

Can an Outpatient Risk Assessment Tool Predict Who Needs Postoperative Hemoglobin Monitoring?

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Introduction: There have been recent improvements in surgical technique and perioperative blood management after total joint arthroplasty (TJA) that have decreased rates of transfusion. However, as many surgeons transition to outpatient total joint replacement, obtaining routine postoperative labs may be more challenging. Therefore, the following study was performed to determine if a commonly utilized outpatient assessment tool could predict who is at risk for requiring postoperative hemoglobin screening.

Methods: We performed a retrospective study of consecutive unilateral primary total knee arthroplasties (TKA) and total hip arthroplasties (THA) performed at a single institution. Retrospectively collected data included: preoperative and postoperative hemoglobin levels, need for blood transfusion, length of hospital stay, and Outpatient Arthroplasty Risk Assessment (OARA) score.

Results: There were 1,392 patients screened; however, only 504 patients met inclusion criteria. Mean age at time of primary arthroplasty was 65.3 years. 216 (42.9%) were primary THAs and 288 (57.1%) were primary TKAs. Six patients required a blood transfusion postoperatively (1.19%). Transfusion after surgery was associated with lower preoperative hemoglobin (mean of 10.9 vs. 13.8, $p=0.0001$), lower postoperative day one hemoglobin (mean of 8.5 vs. 11.3, $p=0.00005$), longer length of stay (1 vs. 2 days, $p=0.0004$), higher OARA score (mean of 60.0 vs. 5.0, $p=0.0011$), and total hip arthroplasty ($p=0.00595$). All patients that received a transfusion had an OARA score >34 . Blood transfusion was not associated with age, sex, BMI or ASA score.

Conclusions: Risk of blood transfusion after primary TJA is uncommon, with an incidence of 1.19%. Transfusion is associated with low preoperative hemoglobin and higher OARA scores. The OARA, not ASA, score reliably identified patients at risk for postoperative blood transfusion.