

Tranexamic Acid Does Not Decrease Transfusion Requirements in Patients Undergoing Anterior Intrapelvic Approach (AIP) for Acetabular ORIF

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Purpose: The objective of this study was to determine factors that may affect transfusion rates for patients requiring an anterior intrapelvic (AIP) approach.

Methods: This is an IRB-approved retrospective study spanning 2013–2020 at three Level I trauma centers. 192 patients who underwent unilateral AIP for open reduction and internal fixation (ORIF) of an acetabular fracture were included. Data analyzed included time duration from admission to surgery, estimated blood loss (EBL), intraoperative and post-operative transfusions, preoperative and daily postoperative hemoglobin (Hb), and use of tranexamic acid (TXA). Bivariate and multivariate regression models fit to the data analyses were performed to identify factors associated with transfusion.

Results: Factors that were found to affect intraoperative transfusion rates were older age, lower preoperative hematocrit, longer surgery duration, and requiring increased intraoperative intravenous fluids. Factors found that did not affect transfusion rate included gender, body mass index, hip dislocation at time of injury, fracture pattern, AIP approach alone or with lateral window ± distal extension, ISS, preoperative platelet count, use of TXA, admission time to operating room (OR), and deep venous thrombosis (DVT) prophylaxis received morning of surgery (Table 1). If followed out through the remainder of a week following surgery, the results for any factor did not change.

Conclusion: In this large multicenter retrospective study of patients requiring an AIP approach, TXA and use of DVT prophylaxis (or holding it the morning of surgery) did not affect transfusion rates either during surgery or up to a week following surgery. Older age, lower preoperative hematocrit level, longer surgery time, and increased intraoperative intravenous fluids were associated with higher transfusion rates.

Table 1. Multivariate linear regression with intraop blood transfusion (mL) as outcome variable (N = 192)

	Coefficient	95% confidence Interval	P value
Age (years)	7.056	1.654 to 12.46	0.0108
Gender			
Male	Reference		
Female	-41.11	-347.3 to 265.1	0.7913
Estimated total blood volume (mL)	0.07403	-0.1107 to 0.2588	0.4301
BMI (kg/m ²)	-10.63	-35.03 to 13.77	0.3911
Hip dislocation			
No	Reference		
Yes	231.2	-9.943 to 472.3	0.0601
Fracture pattern			
Ant column + post hemi-transverse	Reference		
Ant column	-190.9	-523.5 to 141.7	0.2589
Both columns	51.32	-172.8 to 275.4	0.6518
Post column	-137.2	-1312 to 1037	0.8178
Post wall	77.83	-1128 to 1283	0.8987
Transverse	-92.57	-629.4 to 444.3	0.7340
Transverse + Post wall	160.6	-689.8 to 1011	0.7097
T type	-30.22	-364.4 to 303.9	0.8585
Site of injury			
Left	Reference		
Right	108.4	-77.97 to 294.9	0.2524
Approach			
AIP	Reference		
AIP + lat window	-57.69	-286.5 to 171.1	0.6193
AIP + lat window + distal extension	-169.3	-439.3 to 100.6	0.2173
Injury severity score	7.660	-1.669 to 16.99	0.1069
Preop platelet count (x 1000/mcl)	-0.1379	-0.9092 to 0.6334	0.7246
Preop Hct (%)	-43.93	-59.54 to -28.32	<0.0001
PPx anticoagulant Morning of			
No	Reference		
Yes	-61.99	-290.6 to 166.7	0.5932
Surgical time (min)	2.027	0.3874 to 3.667	0.0157
Admission to OR (h)	-1.504	-3.338 to 0.3307	0.1075
Received TXA			
No	Reference		
Yes	19.67	-203.2 to 242.5	0.8619
Volume of IVF given intraop (mL)	0.1682	0.08337 to 0.2530	0.0001

See the meeting website for complete listing of authors' disclosure information. Schedule and presenters subject to change.