

**Tranexamic Acid in Orthopaedic Trauma Surgery: A Meta-Analysis**

*Elizabeth Gausden, MD; Rameez Qudsi, MD; Brian O’Gara, MD; Myles D. Boone, MD; Joseph Ruzbarsky, MD; Dean G. Lorich, MD<sup>1</sup>*

<sup>1</sup>Hospital for Special Surgery, New York, New York, USA

**Purpose:** Tranexamic acid (TXA) is an antifibrinolytic that stabilizes thrombus and decreases blood loss in the trauma setting or during surgery. The preliminary studies of TXA use in patients undergoing fracture surgery are promising. The purpose of this study was to systematically review the use of TXA in orthopaedic trauma surgery and quantify the efficacy of TXA in reducing the risk of receiving a blood transfusion and perioperative blood loss in orthopaedic trauma patients.

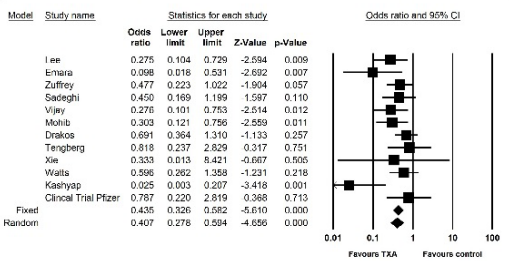
**Methods:** A systematic literature search was performed using MEDLINE, Embase, ClinicalTrials.gov, and conference proceeding abstracts from 2014-2016. The primary outcome measure was the risk of receiving a blood transfusion in the TXA group versus control. A meta-analysis was performed to construct a combined odds ratio (OR) of receiving a blood transfusion, mean difference (MD) of blood loss, and OR of thromboembolic events.

**Results:** 12 studies were included in the quantitative analysis (1333 patients). The risk of blood transfusion was significantly less in patients who were administered TXA compared to controls (OR 0.407; 95% confidence interval [CI] 0.278-0.594,  $I^2 = 34$ ,  $Q = 17$ ,  $P < 0.001$ ) (Fig. 1). There was no significant difference in the reduction of risk of blood transfusion between the studies of intravenous versus topical TXA. ( $Q$ -value = 0.067,  $P = 0.795$ ) (Fig. 2).

**Conclusion:** This meta-analysis indicates that TXA has the potential to reduce both the risk of blood transfusions and blood loss in orthopaedic trauma patients. In this study, no significant effect on the rate of thromboembolic events was identified.

POSTER ABSTRACTS

**Rate of Transfusion: Effect of TXA Administration**



**Rate of Transfusion: Effect of TXA Administration by Route**

