



## IAEM Clinical Guideline 5

### The Use of Tranexamic Acid in Trauma Patients

Version 1

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#### DISCLAIMER

IAEM recognises that patients, their situations, Emergency Departments and staff all vary. These guidelines cannot cover all clinical scenarios. The ultimate responsibility for the interpretation and application of these guidelines, the use of current information and a patient's overall care and wellbeing resides with the treating clinician.

## **GLOSSARY OF TERMS**

Significant haemorrhage: Any patient with Class II-IV haemorrhage as per the Advanced Trauma Life Support (ATLS) classification of haemorrhage.

At risk of significant haemorrhage: Includes any patient who may have compensated haemorrhage or any patient at risk of re-bleeding.

# THE USE OF TRANEXAMIC ACID IN TRAUMA PATIENTS

## INTRODUCTION

Trauma is the second leading cause of death worldwide in people aged 5 - 45 years. Each year, approximately 3 million people die worldwide as a result of trauma, many after reaching hospital. In trauma patients who survive to reach hospital, exsanguination is a common cause of death. Central nervous system injury and multi-organ failure account for most of the remainder, both of which can be exacerbated by severe bleeding.

Anti-fibrinolytic agents have been shown to reduce blood loss in surgical patients without increasing the risk of post-operative complications and have been in clinical use in multiple surgical specialties, particularly cardiothoracic surgery, for over 10 years.

Recently published data, in particular from the Clinical Randomisation of an Antifibrinolytic in Significant Haemorrhage (CRASH)-2 trial, shows that administration of tranexamic acid (TXA) to trauma patients with significant haemorrhage reduces the risk of death due to bleeding by 15% without increasing the risk of adverse events.

These guidelines have been developed to act as a resource for medical and nursing staff and other members of the multidisciplinary ED team to aid in the use of TXA in trauma patients. These guidelines are not intended to replace clinical judgement.

## PARAMETERS

Target audience: This guideline is intended for use by emergency medicine clinicians involved in the early management of patients with trauma.

Patient population: Trauma patients with suspected significant haemorrhage, or those at risk of significant haemorrhage, seen within 3 hours of trauma.

Exclusion criteria: Patients who are 3 or more hours post-trauma, as administration of TXA does not show any benefit outside of 3 hours and may cause harm.

Contraindications: Hypersensitivity to TXA or any of its excipients, acute venous or arterial thrombosis.

Relative Contraindications: History of convulsions, severe renal impairment, disseminated intravascular coagulation (DIC).

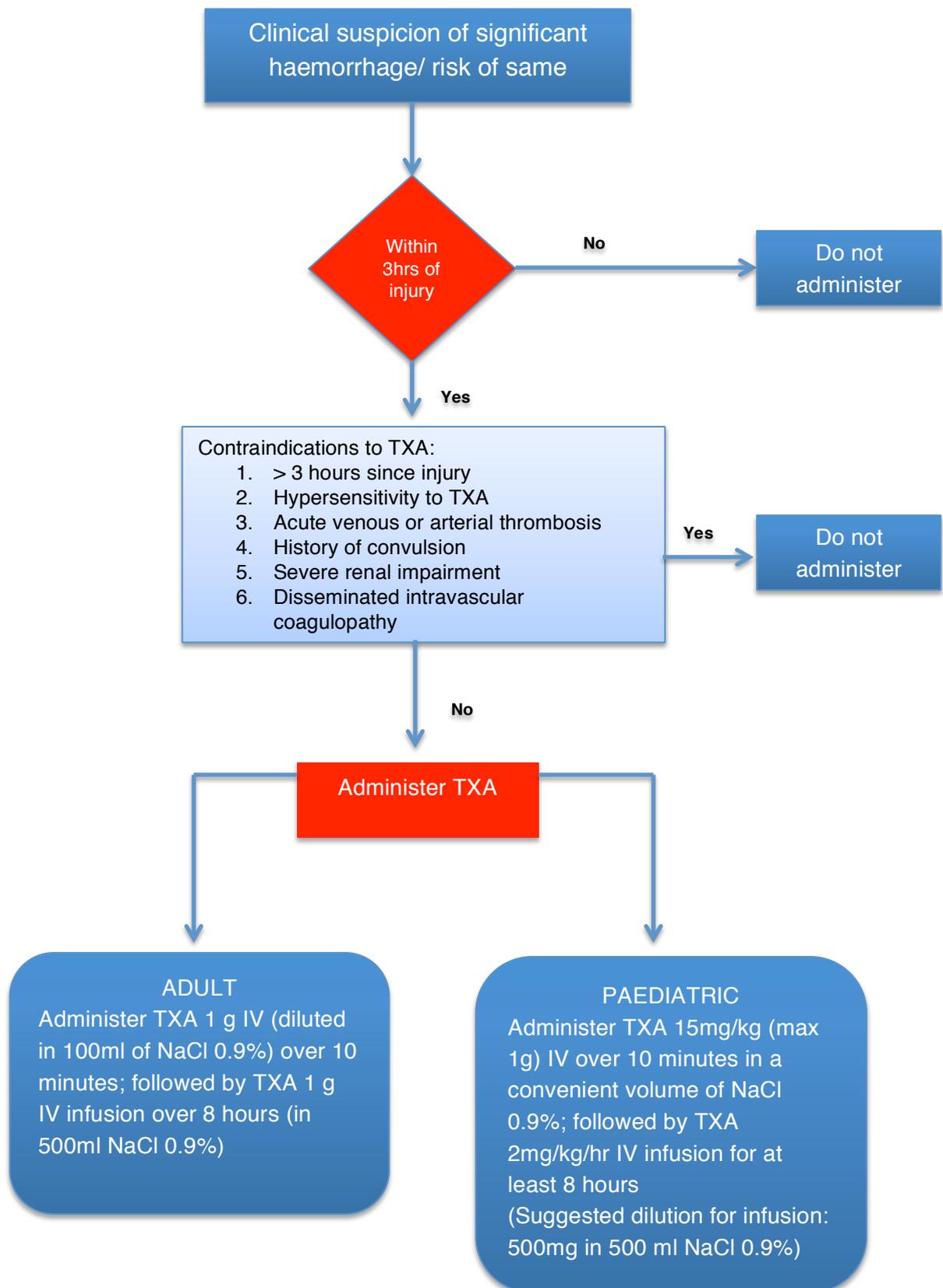
### AIMS:

To ensure the use of TXA in all trauma patients with known or suspected significant haemorrhage as part of their ED management. TXA 1g should be administered over 10 minutes within 3 hours of injury, followed by a further dose of TXA 1g infused over 8 hours. As a rule of thumb, any trauma patient on whom you draw a transfusion blood sample should be given TXA.

### ASSESSMENT:

Assessment of the trauma patient should be based on ATLS principles.

**Figure 1. Algorithm for use of TXA in trauma**



## **SPECIAL CONSIDERATIONS**

### Administration in children

TXA has been safely used in paediatric surgery. As the CRASH-2 trial included only 5 patients under the age of 16, specific paediatric data is not currently available. Paediatric weight adjusted doses are based on Royal College of Paediatrics and Child Health (RCPCH) recommendations.

### Administration in pregnancy

TXA can be safely used in pregnancy and in the postpartum period for indications other than trauma (United States Food and Drug Administration [FDA] Pregnancy category B).

### Renal dosing

Dose adjustment in renal impairment is not necessary due to the short course of treatment.