

## **Interaction of Preoperative Chemoprophylaxis and Tranexamic Acid Use Does not affect Transfusion in Acetabular Fracture Fixation**

Harsh Wadhwa<sup>1</sup>, Yousi Angeli Oquendo, Michael James Chen, Seth Stravers Tigchelaar, Lauren P Joseph<sup>2</sup>, Julius A Bishop, Michael J Gardner<sup>3</sup>

<sup>1</sup>Stanford University, <sup>2</sup>Orthopaedic Surgery, Lauren Joseph, <sup>3</sup>Stanford University Surgery

### **INTRODUCTION:**

While the effect of tranexamic acid (TXA) use on transfusion rates after acetabular fracture fixation are unclear, previous evidence suggests holding deep vein thrombosis (DVT) chemoprophylaxis may be a modifier of this relationship. This study examines the interaction of holding DVT chemoprophylaxis and TXA use on in-hospital outcomes of acetabular fracture surgery.

### **METHODS:**

This is a retrospective review of 305 patients with acetabular fractures (AO/OTA 62) that underwent open reduction and internal fixation. We compared three perioperative treatment groups— 1) no intraoperative TXA (nT), 2) intraoperative TXA and no preoperative DVT prophylaxis (TnD), 3) intraoperative TXA and preoperative DVT prophylaxis (TyD). Baseline demographics and operative details were collected. The primary outcomes were need for intraoperative or postoperative transfusion. Analysis of variance (ANOVA) and Kruskal-Wallis were used where appropriate to compare continuous variables. Chi-squared and Fisher's exact tests were used where appropriate to compare categorical variables. Multivariate models were constructed to assess risk factors for each primary outcome.

### **RESULTS:**

Baseline demographics were similar. The TyD group had lower median injury severity scores ( $p < 0.001$ ). The TXA groups had shorter operative time, with the TyD group having the shortest of the three groups ( $p=0.002$ ). The TXA groups also had significantly less intravenous (IV) fluids administered compared to the no TXA group ( $p=0.012$ ). The TyD group had significantly lower preoperative ( $p=0.017$ ) and postoperative ( $p<0.001$ ) platelets. In multivariable regression models, IV fluids, EBL, and preoperative hematocrit were significantly associated with intraoperative transfusion and age and Charlson Comorbidity Index were associated with postoperative transfusion. Interaction of preoperative DVT chemoprophylaxis and TXA use was not associated with need for intraoperative or postoperative transfusion.

### **DISCUSSION AND CONCLUSION:**

In this study, holding DVT prophylaxis was not a modifier of the effect of TXA use on blood loss or need for transfusion. Interaction of these factors may not be as clear as previously described in the literature.