

## **Topical Tranexamic Acid in Revision Total Knee Arthroplasty Reduces Transfusion Rates and May Be Associated with Earlier Functional Recovery<sup>◇</sup>**

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**Introduction:** Although use of tranexamic acid (TXA) has been proven to be effective in reducing blood loss/transfusions after primary total knee arthroplasty (TKA), there is a lack of evidence for its use in revision TKA. The purpose of this study was to evaluate if use of topical TXA in revision TKA is safe and associated with reduced blood loss/transfusion rates.

**Methods:** The study group was comprised of 76 revision TKAs who received 3g of topical TXA, compared to a control group of 205 revision TKAs, receiving no TXA. Each group was further stratified into subgroups according of the type of revision. All patients were followed for a minimum of 6 weeks. The blood loss, transfusions, changes in hemoglobin-hematocrit levels, Knee Society Score (KSS) and complications were recorded. Multivariate logistic regression was modelled to identify the risk factors of blood transfusion after revision TKA.

**Results:** The mean estimated blood loss, hemoglobin drop, and the transfusion rate were significantly lower in the study group than the control ( $p=0.008$ ,  $p<0.001$ ,  $p<0.001$ , respectively). Hidden blood loss was similar between the two groups ( $p=0.12$ ). At six weeks, the improvement in the KSS was significantly higher in the study group than in the control ( $p<0.001$ ). No significant differences were found in the rate of thromboembolic complications between the two groups ( $p=0.92$ ). In the subgroup analysis, when both components were revised, the relative risk of transfusion was significantly lower with the use of TXA (RR=0.227; IC 0.0593–0.860;  $p=0.004$ ). TXA was the main factor associated with avoiding blood transfusion (OR=0.087, 95% CI: 0.03-0.24;  $p<0.001$ ).

**Conclusions:** Topical TXA in revision TKA is safe and effective in reducing blood loss and transfusions. This effect is enhanced when both components are revised. Additionally, the use of TXA may improve early functional outcomes.

◇ The FDA has not approved tranexamic acid for use in orthopaedics.