Evaluating the Frequency of Vital Sign Monitoring During Blood Transfusion: An Evidence-Based Practice Initiative

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Patients with cancer are often dependent on blood transfusions during treatment. Frequent vital sign monitoring during transfusions may interrupt sleep and the patient's ability to ambulate or participate in unit activities. Relying heavily on vital sign findings may also overshadow unmeasurable symptoms of transfusion reaction. The aim of this evidence-based practice initiative was to examine the evidence regarding the optimum frequency of vital sign monitoring for patients undergoing stem cell transplantation receiving blood products and to amend policy and practice to be consistent with the literature.

At a Glance

- Patients with cancer frequently require transfusion support during treatment.
- Inconsistencies exist in recommendations for the frequency of vital sign monitoring during transfusion.
- Examining best practice guidelines suggests that less frequent vital sign monitoring may be appropriate if coupled with thoughtful physiologic assessment.

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Key words: vital sign monitoring; frequency; blood transfusions; evidence-based practice
Digital Object Identifier: 10.1188/15.CJON.516-520

Blood component transfusion is a lifesaving therapy that may be associated with adverse events. Surveillance data indicate that 20,933,000 blood components were transfused in the United States during 2011, with an adverse event rate of 0.24% (U.S. Department of Health and Human Services, 2011). During 2011, the U.S. Food and Drug Administration ([FDA], 2011) received reports of 69 transfusion recipient fatalities, 30 of which were transfusion related, denoting 1 fatality per 697,767 blood components transfused.

Patients with cancer often rely on transfusion because of chemotherapy-induced anemia, which affects as many as 90% of all patients with cancer (Shreay, Desrosiers, Corey-Lisle, & Payne, 2013). The University of Texas MD Anderson Cancer Center (MDACC), a National Cancer Institute (NCI)–designated comprehensive cancer center in Houston, Texas, consists of 656 inpatient beds, including 240 for hematology patients, who accounted for 8,388 admissions in fiscal year 2014 (FY14). These individuals account for a large proportion of the 194,012 blood products transfused at this institution in FY14. Of those, 57,283 were packed red blood cells, and 124,917 were platelets (MDACC, 2015). The rate of transfusion reactions was 0.14% (n = 266), with no fatalities reported (MDACC, 2015).

Data from 128 transfusion reactions included hives or itch (46%), chills (25%), fever (9%), shortness of breath (5%), chest pain (3%), facial edema (2%), and other symptoms (9%). Review indicated that 51% of the reactions were identified through patient self-report of symptoms. Of those patients, 40% had vital sign changes noted after the patient reported symptoms. Only 9% of the transfusion reactions were discovered by routine vital sign monitoring alone.

Because blood components have different antigenic characteristics and may carry infectious agents, contributing to clinically adverse events, the monitoring and documentation of the clinical status of patients during transfusions is essential to safe practice. Accreditation and regulatory bodies, as well as healthcare institutions, have policies and standards to ensure the safe administration of blood components (American Association of Blood Banks [AABB], 2014). Nurses' assessment and management is critical to provide safe transfusion therapy for