

Transfusion-Related Adverse Effects Underreported



Two new studies published in *Anesthesiology* shed new light on the prevalence of transfusion-related acute lung injury (TRALI) and transfusion-associated circulatory overload (TACO), the two leading causes of blood transfusion-related deaths in the United States.

Researchers report that postoperative TRALI is significantly underreported and more common than previously thought, with an overall rate of 1.4 percent. While the rate of TACO may be on the decline, there is still significant risk to surgical patients. In 2011, nearly 30 million blood components were transfused in the US, half of which occurred in the operating room. TRALI and TACO mostly occur after intraoperative blood transfusions.

“An accurate understanding of the risks associated with blood transfusions is essential when determining the safety and appropriateness of transfusion therapies for patients,” said Daryl Kor, MD, senior author of both studies and associate professor of anesthesiology at the Mayo Clinic in Rochester, Minnesota. “Our research provides a greater awareness of the incidence of TRALI and TACO in surgical patients, a population that has been perhaps underrepresented in studies in this area. We believe this to be an important first step in our efforts to prevent these life-threatening transfusion complications.”

During these studies, the authors evaluated the incidence of TRALI in 3,379 patients and TACO in 4,070 patients who had received blood transfusions during non-cardiac surgery under general anaesthesia in 2004 and 2011. The researchers used a novel algorithm and a rigorous manual review in order to conduct a detailed epidemiologic analysis.

The first study showed that TRALI occurred in approximately 1.4 percent of surgical patients. Incidence rates were higher in those having surgery inside the chest cavity, on major blood vessels, or having an organ transplant. Surgical patients who received larger volumes of blood were also found to be at increased risk.

The second study found that TACO occurred in 4.3 percent of surgical patients, with higher rates associated with increased volume of blood transfused, advanced age and total intraoperative fluid balance. Again, patients having surgery inside the chest cavity, on major blood vessels, or organ transplants were at greatest risk. Researchers also observed that TACO decreased significantly from 2004 to 2011, from 5.5 to three percent.

Editorial authors Jean-Francois Pittet, MD and Jeffrey Simmons, MD, of the Department of Anesthesiology at the University of Alabama at Birmingham, also point out that the risk of transfusion related adverse reactions remains high. The FDA reports that approximately 38 percent and 24 percent of deaths after transfusion in 2012 were because of TRALI and TACO, respectively.

Dr. Kor stated that the researchers' ultimate goal was to develop a real-time prediction model for these complications, which would enable them to identify those at greatest risk so that strategies could be implemented to reduce this risk.

Source: Newswire

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