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CORR Insights®: Can an Arthroplasty Registry Help Decrease Transfusions in Primary Total Joint Replacement? A Quality Initiative

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Where Are We Now?

Numerous studies have identified the risks associated with allogeneic blood transfusion. Although most of the major complications of transfusion are rare, they can indeed be serious. These include bacterial or viral transmission,

This CORR Insights® is a commentary on the article “Can an Arthroplasty Registry Help Decrease Transfusions in Primary Total Joint Replacement? A Quality Initiative” by Markel and colleagues available at: DOI: 10.1007/s11999-015-4470-z.

The author certifies that he, or a member of his immediate family, has no funding or commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that might pose a conflict of interest in connection with the submitted article.

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This CORR Insights® comment refers to the article available at DOI: 10.1007/s11999-015-4470-z.

immunomodulation, transfusion-related lung injury, and death [3, 4]. In addition, surgical patients who receive allogeneic blood transfusion have been shown to have longer hospital stays and higher risks of complications [2].

Despite these documented adverse events, orthopaedic surgeons remain avid consumers of allogeneic blood transfusions [5, 6]. Nationally, orthopaedic surgeons account for 10% of all blood transfused [7]. In fact, in the current study by Markel et al., prior to implementation of a quality initiative program to reduce transfusion rates, 16% of patient undergoing primary total joint arthroplasty received a transfusion and 6.5% of those transfused had Hemoglobin levels above 8 mg/dL, which is of the established recommendation for transfusion by the American Association of Blood Banks (AABB) [1]. I do not believe their practice site is exceptional in this way; despite published evidence

based guidelines on recommendations for transfusion, there remains substantial variation in transfusion practice throughout the country following total joint arthroplasty.

In the current study by Markel and colleagues, the authors demonstrate that the implementation of a quality initiative program dramatically reduced the proportion of patients receiving a transfusion after joint arthroplasty—from 16% to 3%. More importantly, the proportion of patients receiving transfusion for hemoglobin levels over 8% (transfusions outside the recommendations of the AABB), diminished by 80%.

Where Do We Need To Go?

As we see a shift in healthcare from volume to value, our focus must expand to encompass the overall episode of care and the safety of the patient. The Michigan Arthroplasty Registry Clinical Quality Initiative (MARCQI) was developed to improve patient safety and the quality of hip and knee joint replacement procedures performed in Michigan by promoting

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continuous quality improvement activities throughout the state. Through a simple, yet effective means of: (1) identifying the problem, (2) providing education to healthcare providers on current evidence-based practices, and (3) accurately tracking and providing feedback, the overall safety of the patients has been improved by avoiding unnecessary transfusions. In addition, the study was able to importantly identify that by using a more restrictive transfusion policy, there was no demonstrable increase in complications or hospital readmissions. We cannot practice in a vacuum. Future studies should continue to focus on blood utilization practices across the spectrum of orthopaedics and as more information is discovered, it should be formulated into best practice evidence based care on a local, regional and national level.

How Do We Get There?

While this study focuses on the utilization of allogenic blood transfusions following total joint arthroplasty, it is just one of many areas where the implementation of quality initiatives can help us guide care and improve patient safety. These include venous

thromboembolic prophylaxis and antibiotic prophylaxis in total joint arthroplasty to name a few. Clearly, not all orthopaedic surgeons have at their disposal a MARCQI, but many avenues exist. Currently, both the American Joint Replacement Registry and the Function and Outcomes Research for Comparative Effectiveness in Total Joint Replacement registry are rapidly expanding nationally and can serve as a quality initiative measures database for all. The addition of Level II and Level III data to these registries will only help to strengthen its value to surgeons, hospitals and patients. In addition, the implementation of the electronic medical records will allow for hospitals and practices to more accurately track quality initiative programs. The key will be to identify discrepancies in practices that fall outside of well-established evidence-based medicine, provide awareness of variances among practitioners, and expect accountability and behavioral changes across the spectrum of the episode of care.

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