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Press Release

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RESTRICTIVE APPROACH TO BLOOD CELL TRANSFUSIONS SAFE FOR HEART SURGERY PATIENTS

Strategy led to fewer transfusions without any risk to kidney health.

Highlights

- A restrictive approach to blood cell transfusions in patients undergoing cardiopulmonary bypass surgery led to fewer transfusions than a more liberal approach, without any increased risk of acute kidney injury.
- The results were consistent in patients with and without chronic kidney disease before surgery.

Washington, DC (June 20, 2019) — In a recent clinical trial of higher risk patients undergoing cardiopulmonary bypass surgery, a restrictive approach to blood cell transfusions resulted in fewer transfusions without putting patients at increased risk of acute kidney injury. The findings appear in an upcoming issue of *JASN*.

Reducing blood cell transfusions during surgery could prevent transfusion-related adverse effects, conserve the blood supply, and reduce healthcare costs, but it might also have negative effects on the kidneys due to a variety of mechanisms. To investigate, Amit X. Garg, MD, PhD, (Lawson Health Research Institute in Ontario) and his colleagues conducted a randomized clinical trial called TRICS-III. The trial included 4531 higher risk patients undergoing cardiopulmonary bypass surgery across 73 centers in 19 countries. Patients were randomized to a restrictive transfusion approach (transfuse only if hemoglobin is below 7.5 g/dL) or a more liberal approach (transfuse if hemoglobin is less than 9.5 g/dL).

Patients in the restrictive transfusion group received 38% fewer transfusions than patients in the liberal group (1.8 vs. 2.9 transfusions, on average, respectively), and the approaches were equally safe with respect to risk of acute kidney injury. Risk were similar between patients with and without chronic kidney disease before surgery.

“With over 20 million cardiac surgeries performed worldwide each year—with it being one of the more common reasons for using blood in the hospital and an average of about 3

units of red blood cells used per patient—this suggests that approximately 20 million units of blood transfusions could be avoided each year without influencing the chance that a patient will develop post-operative kidney injury," said Dr. Garg.

In an accompanying editorial, Iain Macdougall, MD, PhD (King's College Hospital, in the UK) and Toby Richards, MD (University of Western Australia) noted that the study represents one of the largest trials assessing acute kidney injury ever performed, but they pointed to several limitations.

Study co-authors include Neal Badner, MD; Sean M. Bagshaw, MD, MSc; Meaghan S. Cuerden, MSc; Dean A. Fergusson, PhD; Alexander J. Gregory, MD; Judith Hall, MSc; Gregory M.T. Hare, MD, PhD; Boris Khanykin, MD; Shay McGuinness, MBBS MD; Chirag R. Parikh, MD, PhD; Pavel S. Roshanov, MD, MSc; Nadine Shehata, MD, MSc; Jessica M. Sontrop, PhD; Summer Syed, MD, MSc; George I. Tagarakis, MD; Kevin E. Thorpe, PhD; Subodh Verma, MD, PhD; Ron Wald, MD, MPH; Richard P. Whitlock, MD, PhD; and C. David Mazer, MD.

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The article, entitled "Safety of a Restrictive versus Liberal Approach to Red Blood Cell Transfusion on the Outcome of AKI in Patients Undergoing Cardiac Surgery: A Randomized Clinical Trial," will appear online at http://jasn.asnjournals.org/ on June 20, 2019, doi: 10.1681/ASN.2019010004.

The editorial, entitled "Restricting Red-Cell Transfusions in Cardiac Surgery: No Increase in Acute Kidney Injury," will appear online at http://jasn.asnjournals.org/ on June 20, 2019.

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