# Clinical Pathology Abstracts

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## Trends in perioperative RBC transfusion from index cases in five surgical specialties

July 2018—In recent years, greater attention has been given to patient blood management. While contemporary national guidelines recommend restrictive red blood cell transfusion, it is not known whether such transfusions have decreased in surgical patients. Approximately 11 million RBC transfusions are performed annually, and two-thirds of those are for patients in the perioperative period.

The authors conducted a study to analyze whether RBC transfusions are decreasing in surgical patients. They performed a retrospective review of the National Surgical Quality Improvement Program database from 2011 through 2015 and studied five surgical specialties: neurosurgery, thoracic surgery, gynecologic surgery, orthopedic surgery, and vascular surgery. The study compared patient characteristics, preoperative laboratory values, and surgery details. The primary outcome was perioperative RBC transfusion, which was compared over the five-year period. The results showed that RBC transfusion decreased in all surgical specialties except thoracic and gynecologic surgery. The most significant decrease occurred in orthopedic patients, falling from 22.4 percent in 2011 to 6.3 percent in 2015 ($P \leq .0001$). Of interest, high-risk patients had a greater reduction in the number of transfusions compared with low-risk patients, and there were no increases in myocardial infarction or renal failure in any specialty after surgery. The authors concluded that their study shows that RBC transfusions are decreasing among multiple surgical specialties, with no apparent increase in the adverse events of renal failure or myocardial infarction. Due to the infectious and noninfectious complications of blood transfusions, restricting RBC transfusions is important. This study suggests that an upswing in patient blood-management programs and increasing provider awareness are helping to reduce unnecessary transfusions.

Mazzeffi MA, See JM, Williams B, et al. Five-year trends in perioperative red blood cell transfusion from index cases in five surgical specialties: 2011 to 2015. *Transfusion.* 2018;58:1271–1278.

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## Mild TBI and risk of Parkinson disease: a chronic effects of neurotrauma consortium study

Mild traumatic brain injury, or concussion, affects approximately 42 million people worldwide each year. Among the groups most impacted by mild traumatic brain injury (mTBI) are athletes, military personnel, and the elderly. Long-lasting neurobehavioral consequences of mTBI include several psychiatric and neurodegenerative diseases. The Institute of Medicine has concluded that there is evidence to associate moderate to severe TBI with a clinical diagnosis of Parkinson disease. The authors investigated the risk of Parkinson disease after TBI or mTBI among patients in the Veterans Health Administration (VHA) database. They conducted a retrospective cohort study of 325,870 patients from October 2002 to September 2014 using the database. The authors age-matched 1:1 patients with a TBI diagnosis to a random sample of patients without TBI. All patients were 18 years or older and did not have Parkinson disease or dementia at baseline. TBI severity was defined as mild versus moderate-severe. Compared to patients without TBI, those with it were more likely to be diagnosed with Parkinson disease (hazard ratio, 0.58 versus 0.31 percent). TBI severity analysis also showed that patients with mTBI were more likely to be diagnosed with Parkinson disease than controls without TBI (hazard ratio, 0.47 versus 0.31 percent). The authors concluded that prior TBI was associated with an increased risk of being diagnosed with Parkinson disease during a 12-year follow-up and associated with a two-year earlier age of diagnosis of the disease. These data may contribute to understanding the association of TBI and Parkinson disease and the need to identify modifiable risk

factors. The study focuses on the importance of this association for active-duty military and veteran populations, and it may have implications for athletes and other civilians as well.

Gardner RC, Byers AL, Barnes DE, et al. Mild TBI and risk of Parkinson disease: a chronic effects of neurotrauma consortium study. *Neurol.* 2018. doi:10.1212/WNL.0000000000005522.

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