Author has nothing to disclose with regard to commercial support.

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number of antigens that should easily activate the immune system even with appropriate donor matching. I think their article shows us that the immune system is invoked as the culprit of poor patient outcomes too often.

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REPLY: RESPONSE TO LETTER “BLOOD TRANSFUSION”

Reply to the Editor:

In their recently published article in the *Journal*, Latif and colleagues¹ retrospectively demonstrated that patients undergoing resection of non–small cell lung cancer are at higher risk for recurrence and decreased longevity if they receive 2 or more units of blood in the perioperative period. In his correspondence addressing this article, Dr Baciewicz highlights several factors potentially associated both with increasing transfusion requirements and with detriments in overall and recurrence-free survival that are potentially confounding. Whereas the authors of the original article may address the relevance of these individual factors to their findings, this letter should inspire our readers to maintain critical appraisal of our published literature. In our field, causality between an intervention and an outcome is less commonly supported by randomized, prospective data than by assimilation of layers of evidence from retrospective and prospective cohort

studies. For example, the majority of recommendations of the National Comprehensive Cancer Network are based on “lower-level” evidence, with uniform National Comprehensive Cancer Network expert panel consensus that the intervention is appropriate (category 2A). Although there may be no prospective, randomized data showing that allogeneic blood products negatively influence survival or recurrence after resection of human malignancies, there is an overwhelming and accumulating body of retrospective studies, systematic reviews, and meta-analyses demonstrating that perioperative blood transfusion is independently associated with decreased overall or recurrence-free survival after resection of upper and lower gastrointestinal, pancreatic, hepatobiliary, and urologic malignancies. The study of Latif and colleagues¹ addresses a knowledge gap in the surgical treatment of non–small cell lung cancer and is bolstered by a robust sample and rigorous design. I am also interested in the response to Dr Baciewicz by Latif and colleagues¹ and await additional confirmation of their findings in non–small cell lung cancer, while transfusing my patients as infrequently as possible.

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Reference

1. Latif MJ, Tan KS, Molena D, Huang J, Bott MJ, Park BJ, et al. Perioperative blood transfusion has a dose-dependent relationship with disease recurrence and survival in patients with non–small cell lung cancer. *J Thorac Cardiovasc Surg*. 2019;157: 2469-77.

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