AAHKS Clinical Research Award

Postoperative Oral Tranexamic Acid in Total Knee Arthroplasty: A Randomized Controlled Trial

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Introduction: Perioperative tranexamic acid (TXA) use with TKA is widely accepted today. Recently, few international groups have published on the safety and outcomes of extending TXA use in the postoperative period. Through a double-blinded, randomized control trial, we aimed to investigate the safety and clinical efficacy of extended postoperative oral TXA use in TKA performed in an American, free-standing ambulatory surgery center (ASC).

Methods: Based on a power analysis, 40 patients undergoing primary TKA were randomized into two groups: extended oral TXA vs. placebo. Both groups received a standard 1g intravenous TXA dose prior to incision and at the time of closure. The extended TXA group received an additional 1.95g oral TXA dose following ambulation the day of surgery, plus postoperative day 1, 2, and 3. Patients with a history of venous thromboembolism (VTE) or cancer were excluded. All patients received twice-daily 81mg aspirin for VTE prophylaxis. Patients were followed on post-op day 3, 2 weeks and 6 weeks. Paired t-tests determined statistical significance.

Results: Extended TXA patients showed significantly increased knee flexion at 6 weeks (116.05 vs. 106.5, p=.0308), improved VAS at 2 (2.5 vs. 3.85, p=0.039) and 6 weeks (1.35 vs. 2.8, p=0.011) and superior KOOS JR at 2 (66.87 vs. 60.63, p=0.03) and 6 weeks (73.33 vs. 62.47, p=0.0019) compared to placebo patients. No significant differences were found for change in hemoglobin levels or terminal knee extension at any time points. No adverse events were noted in either cohort.

Conclusion: When compared to placebo, the extended use of oral TXA in the postoperative period may safely result in early improved motion, pain and functional scores. Further investigation on long-term outcomes and the duration/dosing of postoperative TXA use is warranted.

Notes