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News

STS Press Release

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Anemia Negatively Impacts Heart Surgery Outcomes

Elective cardiac surgeries should be delayed to treat moderate to severe anemia

Chicago—Anemia is now confirmed as a risk factor for illness and even death following cardiac surgery, according to a study published in the October 2012 issue of *The Annals of Thoracic Surgery*.

Although preoperative anemia has been linked to adverse events in other types of surgery, this is the first study to tie preoperative anemia with postoperative complications, including death, for all types of heart surgery.

Researchers from Istituto di Ricovero e Cura a Carattere Scientifico (IRCCS) Policlinico San Donato in Milan, Italy, compared recorded medical outcomes for 401 adult cardiac surgery patients with severe anemia (hematocrit <30%) to 401 matched non-severely anemic heart surgery patients admitted to IRCCS between 2000 and 2011. They found that the patients with severe anemia had nearly double the operative mortality rate of patients who did not have severe anemia and were at increased risk for stroke, prolonged mechanical ventilation, and longer stays in the intensive care unit. Further investigation found similar results in patients with moderate anemia.

Key Points

- First study to link anemia to poor outcomes for all types of heart surgery.
- Patients with severe anemia have double the mortality of those without anemia.
- Patients and family doctors advised to rectify anemic status before heart surgery.

“Unlike other recognized risk factors for cardiac surgery patients, such as advanced age and poor kidney function, anemia can be corrected with iron supplementation and medications that stimulate red blood cell production,” said lead author Marco Ranucci, MD. “Unfortunately, to correct anemia we need two to three weeks before the operation, which may be too long for many patients to wait.”

Iron-deficiency anemia may result from blood loss, iron-poor diet, or insufficient iron absorption from food. Consequently, older adults are at risk for this common, easily treated anemia. Currently, preoperative anemia is not considered a risk factor for survival following heart surgery by the existing risk scores, although anemia’s role had previously been investigated in outcomes for coronary artery bypass grafting (CABG) surgery.

“Until it can be clearly demonstrated that correcting anemia improves outcomes, I think that working to correct and preserve the natural hemoglobin in a patient’s blood prior to surgery is a viable and safe option,” Dr. Ranucci said.

Anemia should be identified in advance of heart surgery

In an invited commentary in the same issue, Jeremiah R. Brown, PhD, MS, an Assistant Professor at The Dartmouth Institute for Health Policy and Clinical Practice at the Geisel School of Medicine in Hanover, NH, wrote that the Ranucci paper presents a convincing case for adding severe anemia to current cardiac surgery preoperative mortality models and called on cardiothoracic societies in the US and Europe to evaluate existing models.

“Dr. Ranucci's work demonstrates that cardiac surgeons need to know about the preoperative presence of severe anemia when estimating the operative mortality risk,” said Dr. Brown. “Doing so will provide patients with a more accurate estimate of operative risk than currently available in our risk models for informing surgeons and patients about the possible risks of surgery.”

He added that certain diagnostic procedures could be planned well ahead of elective surgeries, such as CABG surgery, to help identify anemia and provide time to treat it. “This extra time would allow surgeons to review the results and determine a strategic plan,” said Dr. Brown.

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For a copy of the study and invited commentary, contact Amy Jenkins at 312-202-5865.

Founded in 1964, STS is a not-for-profit organization representing more than 6,500 cardiothoracic surgeons, researchers, and allied health professionals worldwide who are dedicated to ensuring the best possible outcomes for surgeries of the heart, lung, and esophagus, as well as other surgical procedures within the chest. The Society’s mission is to enhance the ability of cardiothoracic surgeons to provide the highest quality care through education, research and advocacy.

The Annals of Thoracic Surgery is the official journal of STS and the Southern Thoracic Surgical Association.