

**Does Tranexamic Acid Reduce Blood Loss in Acetabular Fracture Surgery?**

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**Purpose:** Tranexamic acid (TXA) has been shown to reduce blood loss in arthroplasty surgery, but the effect of TXA used during fixation of acetabular fractures remains unclear. The objective of the study is to determine whether intraoperative TXA administration reduces estimated blood loss (EBL) or the required units of packed red blood cells (pRBCs) infused during surgery for acetabular fractures.

**Methods:** This retrospective cohort study included 412 acetabular fractures requiring operative fixation from 2010 to 2018 at a single Level-I trauma center. Simple posterior wall fractures were excluded. The treatment group comprised 128 patients that received intraoperative intravenous (IV) TXA and were compared to 284 control patients that did not receive intraoperative IV TXA. There were no differences in the observed demographic and injury characteristics between the 2 groups. The treatment group had less time from injury to surgery than the controls (2.0 days vs 2.7 days,  $P < 0.05$ ). The primary outcome was intraoperative EBL as reported in the anesthesia records. The secondary outcome was 1 or more units of pRBCs infused intraoperatively. Multivariable regression models, adjusting confounders that included patient age, sex, time from injury to surgery, and operative time were used to estimate the effect of TXA on study outcomes.

**Results:** There was no association between intraoperative IV TXA administration and EBL in the unadjusted (TXA: 1001 mL vs no TXA: 980 mL,  $P = 0.74$ ) or adjusted models (TXA: 1004 mL vs no TXA: 968 mL,  $P = 0.71$ ). However, intraoperative IV TXA was associated with a 39% reduction in the likelihood of receiving 1 or more units of pRBCs infused intraoperatively (adjusted odds ratio = 0.61,  $P < 0.05$ ).

**Conclusion:** These data present a mixed signal regarding the effectiveness of TXA in acetabular surgery. TXA use was associated with a significant decrease in the odds of intraoperative transfusion (39% less,  $p < 0.05$ ). However, there was no evidence that TXA reduced EBL. It is unknown if this finding reflects noise in the outcome measure of EBL or is a valid finding. Further high-quality prospective studies are needed to determine if there is a benefit to TXA in acetabular surgery.