TRANEXAMIC ACID

CLASSIFICATION	antifibrinolytic agent, antihemophilic agent, hemostatic agent, lysine analog
TRADE NAME(S)	TXA
DESIRED EFFECTS	Reduce the blood loss in trauma patients with severe hemorrhage
MECHANISM OF ACTION	Tranexamic acid is a synthetic derivative of the amino acid lysine that inhibits fibrinolysis by blocking the lysine binding sites on plasminogen.
INDICATIONS	*Evidence of marked blood loss from traumatic injury (any age) or postpartum hemorrhage (≥ 12 yrs old) only. *Persistent tachycardia for age despite IV fluid resuscitation OR.. *Persistent hypotension for age despite IV fluid resuscitation OR.. *Major trauma with clear abdominal/pelvic injury Arterial bleeding you cannot stop with direct pressure or a tourniquet. *Nosebleed resistant to BLS measures
CONTRAINDICATIONS	* Isolated GI bleed * Isolated head injury * Non hemorrhagic/non-traumatic shock (ie. neurogenic shock or septic shock) * Known allergy to TXA
ADVERSE REACTIONS	Hypotension (on rapid injection), arterial or venous thrombosis (if given> 3 hours after injury, dizziness, fatigue (may also be caused by patients blood loss), headache, GI effects.
DRUG INTERACTIONS	
PRECAUTIONS	Avoid concurrent use of TXA with coagulation factors.
SPECIAL CONSIDERATIONS	Administration of the medication can be completed in the emergency department.

DOSING REGIMEN	DOSING REGIMEN
Patients OVER 12 years old: Administer **2 grams** IV/IO by slow push. Do not rapidly bolus. Do not use piggyback IV solution. Alternative dilute 100ml in NS to allow for infusion over 10 mins. **STANDING ORDER;** no online medical control authorization required.	**Patients UNDER 12 years old:** Administer loading dose **15 mg/kg (max 1 gram**) over 10 minutes, IV/ IO. Do not rapidly bolus. Recommend diluting in 100 mL normal saline to allow for an infusion over 10 minutes. Next, start an infusion of 2 mg/kg-hr (max 125 mg/hr) which will be continued over the next 8 hours. Not a standing order. Online medical control authorization is required. **CONTACT MEDICAL CONTROL For AUTHORIZATION**

PROTOCOL LOCATION Trauma Emergencies

TRANEXAMIC ACID (TXA)

GENERAL CONSIDERATIONS

Tranexamic Acid (TXA) has existed for decades. Initially used to minimize bleeding during surgical cases, it is now used in the management of trauma patients and post-partum hemorrhage patients with severe hemorrhage and hemorrhagic shock. It is a medication that inhibits the breakdown of fibrin, and thus helps prevent clots from dissolving. By stabilizing the clot it allows the body a chance to "plug the holes" and stop or slow the rate of bleeding. TXA is most helpful with internal bleeding that cannot be otherwise controlled with direct pressure or a tourniquet, and is most helpful when given shortly after injury (ideally < 1 hour)

Paramedic:

Indications for TXA use in hemorrhaging patients:

- Evidence of marked blood loss from traumatic injury (any age) or postpartum hemorrhage (≥12 yo) only
- Persistent tachycardia-for-age despite IV fluid resuscitation OR…
- Persistent hypotension-for-age despite IV fluid resuscitation OR…
- Major trauma with clear abdominal/pelvic injury
- Arterial bleeding you cannot stop with direct pressure or a tourniquet
- Nosebleed resistant to BLS measures

Contraindications:

- Isolated GI bleed
- Isolated head injury
- Non-hemorrhagic/non-traumatic shock (i.e. neurogenic shock or septic shock)
- Known allergy to TXA

Side Effects:

Hypotension (on rapid injection), arterial or venous thrombosis (if given > 3 hours after injury), dizziness, fatigue (may also be caused by patient's blood loss), headache, GI effects

Dose:

Patients **OVER** 12 years old:
Administer **2 Grams** IV/IO by slow push. Do not rapidly bolus. Do not use piggyback IV solution.
Alternative dilute in 100ml of NS to allow for an infusion over 10 mins.
Standing order; **no online medical control authorization required.**

Patients **UNDER** 12 years old:
Administer loading dose **15 mg/kg (max 1 gram) over 10 minutes**, IV/IO. Do not rapidly bolus. **Recommend diluting in 100 mL normal saline to allow for an infusion over 10 minutes.** Next, start an infusion of **2 mg/kg-hr (max 125 mg/hr)** which will be continued over the next 8 hours.
Not a standing order. **Online medical control authorization is required.**