

Intravenous Iron May Improve Outcomes in Elderly Patients with Operative Hip Fractures

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Purpose: Hip fractures are a common injury in elderly patients with high morbidity and mortality rates. The incidence of anemia in these patients is substantial; many require allogenic blood transfusions, which are costly and can have detrimental effects on patients. Studies have targeted reducing transfusion rates and improving outcomes using intravenous (IV) iron with mixed results. However, these studies took place before a shift in patient care toward restrictive transfusion protocols and early operative fixation. The presented study examined the effects of IV iron on patients with hip fractures, undergoing surgery within 48 hours, and being treated with a highly restrictive transfusion protocol. We hypothesized that the use of IV iron will reduce transfusion rates, hospital length of stay, and 30-day readmission rate.

Methods: A retrospective chart review (December 2015-December 2017) was performed on patients with fractures of the proximal femur. Patients were included if they were over the age of 60 years, underwent hemiarthroplasty or surgical fixation of their fracture, and had a recorded hemoglobin of less than 11g/dL. An experimental group (n = 119), which received 300 mg of IV iron (iron sucrose) when their hemoglobin fell below 11g/dL, was compared to a control group (n = 120) with respect to transfusion rate, length of stay, and 30-day readmission rate.

Results: There was a trend toward shorter length of stay in patients receiving IV iron (P = 0.063). In addition, there was a trend toward a decrease in 30-day readmission rate (P = 0.051) with a 59% reduction in the odds of 30-day readmission when a patient received IV iron. The study found no significant difference in transfusion rates for patients receiving IV iron (P = 0.118). It should be noted that the experimental group contained more patients with peritrochanteric fractures (P = 0.002) and undergoing intramedullary nailing (P = 0.035) than the control group.

Conclusion: This study presents a compelling argument for further research regarding the use of IV iron in elderly patients undergoing surgery for a hip fracture. Transfusion rates and length of stay are increased in patients with intertrochanteric fractures and patients undergoing intramedullary nailing. Since there were a higher number of these patients in the IV iron group, this may have falsely elevated transfusion rates and length of stay. A large, prospective, randomized controlled trial should be performed to assess the true effects of perioperative IV iron on elderly hip fracture patients.