Study reviews blood product transfusions amongst pediatric oncology patients

“This study assessed utilization rates, transfusion thresholds, alloantibody development, and transfusion reactions in pediatric oncology patients.” Lieberman et al (2014).

Reference:


Abstract:

Background: Despite the high utilization of blood products by pediatric oncology patients, literature in this population remains scarce. The primary objective of this study was to assess red blood cell (RBC) and platelet (PLT) utilization rates and transfusion thresholds in pediatric oncology patients. The secondary objective was to describe transfusion-related complications including RBC alloantibody development and transfusion reactions.

Study Design and Methods: This epidemiologic cohort study involved pediatric oncology patients at a Canadian academic children’s hospital between April 2002 and December 2011. Demographic, clinical, laboratory, and transfusion variables were collected from the Transfusion Registry for Utilization Statistics and Tracking database, a large database that captures more than 50 demographic and clinical variables as well as comprehensive transfusion information and laboratory test results.

Results: Of 647 pediatric oncology patients, 430 (66%) received a RBC or PLT transfusion or both during this time period. The median transfusion threshold before a RBC and PLT transfusion was a hemoglobin (Hb) value of 72 g/L (interquartile range, 68-76 g/L) and a PLT count of 16 × 10⁹/L (IQR, 10 × 10⁹-23 × 10⁹/L), respectively. Ninety-two percent of the issued RBC and PLT products (7507/8154) were cytomegalovirus negative and 90% were irradiated (7299/8154). RBC alloantibody development and transfusion reactions were reported infrequently in 0.5% (2/423) and 4.5% (8/179) of the patients, respectively.

Conclusion: This study assessed utilization rates, transfusion thresholds, alloantibody development, and transfusion reactions in pediatric oncology patients. The descriptive results from this epidemiologic study provide baseline information to generate hypotheses to be
tested in future interventional studies.

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