

Topical Tranexamic Acid and Blood Loss Complications in Femoral Neck Fractures Treated with Hemiarthroplasty

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Purpose: Tranexamic acid (TXA) has been successfully utilized in many areas of medicine. Its use in orthopaedics, particularly traumatic fracture care, is evolving. Our goal was to determine if treatment with topical TXA for geriatric femoral neck fractures treated with hemiarthroplasty resulted in decreased postoperative complications associated with acute blood loss during hospitalization and any thromboembolic event within 6 months following surgery.

Methods: Consecutive patients over age 65 years operated for hip hemiarthroplasty following femoral neck fracture of nonpathologic origin were studied. TXA was used per surgeon preference. Pre- and postoperative laboratory tests were performed according to standard practice. All data extraction occurred via chart review. Postoperative complications of interest included hematoma formation, blood transfusion, reoperation, deep vein thrombosis, myocardial infarction, pulmonary embolism, and cerebrovascular accident.

Results: 84 patients (63 nonTXA and 21 TXA), matched 3:1 by gender and age \pm 2 years, were included in analysis. Average age was 83.7 years (36 males, 48 females). There were no significant differences in the mean postoperative day 1 hemoglobin or hematocrit between groups. However, there were significant differences in transfusion rates ($P = 0.017$) as well as lowest hemoglobin (10.3 vs 9.2, $P = 0.011$) and hematocrit (32.6 vs 28.5, $P = 0.003$) values during hospitalization. This difference resulted in 14 transfusions in the nonTXA group (22% of patients, average 1.5 units of blood required, range 1-3) and zero transfusions in the TXA group. None of the TXA patients experienced a postoperative thromboembolic event and 1 nonTXA patient suffered a cardiac arrest within 3 months of hemiarthroplasty. There were no patients in either group who developed postoperative bleeding-related complications.

Conclusion: In our series, hemiarthroplasty treated with intraoperative topical TXA resulted in zero postoperative blood transfusions, higher overall postoperative hemoglobin and hematocrit levels, and no rehospitalization for bleeding-related complications.