

## Tranexamic Acid (TXA)

TXA is an antifibrinolytic medication that helps to protect the clots the body is forming from prematurely breaking down. It is an effective and safe adjunctive treatment for postpartum hemorrhage. TXA is eliminated primarily via the kidneys and excreted in the urine. It has been used for many years in France and the United Kingdom for PPH after first-line medications have not controlled bleeding, and the WOMAN international RCT (2017,  $n = 20,060$ ) found a 31% decrease in risk of death from hemorrhage when TXA was given intravenously within 3 hours of diagnosis of PPH. The WHO recommends that TXA be given in all cases of PPH as a part of standard PPH treatment packages (2017).

### DOSE

- 1 gm intravenous over 10 min, can be given as slow IV injection or diluted within 50 or 100 mL NS or LR IV piggyback as an intravenous infusion.
- Can give a second 1 gm dose at 30 min if bleeding persists, or if the bleeding stops and restarts within 24 hours post-birth.
- Can safely be mixed with most solutions for infusion (electrolyte, dextran, carbohydrate, and amino acids).

### TIMING

- TXA should be given within 3 hours of initial diagnosis of PPH for best effect. Some sources suggest that the benefit is greatest when administered closer to time of diagnosis rather than later.
- TXA is not considered an initial treatment. Early diagnosis and management with first-line treatment such as uterotonics and/or surgical repair is a priority in postpartum hemorrhage, and TXA can play an important role if bleeding continues after first line treatments are administered.

### SAFETY

- Do not exceed 2 doses.
- To avoid hypotension, do not give faster than 1 g over 10 minutes (100 mg/min).
- Prepare the solution at the time you intend to use it, do not pre-mix. Discard any unused solution that day, it is considered single-use.
- Do not add heparin. Do not mix with blood. Do not mix with penicillin.

### CONTRAINDICATIONS

- Renal impairment or renal failure
- History of thromboembolism
- History of seizures
- Acquired defective color vision
- Subarachnoid hemorrhage
- Known allergy/hypersensitivity to TXA

### STORAGE

- Store at room temperature.

- DO NOT store with look-alike vials of medication such as analgesics to minimize risk of medication errors.

<b>Tranexamic Acid (TXA, Cyklokapron)</b>				
	<b>Dosing</b>	<b>Route</b>	<b>Onset of action</b>	<b>Max dose</b>
<b>TXA is 2<sup>nd</sup> or 3<sup>rd</sup> line drug for PPH (or if other medications are unavailable or contraindicated)</b>	<b>1 g (1000 mg)</b>  <b>Administer over 10 min (100 mg/min)</b>  <b>Give within 3 hours postpartum</b>	Slow IV injection in 10 mL syringe (1 mL/min) - or - Intravenous infusion diluted in 50-100 mL IV solution (eg NS or LR)	5-15 minutes  <i>Duration of effect is 3 hrs</i>	Can repeat dose ONCE after 30 min or if bleeding stops and restarts within 24 hrs PP
<b>Use</b>	<ul style="list-style-type: none"> <li>• Adjunctive medication to be used alongside uterotonics/surgical repairs/other treatments to address root cause of bleeding</li> <li>• Can be used for all types of PPH, regardless of cause</li> </ul>			
<b>Mechanism of action</b>	Anti-fibrinolytic that prevents clot breakdown in the vessels, rather than promoting new clot formation			
<b>Side effects</b>	<ul style="list-style-type: none"> <li>• Rapid administration may cause hypotension or dizziness</li> <li>• At this dose, venous thromboembolic events, seizures, and renal complications were NOT seen at higher rates in RCTs (complications are associated with higher dosing)</li> </ul>			
<b>Indications for use</b>	Consider TXA when: <ul style="list-style-type: none"> <li>• Bleeding continues after higher dose oxytocin and/or 2<sup>nd</sup> line uterotonic have been administered</li> <li>• Cause of bleeding is a genital tract laceration</li> <li>• Bleeding is &gt;1000 mL and still not controlled, or exceeds 1500 mL total</li> <li>• Other interventions are being considered (eg, manual removal, transport, IV fluids, etc)</li> </ul>			
<b>Contraindications</b>	<ul style="list-style-type: none"> <li>• Renal impairment or renal failure</li> <li>• Active or History of thromboembolism / intravenous clotting events</li> <li>• Acquired defective color vision</li> <li>• Subarachnoid hemorrhage</li> <li>• Known allergy/hypersensitivity to TXA</li> </ul>			
<b>Other Notes</b>	<ul style="list-style-type: none"> <li>• Store at room temperature (56-86F)</li> <li>• Do not administer in the same line as blood products or in a line used for penicillin; Do not add heparin</li> <li>• Can safely be mixed with nearly any available solution for intravenous use (electrolytes, dextran, amino acids, carbohydrate)</li> </ul>			

- Effect on newborns has not been studied, if placenta is not delivered and cord is intact, consider possible impact to newborn