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**Preoperative Transfusion is Associated with Higher Risk of Readmission Among Patients Undergoing Surgery for Femoral Shaft Fracture**

Introduction:

Preoperative blood transfusion may be necessary for surgical optimization but carries potential complications. This study assesses the relationship between preoperative transfusion and 30-day hospital readmission among patients undergoing open reduction and internal fixation (ORIF) for femoral shaft fractures.

Methods:

A retrospective cohort study using the National Surgical Quality Improvement Program (NSQIP) database (2012-2021) included patients aged  $\geq 18$  years undergoing ORIF for femoral shaft fractures. The primary exposure was preoperative transfusion  $\geq 1$  unit of whole or packed red blood cells within the 72-hour preoperative period. Patients were divided into two cohorts based on preoperative transfusion status. Confounders included basic demographics, baseline health, and procedure characteristics. Univariate analyses employing chi-square testing were used to identify differences between cohorts. Multivariable regression analysis adjusting for potential confounders was utilized to identify the risk of preoperative transfusion on 30-day hospital readmission.

Results:

Among 6,812 ORIF cases, 373 (5.48%) received a preoperative transfusion. In both cohorts, most patients were aged 80-89 years, White, non-Hispanic, female, normal BMI, no chronic immunosuppression, no diabetes, no smoking, ASA classification of 3, independent function status prior to surgery, elective case designation, presented from home, and received general anesthesia [Table 1]. Multivariable regression analysis showed that preoperative transfusion was associated with 1.57 times higher odds (95% CI 1.06 to 2.26;  $p=0.02$ ) of 30-day readmission [Table 2].

Conclusion:

Patients who received preoperative transfusion had an increased risk of 30-day hospital readmission following ORIF for femoral shaft fracture. Further studies into risk stratification and medical management may help to reduce readmission, especially among patients who need a transfusion during the preoperative period.