Utilization Of Tranexamic Acid In Civilian Adult Trauma Resuscitation In The Hospital Setting

Salameh J[a], Dong F[a], Mousselli M[a], Toy J[a], Massoud R[a], Chandowani D[a,e], O'Bosky K[b], Luo-Owen X[b], Wong D[c,e], Vara R[c], Comunale M[d,e], Neeki MM[a,e].[1]

Funding: No funding was received for this project.

Conflicts of Interest: By the AAEM abstract submission requirements, all authors are required to disclose all affiliations, funding sources and financial or management relationships that could be perceived as potential sources of bias. No author has professional or financial relationships with any companies that are relevant to this study. There are no conflicts of interest or sources of funding to declare.

Objectives: Trauma can pose a severe threat to life and accounts for more than 5.8 million deaths worldwide. Trauma can rapidly lead to coagulopathies causing hemorrhagic shock and death. This study aims to evaluate the safety and efficacy of tranexamic acid (TXA) use in the hospital setting for cases of traumatic hemorrhagic shock.

Methods: Patients from 2 different trauma centers who sustained blunt or penetrating trauma with signs of hemorrhagic shock from March 2015 through June 2018 were considered for TXA treatment. A retrospective control group was formed from patients seen in the past five years who were not administered TXA and matched based on age, gender, ISS, and mechanism of injury. The primary outcome of this study was mortality measured at 24 hours, 48 hours, and 28 days. Secondary outcomes included total blood products, hospital length of stay (LOS), ICU LOS, and adverse events.

Results: Both the hospital TXA and control cohorts consisted of 280 patients. The hospital TXA group had statistically significant lower mortality at 28 days (1.1% vs 5%, p=0.0067); used fewer units of blood products (median of 4 vs 7 units p=0.0005); and had a shorter hospital LOS (median of 7 vs 12 days, p<0.0001). There was no significant difference in adverse effects for TXA versus control. Subgroup analyses were conducted on patients who had and ISS ≥16, and those transfused ≥10 units of blood. The ISS ≥16 subgroup showed a statistically significant lower mortality at 28 days for TXA compared to control. While not significant, those transfused ≥10 units of blood showed a trend towards decreased mortality for TXA versus control.

***Conclusions*:** This study identified a statistically significant reduction in mortality at 28 days after TXA administration in trauma patients, and a trend towards decreased mortality at 24 hours, and 48 hours. Our study shows that TXA may be used safely and efficaciously for trauma-induced hemorrhagic shock in the hospital trauma system.

[1] [a]Department of Emergency Medicine, Arrowhead Regional Medical Center, Colton, CA
[b]Department of General Surgery, Loma Linda University Medical Center, Loma Linda, CA
[c]Department of Surgery, Arrowhead Regional Medical Center, Colton, CA
[d]Department of Anesthesia, Arrowhead Regional Medical Center, Colton, CA
[e]California University of Sciences and Medicine, Colton, CA