics, such as the white blood cells with boxing gloves, to represent the cells that fight infection. Using visual aids and analogies enhances learning and retention (Silberman & Auerbach, 1990), and these visual aids assist in stressing the key points the authors attempted to convey.

"ABCs of Low Blood Cell Count" emphasizes several key elements for patients at risk for experiencing anemia, thrombocytopenia, or neutropenia. The poster defines the function of red blood cells, white blood cells, and platelets. In addition to describing specific cell functions, the poster also explains what

Submitted April 2001. Accepted for publication July 13, 2001.

Digital Object Identifier: 10.1188/02.CJON.34-37