See Article page 85.

Commentary: Good surgery gets good results: Not so good if your patient is anemic

Robert S. Kramer, MD, FACS

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CENTRAL MESSAGE

Managing preoperative anemia during the blood shortage associated with the COVID-19 pandemic decreases the demand on the blood bank while improving results.

The COVID-19 pandemic has exposed vulnerabilities of our society, such as weaknesses in our public health infrastructure, economic disparities, and structural racism. In their article in this issue of the *Journal*, Perelman and colleagues¹ focus on the vulnerability of cardiac surgical patients with preoperative anemia, a modifiable risk factor in preoperative management. Cardiac surgeons often do not take advantage of the opportunity to address preoperative anemia despite the preponderance of data demonstrating that anemia drives perioperative morbidity and mortality, which is exacerbated by transfusions. Nevertheless, many cardiac surgeons persist in exercising the default treatment of transfusing donated red blood cells, literally harming their patients while draining a limited blood supply.

COVID-19 has been associated with a significant deficit of thousands of units of blood owing to cancelled blood drives and fewer donors. Perelman and colleagues point out how in the face of a profound blood shortage, adult cardiac surgery centers need to reset priorities to align with principles addressed by the American College of Surgeons, the Society of Thoracic Surgeons COVID-19 Taskforce, and the STS Workforce for Adult Cardiac and Vascular Surgery.

Preoperative anemia occurs in up to 40% of adult cardiac surgery patients and is associated with a nearly 5-fold increase in the odds of postoperative mortality, an order of magnitude that should get the attention of any cardiac

surgeon. Nevertheless, Perelman and colleagues relate the astounding fact that most preoperative coronary artery bypass grafting patients are not treated for their anemia. Although the possibility of a blood shortage threatening the ability to administer necessary transfusions, the authors provide step-by-step instructions on how to safely manage these patients. It has taken a tragic pandemic to leverage behaviors that we should have been practicing all along.

Shotgun strategies that manage anemia and decrease transfusions such as described by Spahn and colleagues² (discussed by the authors) or more targeted strategies as discussed by Ranucci and colleagues³ show promise, recognizing that the most common anemias are often a consequence of an inflammatory state generated by multiple comorbidities that often respond to the administration of parenteral iron. We need to address the barriers to practicing sound patient blood management; develop an evidence-based, multidisciplinary approach to caring for patients who might need a blood transfusion; be unwilling to accept a 5-fold increase in complications and death, which is further exacerbated by blood transfusions in our anemic patients. Otherwise, despite good surgery, the results might not be so good.

From the Division of Cardiovascular Surgery, Maine Medical Center, Portland, Me.
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Address for reprints: Robert S. Kramer, MD, FACS, Maine Medical Center, 22 Bramhall St, Portland, ME 04102 (E-mail: kramer@mmc.org).

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