

## **ORAL TRANEXAMIC ACID REDUCES TRANSFUSIONS AND PROCEDURE TIME IN TOTAL KNEE ARTHROPLASTY**

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**Introduction:** Intraoperative blood loss is a known potential complication of total knee arthroplasty (TA) often resulting in the need for postoperative transfusions. Tranexamic acid (TA) has been shown to reduce intraoperative blood loss and postoperative transfusion in patients undergoing (TKA). While there are numerous studies demonstrating the efficacy of intravenous and topical TA in patients undergoing TKA, there are comparatively few demonstrating the effectiveness and appropriate dosing recommendations of oral formulations.

**Purpose of the Study:** To evaluate the transfusion rate on a targeted orthopedic population of those who received OTA compared to those who did not.

**Identification of the problem:** There is a gap in the literature regarding oral TA use and optimal dosing. Evidence based data is warranted to support safe and effective use of Oral Tranexamic Acid in the total joint arthroplasty population.

**Methodology:** A retrospective cohort study of 2230 TKA procedures at a single institution identified 3 treatment cohorts: TKA without use of TA (no-OTA, n=968), TKA and single dose TA (single-dose OTA, n=164), and two-dose pre and post dose TA (two-dose OTA, n=1098).

**Results:** The primary outcome was transfusion rates which decreased from 24.1% in no-OTA group to 13.6% in the single-dose group OTA ( $p<0.001$ ) and 11.1% in the two-dose OTA group ( $p<0.001$ ). Procedure time was reduced from 81 minutes to 76/77 minutes in one/two dose groups. Postoperative hemoglobin decline was reduced. Blood exposure was reduced. Cost comparison of IV to PO is remarkable, therefore savings would be substantial.

**Conclusion:** This study represents, to our knowledge, the largest single-center unselected series examining the effectiveness of oral TA, includes 14 surgeons, and suggests the effectiveness of OTA is consistent despite individual variations in operative technique and perioperative management.

**Implications for perianesthesia nurses and future research:** Perianesthesia nurses provide much of the care involving blood transfusions. Decreasing exposure to blood products is a safety benefit to nurses and patients. Oral TA is a large pill and can be challenging for patients to swallow. This study shows the importance of administering OTA/TA in reducing transfusion requirements, OR time and operating costs. Future research should focus on the efficacy of a single preop dose of OTA.