No Effects of Extended Oral Tranexamic Acid following Total Knee Arthroplasty on Postoperative Pain and Range of Motion: A Randomized Controlled Trial

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INTRODUCTION:
The implementation of perioperative intravenous tranexamic acid (TXA) protocols in total knee arthroplasty have led to improved outcomes related to decreased blood loss and decreased transfusion rates. A recent RCT demonstrated that there may be additional benefits to extended oral TXA for improving pain and function in the early post-operative period. In this double-blind RCT, we examined the effects of extended oral TXA following primary total knee arthroplasty on post-operative pain, range of motion (ROM), ambulation status, and opioid usage.
METHODS:
Forty-eight patients undergoing primary total knee arthroplasty were randomized to 2 groups: extended oral TXA (EOTXA) vs placebo. All patients received 1 gram of intravenous TXA prior to incision and in the post-operative recovery area. Patients in the EOTXA group (n=24) received 1.95 g of oral TXA daily from post-operative day (POD) 1 through POD 3. Patients with a history of venous-thromboembolism or actively treated cancer were excluded. The primary outcome in this study was the visual analog scale (VAS) pain score in the three-month post-operative period. Secondary outcomes include ROM, ambulation status (assistive device usage), and opioid consumption.
RESULTS:
There was no statistically significant difference in VAS pain scores at any time point: POD1 Placebo 5.1 vs EOTXA 5.6, (p=0.30); POD2 4.4 vs 4.8, (p=0.46); POD3 3.8 vs 3.9, (p=0.75); POD7 3.6 vs 4.0, (p=0.42); 2 Week 3.1 vs 3.0, (p=0.91); 6 Week 2.2 vs 1.4, (p=0.11); 12 Week 1.7 vs 1.3, (p=0.45). In addition, there were no significant differences in ROM at 2 weeks, 6 weeks, and 12 weeks postoperatively, daily opioid consumption (p=0.89), and ambulation status at 2 weeks (p=0.56), 6 weeks (p=0.63), and 12 weeks (p=0.44) postoperatively.
DISCUSSION AND CONCLUSION: In the largest RCT to date, this study found no significant difference in pain scores, opioid consumption, or functional outcomes with the addition of extended oral TXA following primary total knee arthroplasty. Based on these results, broad utilization of this protocol in primary TKA may not be warranted.