Paper #3

Tranexamic Acid in Total Joint Arthroplasty: Safe and Effective for All Patients?

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Notes

Introduction: A growing body of published research on tranexamic acid (TXA) suggests it is effective in reducing blood loss in total joint arthroplasty (TJA). Despite the extensive literature, no consensus has been reached on the preferred route of administration, dosage, timing of administration or contraindications to its use. The purpose of this network meta-analysis (NMA) was to support the combined consensus statement of the American Association of Hip and Knee Surgeons, American Academy of Orthopaedic Surgeons, Hip Society, Knee Society, and American Society of Regional Anesthesia on the use of TXA in primary TJA.

Methods: We searched OVID-MEDLINE, EMBASE, Cochrane Reviews, SCOPUS, and Web of Science databases for all publications before October 2016 on TXA in primary TJA. All included studies underwent qualitative and quantitative homogeneity testing. Direct and indirect comparisons were performed for all treatments and the results of the NMA were tested for consistency.

Results: After critical appraisal of the available 1,767 publications, only articles identified as representing the best available evidence were included. Topical, IV, and oral TXA formulations were all statistically superior to placebo in terms of blood loss and risk of transfusion. TXA reduced blood loss and the risk of transfusion irrespective of the dose timing when compared to placebo (p < 0.05 for all comparisons). No difference was observed between all TXA formulations and placebo with regards to risk of thromboembolic events (p < 0.05 for all comparisons).

Conclusions: TXA formulation has a direct effect on blood loss and risk of transfusion. No TXA formulation portended a higher risk of thromboembolic event. We conclude the routine use of TXA in the setting of a primary TJA is safe and effective for nearly all patients. We plan to present the combined consensus statement on the use of TXA in primary TJA.

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