Birmingham Children’s Hospital Injectable Medicine Guide

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 **Indications for use:**

Treatment of actual or suspected haemorrhage, associated with trauma.

**Patient Inclusion Criteria:**

* Patients who fulfil ANY of the following:
* Significant haemorrhage
* Systolic blood pressure less than the 5th centile (*see below*)
* Heart rate greater than normal range (*see below*)
* Transfusion of emergency blood, due to actual or suspected haemorrhage

or are high risk groups:

* Multiple rib fractures
* Penetrating wounds
* More than one proximal long bone fracture
* Amputation proximal to the wrist / ankle

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| **Age (Years)**  | **Respiratory rate** **(breaths/min)**  | **Systolic BP** **(50th centile)**  | **Systolic BP** **(5th centile)**  | **Pulse** **(beats/min)**  |
| <1  | 30-40  | 80-90  | 65-75  | 110-160  |
| 1-2  | 25-35  | 85-95  | 70-75  | 100-150  |
| 2-5  | 25-30  | 85-100  | 70-80  | 95-140  |
| 5-12  | 20-25  | 90-110  | 80-90  | 80-120  |
| >12  | 15-20  | 100-120  | 90-105  | 60-100  |

**Administration:**

Presentation

Tranexamic Acid 100 mg in 1 ml (5 ml ampoules)

**Prescribing**

Dose: schedule based on CRASH2 trial.

**Loading dose**: prescribe on once only section of drug chart 15 mg/kg over 10 minutes (maximum 1 gram)

**Maintenance dose**: prescribe on the infusion section of drug chart (see example below) as tranexamic acid 1 gram, in 500ml sodium chloride 0.9% with glucose 5%. Infuse at 1ml/kg/hour, to give 2mg/kg/hour over 8 hours, or until bleeding stops. (maximum 1gram over 8 hours i.e. 62.5ml/hour)

*Dose reduction required in renal impairment.*

*See below in “Monitoring / other comments”*

Further doses can be given after the 8hr infusion if bleeding still persists, but

this should only be considered ***after*** discussions between the patients responsible consultant and the haematology consultant.

**Storage**

Store at room temperature

**Preparation/ Dilution**

Loading dose: draw required dose via filter needle into 10ml syringe and dilute to 10ml using sodium chloride 0.9%.

Maintenance dose: draw 10ml tranexamic acid via filter needle into 10ml syringe. Change needle and add to 500ml bag of sodium chloride 0.9% with glucose 5%.

**Route of Administration**

Central or peripheral

**Rate of Administration**

Loading dose over 10 minutes

Maintenance infusion at rate of 2 mg/kg/hour, for 8hrs

**Stability**

Use immediately - assign 24 hour expiry to IV label for maintenance infusion.

**Flushes**

Sodium chloride 0.9%

**Common compatibilities at terminal Y-site**

Maintenance fluids containing sodium chloride/ glucose. Contact pharmacist for further advice.

**Monitoring/ other comments**

Monitor blood pressure- increased risk of hypotension with rapid injections.

Contra-indicated in patients with arterial or venous thrombosis. Caution in patients with history of seizures.

Increased risk of seizures in accumulation, therefore dose reduction in renal dysfunction recommended.

**Suggested dose reduction in renal impairment:**

**mild** renal impairment reduce infusion to 1.3 mg/kg/hour,

**moderate** renal impairment 1mg/kg/hour,

**severe** renal failure 0.5 mg/kg/hour.

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| **Extravasation Risk** |  |  |  |
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| Extreme of pH | Hyperosmolar | Vasoactive | Vesicant |
| pH 6.5-8 | Unknown | No | No |

Links to other protocols/ guidelines

RCPCH Evidence Statement: Paediatric TXA for Major Trauma

*Please note that the RCPCH guidance* ***suggests*** *the maintenance fluids be reconstituted as a 500mg dose of TXA in 500mls fluid.*

*BCH have opted for 1gram in 500mls fluid*

Infusion calculation equation

Pump rate in ml/hr = (Dose in mg/kg/hour) x weight

2mg/ml (Concentration in mg/ml)

Calculation example

e.g. 25kg child presents in ED with major trauma with significant blood loss.

Prescribe 15mg/kg = 375mg over 10 minutes on once only section of drug chart. Followed by tranexamic acid 1 gram in 500ml, infusion at rate of 25ml/hour- as shown below:

Administer as follows:

**Loading dose**: Draw up 3.8mls tranexamic acid into 10ml syringe and dilute to 10mls using sodium chloride 0.9%.

**Maintenance dose**: Draw 10ml tranexamic acid into 10ml syringe and transfer to 500ml bag of sodium chloride 0.9% with glucose 5%. Label as per Trust policy. Attach to patient and set pump to run at 25mls/hour (The volume to be infused would be 25mls/hr for 8hrs = 200mls)