



Drug Therapy Protocols: Tenecteplase

Policy code	DTP_TEN_0722
Date	July, 2022
Purpose	To ensure a consistent procedural approach to tenecteplase administration.
Scope	Applies to all Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless specifically mentioned.
Source of funding	Internal – 100%
Author	Clinical Quality & Patient Safety Unit, QAS
Review date	July, 2024
Information security	UNCLASSIFIED – Queensland Government Information Security Classification Framework.
URL	https://ambulance.qld.gov.au/clinical.html

While the QAS has attempted to contact all copyright owners, this has not always been possible. The QAS would welcome notification from any copyright holder who has been omitted or incorrectly acknowledged.

All feedback and suggestions are welcome. Please forward to: Clinical.Guidelines@ambulance.qld.gov.au

Disclaimer

The Digital Clinical Practice Manual is expressly intended for use by appropriately qualified QAS clinicians when performing duties and delivering ambulance services for, and on behalf of, the QAS.

The QAS disclaims, to the maximum extent permitted by law, all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs incurred for any reason associated with the use of this manual, including the materials within or referred to throughout this document being in any way inaccurate, out of context, incomplete or unavailable.

© State of Queensland (Queensland Ambulance Service) 2022.



This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives V4.0 International License

You are free to copy and communicate the work in its current form for non-commercial purposes, as long as you attribute the State of Queensland, Queensland Ambulance Service and comply with the licence terms. If you alter the work, you may not share or distribute the modified work. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/deed.en>

For copyright permissions beyond the scope of this license please contact: Clinical.Guidelines@ambulance.qld.gov.au

Tenecteplase

July, 2022

Drug class

Fibrinolytic^[1,2]

Pharmacology

Tenecteplase is a thrombolytic agent which combines with the fibrin component of the thrombus and converts thrombus-bound plasminogen to plasmin. This degrades the fibrin matrix of the thrombus.^[1,2]

Metabolism

Hepatic^[1]

Indications

- **Patient with STEMI who meet the criteria for pre-hospital tenecteplase administration** (as defined by the relevant QAS coronary artery reperfusion checklist)

Contraindications

- Patients less than 18 OR greater than 75 years of age
- Uncontrolled hypertension (systolic BP > 180 mmHg AND/OR diastolic BP > 110 mmHg at any stage during current acute episode)
- Allergy AND/OR Adverse Drug Reaction to any of: tenecteplase, enoxaparin OR clopidogrel
- Left BBB identified on 12-Lead ECG
- Current OR history of thrombocytopenia
- Active tuberculosis

Contraindications (cont.)

- Known cerebral disease, in particular a malignant intracranial neoplasm OR arteriovenous malformation
- Prior intracranial haemorrhage
- Ischaemic stroke OR Transient Ischaemic Attack (TIA) within last 3 months
- History of significant closed head OR facial trauma within last 3 months
- Suspected aortic dissection (including new neurological symptoms)
- History of major trauma OR surgery (including laser eye surgery) within last 6 weeks
- Internal bleeding (e.g. gastrointestinal (GI)/urinary tract bleed) within last 6 weeks (excluding menses)
- Bleeding OR clotting disorder (e.g. haemophilia)
- Current use of anticoagulants (e.g. warfarin)
- Non-compressible vascular punctures
- Prolonged (> 10 minutes) cardio pulmonary resuscitation (CPR)
- Known to be pregnant OR delivered within the last 2 weeks
- History of serious systemic disease (e.g. advanced /terminal cancer, severe liver OR kidney disease)
- Resident of an aged care facility requiring significant assistance with activities of daily living
- Acute myocardial infarction in the setting of trauma

Precautions

- Nil

Side effects

- Haemorrhage
- Post-administration dysrhythmias

Presentation

- Injection, (powder and solvent) 50 mg (10,000 IU) graduated syringe *tenecteplase*

Onset (IV)

(IV) 15 minutes

Duration (IV)

Several hours

Half-life

≈ 2 hours

Schedule

- S4 (Restricted drugs)

Routes of administration

Intravenous injection (IV)



Special notes^[4-5]

