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**Purpose/background:** Tranexamic acid (TXA) is an antifibrinolytic agent administered to trauma patients with massive blood loss in an effort to promote hemostasis. Previous studies have demonstrated reduced all-cause mortality and decreased risk of death due to bleeding with TXA in trauma patients. However, TXA is less effective and may be harmful if treatment is delayed. This study investigates the impact of TXA on patient outcomes before and after protocol implementation.

**Objective:** To evaluate the impact of TXA on blood product requirements before and after protocol implementation

**Methods:** This retrospective cohort, single center study evaluated adult trauma patients who survived > 24 hours after injury at a Level 2 Trauma Center over a 3 year period (June 2013-June 2016). In December 2014, TXA administration was protocolized for patients with significant hemorrhage or considered to be at risk of significant hemorrhage within 8 hours of injury. Patient outcomes in the pre-protocol (Pre) and post-protocol (Post) groups were compared.

**Results:** Of 144 patients evaluated, 65 met inclusion criteria (42 Pre, 23 Post). Patients were age 49.3±23.4 years with APACHE II of 10.1±6.5, Injury Severity Score of 24.8±14.5, and 82% blunt trauma. Transfusions tended to be less frequent post-protocol for pRBCs (3.5±2.2 Post, vs 5.1±5.2 Pre, p=0.12) and FFP (2.1±1.3 Post vs 3.9±2.3 Pre, p=0.06), even in the setting of lower hemoglobin levels in the early phase of resuscitation (8.8±2.7 Post vs 10.7±2.1 Pre, p=0.01) and arterial pH < 7.2 (40% Post vs 20% Pre, p=0.14). Pre-hospital administration of TXA occurred more post-protocol (82% Post vs 7% Pre, p<0.001) and earlier from time of injury (7.6±17.1 Post vs 23.3±50.3 Pre hours, p=0.008). TXA administered > 3 hours reduced from 59% to 34% (p=0.05) post-protocol. Overall, in-hospital mortality was increased with admit hemoglobin < 8 g/dL (p=0.01), and trended with age > 65 years (p=0.11) and ≥ 2 organ failure (p=0.10). In surviving patients, hospital and ICU length of stay did not differ.

**Conclusion:** Protocol implementation resulted in quicker administration of TXA in trauma patients. TXA tends to reduce blood transfusions by attenuating the acute coagulopathy of trauma. Perhaps additional benefits of the protocol could be seen with a larger sample size.