Less Blood Needed Post-Surgery, Says Study

Patients need less blood after surgery than is widely thought. A new study comparing two plans for giving blood transfusions following surgery showed no ill effects from post-poning transfusion until patients develop signs of anemia or their hemoglobin concentration falls below 8 g/dL. Results of the National Heart and Lung and Blood Institute–funded study are published in the *New England Journal of Medicine*. NewYork-Presbyterian Hospital/Columbia University Medical Center is one of 47 centers participating in the FOCUS (Transfusion Trigger Trial for Functional Outcomes in Cardiovascular Patients Undergoing Surgical Hip Fracture Repair) study, led by Dr. Jeffrey Carson.

Dr. William Macaulay, a co-author and member of the FOCUS steering committee, says, "This study will help resolve the debate about how much blood patients need after surgery. More often than not, a blood transfusion isn't necessary, even for elderly and sick patients. The implications are enormous. Reducing the number of blood transfusions will greatly decrease blood use, potentially saving an enormous amount of money," continues Dr. Macaulay.

In the United States, 14.6 million units of blood are transfused each year. Between 60 and 70 percent of blood transfusions are given to patients undergoing surgery and the majority of blood transfusions are given to older patients. Commonly, patients are given a transfusion if their hemoglobin level is at or below 10 g/dL, although a growing number of physicians follow a "restrictive" approach using a lower threshold or symptoms of anemia. In addition, some physicians choose to give blood transfusions to patients with higher blood counts if they are elderly or have cardiovascular disease. Normally, people have blood counts above 12 g/dL.

The study followed 2,016 patients aged 50 years or older with a history of or risk factors for cardiovascular disease, who underwent surgery for hip fracture. They were randomized into two groups: one that received a transfusion when their hemoglobin level fell below 10 g/dL (liberal group) and another that received a transfusion when they had symptoms of anemia, or at a physician's discretion if their hemoglobin was below 8 g/dL (restrictive group). The two groups had similar results for a large array of clinical outcomes, including risk for death within 60 days; functional recovery; risk for heart attack, infection, and falls; and symptoms such as fatigue. The median age was 82 years.

The difference in blood use was striking. Patients in the restrictive group received 65 percent fewer units of blood than the liberal group, and 58.5 percent of patients in the restrictive group did not receive any blood transfusion. "As the medical community further embraces a restrictive approach to post-surgery blood transfusion, it's important that physicians carefully evaluate patients for symptoms of anemia, and not just rely on hemoglobin levels. The patient's body will often tell us when it needs blood," says Dr. Macaulay.

The FOCUS trial confirms findings of the 1999 Transfusion Requirements in Critical Care Investigators (TRICC) trial, which found that outcomes of a 7 g/dL transfusion threshold and a 10 g/dL threshold were similar for patients in an intensive care setting. FOCUS did not find evidence of increased rates of death, heart attack, or congestive heart failure in its liberal group, despite anecdotal evidence.

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