Does Topical Tranexamic Acid Decrease Postoperative Transfusion Rates in Fragility Intertrochanteric and Femoral Neck Fractures?

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Purpose: Surgical treatment of fragility hip fractures accounts for 300,000 cases in the United States annually. Transfusion of packed red blood cells occurs during postoperative care in up to 70% of cases. Therefore, strategies to decrease transfusion rates are necessary. Prior research has shown that the use of topical tranexamic acid (TXA) in intertrochanteric (IT) fractures treated by cephalomedullary nail (CMN) resulted in decreased transfusions. We hypothesized that topical TXA would result in fewer transfusions in IT hip fractures treated with a CMN and femoral neck fracture FNF treated with a cemented hemiarthroplasty (HA).

Methods: A chart review was performed on 390 consecutive patients who underwent operative treatment of IT and FN fractures. Patients were grouped into topical TXA (3000 mg) or no TXA. Subgroup analysis was done by fracture location: FNF (31B) and IT (31A). Transfusion threshold was hemoglobin of <7g/dl, hematocrit $<21\%$, or symptomatic anemia. Transfusions and complications (thromboembolic, cardiovascular, and major) were recorded up to 30 days postoperatively.

Results: 192 patients received topical TXA and 198 received no TXA. There was no difference in any patient demographics between TXA and non-TXA ($p > 0.050$). There were 139 (72%) females in the TXA group and 149 (75%) in the non-TXA group. For the TXA group, average age was 83.2 (yrs), BMI was 24.25, and length of stay 6.51 (days). For the non-TXA group, average age was 81.3 (yrs), BMI was 24.40, and length of stay 5.91 (days). Regarding fracture location, the TXA group had 65 (34%) FNF and 127 (66%) IT. Non-TXA group had 72 (36%) FNF and 126 (64%) IT. There was a difference in transfusion rates between the TXA and non-TXA groups (36% vs 47%, $p = 0.027$). The IT group had less transfusions with TXA (TXA 39%, 61%, OR 0.419, 95% CI, 0.252-0.694, $p = 0.001$). There was no difference in the FNF group (TXA 29%, Non-TXA 22%, $p = 0.348$). There were no differences in complications ($p > 0.050$).

Conclusion: We observed that topical TXA decreased the chance of getting a transfusion by 22% in the IT group treated with a CMN. However, there was no difference in the FNF group treated with HA. Therefore, topical TXA is a transfusion reduction strategy that appears to be safe and effective in reducing transfusions in IT fractures treated with CMN while not being effective in HA treated FNF.