What's New in the Patient Safety World

May 2014

Blood Transfusion and Infection Risk

In the past 3 years we've done multiple columns (see list at the end of today's column) highlighting some of the detrimental effects related to red blood cell transfusions and the trend toward more restrictive transfusion strategies in many different scenarios. Unnecessary transfusions have not only clinical untoward effects but add to health care costs.

One of the untoward side effects of transfusion is the risk of infection. A new systematic review and meta-analysis on the relative risk of infection in restrictive vs. liberal transfusion strategies was just published (Rohde 2014). It showed the risk of serious infections was 11.8% with a restricted transfusion strategy vs. 16.9% with a liberal strategy. The number needed to treat (NNT) with the restrictive strategy to prevent one infection was 38. For every 1000 patients in which transfusion is under consideration 26 serious infections could be avoided by using the restrictive transfusion strategy.

The accompanying editorial by Jeffrey Carson (Carson 2014), author of several studies on the detrimental aspects of transfusion and lead author of the revised AABB guidelines on transfusion (see our April 2012 What's New in the Patient Safety World column "New Transfusion Guidelines from the AABB"), highlights some of the other outcomes that benefit from a restricted transfusion strategy. He further highlights, however, that we still don't know the optimal transfusion threshold/trigger, noting some evidence to suggest that may be even lower than the current guidelines (Carson 2012) suggest.

Have your organization's transfusion policies and practices kept up-to-date with current trends and recommendations?

Prior columns on potential detrimental effects related to red blood cell transfusions:

- March 2011 "Downside of Transfusions in Surgery"
- February 2012 "More Bad News on Transfusions"
- January 2012 "Need for New Transfusion Criteria?"
- April 2012 "New Transfusion Guidelines from the AABB"
- February 2013 "More Evidence Favoring Restriction of Transfusions"
- June 2013 "Hopkins Blood Ordering Initiative"

References:

Rohde JM, Dimcheff DE, Blumberg N. et al. Health Care–Associated Infection After Red Blood Cell Transfusion. A Systematic Review and Meta-analysis. JAMA 2014; 311(13): 1317-1326
http://jama.jamanetwork.com/article.aspx?articleid=1853162

Carson JL. Blood Transfusion and Risk of InfectionNew Convincing Evidence (editorial). JAMA 2014; 311(13): 1293-1294
http://jama.jamanetwork.com/article.aspx?articleid=1853139

Carson JL, Grossman BJ, Kleinman S, et al. for the Clinical Transfusion Medicine Committee of the AABB. Clinical Guidelines.Red Blood Cell Transfusion: A Clinical Practice Guideline From the AABB. Ann Intern Med 2012; 157(1): 49-58
http://annals.org/data/Journals/AIM/24329/0000605-201207030-00008.pdf