

THE IMPACT OF ANEMIA AND TRANSFUSIONS ON MORTALITY IN SURGICAL PATIENTS WITH SEVERE SEPSIS

Subramanian A, Placio CH, Algendy A, Awad SS
Michael E DeBakey VA Hospital, Houston, TX

Background: The optimal hematocrit (Hct) level in sepsis is unknown. Recommendations have varied from historical Hct of 30% to more recent restrictive strategies of Hct of 21%. This has not been specifically investigated in patients with severe sepsis. In addition, other reports have suggested that transfusion of packed red blood cells (PRBCs) may be harmful to critically ill patients. Our objective was to determine the impact of anemia (Hct < 30%) and transfusion of PRBCs on ICU mortality in surgical patients with severe sepsis.

Methods: Retrospective chart review of septic patients was performed. Demographic data, comorbidities, APACHE II score, source of sepsis, transfusions received, length of stay, and 28-day mortality were collected. Students t test and Chi Square were used for statistical analyses.

Results: From 2000-2008, 194 septic patients admitted to the medical (MICU) and surgical (SICU) intensive care units were identified. Mean APACHE II score was 17 with no difference between medical or surgical patients. Mean Hct of patients with admission anemia was 25 +/- 0.38%, while those without anemia had mean Hct of 36 +/- 0.48%. Overall, septic patients admitted with anemia had a higher 28-day mortality (34% vs. 21%, p = 0.039). This mortality difference was only observed in anemic surgical septic patients (Surg/Anemia-25% vs. Surg/NonAnemia-6%, p = 0.047; Med/Anemia-37% vs. Med/NonAnemia-28%, p = 0.25). Overall, transfusion did not impact mortality (PRBC-28% vs. No PRBC-24%, p = 0.52). In surgical compared to medical septic patients, transfusion resulted in an increased survival (Surg-86% vs Med-66%, p = 0.017).

Conclusion: In septic patients, admission anemia was associated with an increased mortality, most apparent in surgical patients. Transfusion did not impact mortality and in fact, surgical patients that received transfusions had a significant increase in survival. This may be related to improved oxygen delivery. Given that there was not a significant increase in mortality with transfusions, maintaining a higher Hct in septic surgical patients may be warranted.