Intravenous Tranexamic Acid Reduces Complications following Surgical Treatment of Pathologic Fractures of the Lower Extremity

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INTRODUCTION:
Tranexamic acid (TXA) is being increasingly utilized in orthopaedic surgery; however, data regarding its use in orthopaedic oncologic procedures remains limited. Therefore, the aim of this study was to retrospectively evaluate the postoperative complications associated with administration of intravenous (IV) TXA in patients undergoing surgical fixation for neoplastic pathologic fractures of the lower extremity.
METHODS:
Patients who underwent surgical intervention for neoplastic pathologic lower extremity fractures between 2015 and 2021, as defined by ICD-10 coding, were identified using a large insurance database. This cohort was subsequently divided by receipt of TXA (TXA[+]) or not (TXA[-]) on the day of index surgery. Patient demographics, hospital factors, patient comorbidities, and 90-day complications were assessed and compared between patients who did or did not receive TXA. Multivariate regression analyses were performed to account for potential confounders.
RESULTS:
From 2015-2021, 4,903 patients underwent surgery for a pathologic fracture, of which 693 received TXA and 4,210 did not. There was no significant difference in age between the TXA(+) and TXA(-) patients (66.6±12.3 years vs. 66.8±12.8, p=0.674), but TXA(+) patients had a significantly shorter average length-of-stay compared to TXA(-) (5.7±4.9 days vs. 8.9±10.5, p<0.001). On univariate analysis, TXA(+) patients had significantly decreased odds of deep vein thrombosis (DVT) (odds ratio [OR]: 0.26, 95%-Confidence Interval [95%-CI]: 0.14-0.50, p<0.001), need for transfusion (OR: 0.60, 95%-CI: 0.49-0.74, p<0.001), and 90-day readmission (OR: 0.71, 95%-CI: 0.55-0.92, p=0.01). After accounting for potential confounders, TXA(+) patients continued to demonstrate a significantly decreased risk of DVT (adjusted odds ratio [aOR]: 0.28, 95%-CI: 0.15-0.53, p<0.001) and transfusion (aOR: 0.72, 95%-CI: 0.58-0.90, p=0.003), but risk of 90-day readmission was no longer significant (aOR: 0.79, 95%-CI: 0.60-1.03, p=0.076).
DISCUSSION AND CONCLUSION:
Administration of IV TXA was associated with decreased risk of postoperative DVT and blood transfusion. Our results indicate that orthopaedic surgeons should strongly consider utilization of IV TXA in patients treated surgically for neoplastic pathologic fractures of the lower extremity.