

**The Impact of Blood Transfusion Utilization on Outcomes and Complications Following Total Hip Arthroplasty in Patients with Sickle Cell Anemia: A Propensity Score-Matched Analysis**

**Introduction:**There is limited data evaluating impacts of blood transfusion on long-term outcomes of total hip arthroplasty (THA) patients with sickle cell anemia (SCA). This study compares outcomes and complication rates in SCA patients who receive blood transfusion following THA.

**Methods:**Using the National Inpatient Sample, SCA patients admitted from 2005 to 2012 who underwent THA were reviewed based on blood transfusion status. A 1:1 propensity score-match (PSM) by age, gender, and obesity status was done before analysis.

Univariate analyses evaluated demographics, complications, later revisions, and mortality. Multivariate binary logistic regression models identified correlations in blood transfusion and postoperative THA outcomes in SCA patients, controlling for age, sex and obesity.

**Results:**402 PSM patients were identified(blood transfusion: n=402; no blood transfusion:n=402). The blood transfusion cohort had a greater length of stay (5.91 days vs. 4.57 days, $p<0.001$ ) and total hospital charge (\$67,079.44 vs. \$55,318.02, $p<0.001$ ) than the no blood transfusion cohort but a comparable Deyo score ( $p=0.234$ ). The average incidence rate from 2005 to 2012 for SCA patients with blood transfusion undergoing THA is 1.64 per 1,000,000 person-years which increased 4.22% during this period. With a 1:1 PSM, patients with blood transfusion compared to those without, had comparable rates of surgical and medical complications, THA revisions, or mortality (all, $p>0.05$ ). Blood transfusion use was not an independent risk factor of surgical complications, medical complications, THA revisions or mortality (all, $p>0.05$ ).

**Conclusion:**In the general SCA population undergoing THA, patients with blood transfusions had longer stays and hospital charges but comparable Deyo score. Both cohorts had comparable risk for surgical and medical complications, revision surgery, and mortality. These results can influence postoperative expectations, management, and concerns in this patient cohort.