- Ambulance officers must only administer medications for the listed indications and dosing range. Any consideration for treatment outside the listed scope of practice requires mandatory approval via the *QAS Clinical Consultation and Advice Line*.
- Increased scrutiny and threshold must be applied to patients < 35 years due to the increased likelihood of STEMI mimics such as pericarditis. Paramedics should exercise **extreme** caution and demonstrate a low threshold for waiting to gain a second opinion at the receiving emergency department.
- If doubt exists regarding the diagnosis of STEMI the QAS paramedic **MUST NOT** administer reperfusion therapy.
- Tenecteplase must be reconstituted by adding the complete volume of water for injection from the pre-filled syringe to the vial containing the powder for injection. This should be done slowly to avoid foaming. The powder should be reconstituted by swirling gently. The appropriate amount should be withdrawn from the vial for injection.
- Tenecteplase is only to be reconstituted and prepared by officers with current QAS tenecteplase administration authority.
- The routine administration of fibrinolysis for the treatment of out-of-hospital cardiac arrest is **not** recommended.

Adult dosages^[1-5]

Patients with STEMI who meet the criteria for pre-hospital tenecteplase administration (as defined by the relevant QAS coronary artery reperfusion checklist)

ACP2
CCP

IV

Weight calculated dose (as listed below) administered into a pre-existing IV line containing sodium chloride 0.9% over 10 seconds.

Patient weight (kg)	Tenecteplase dose to be administered (mg)	Corresponding volume of reconstituted solution (mL)
< 60	30	6
≥ 60 – < 70	35	7
≥ 70 – < 80	40	8
≥ 80 – < 90	45	9
≥ 90	50	10

Paediatric dosages

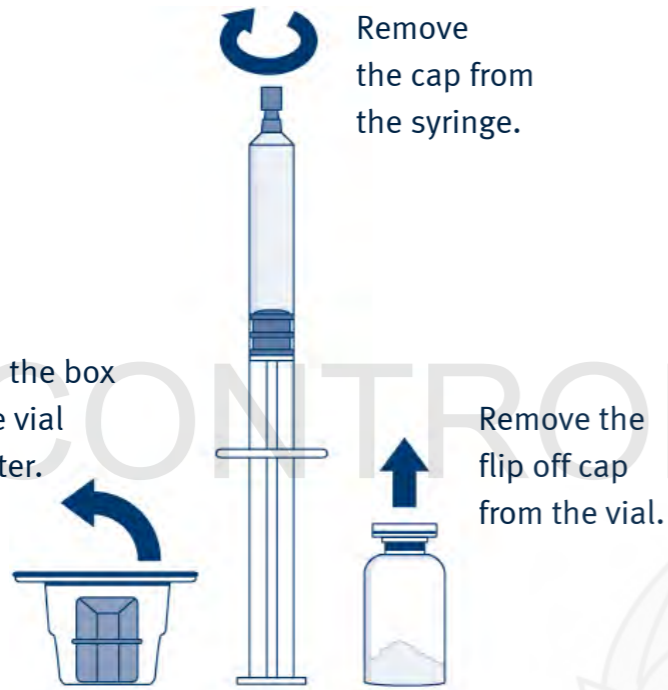
Note: QAS officers are **NOT** authorised to administer tenecteplase to paediatric patients.



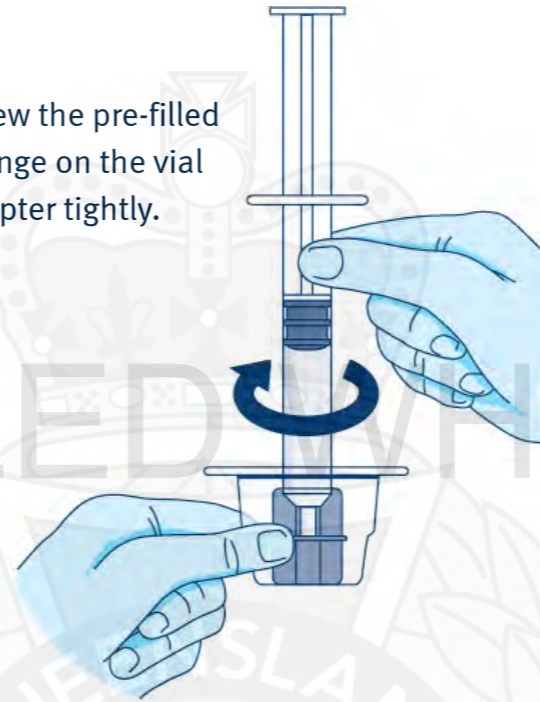
Metalyse® Preparation / Administration Instructions

- 1** Remove the cap from the syringe.

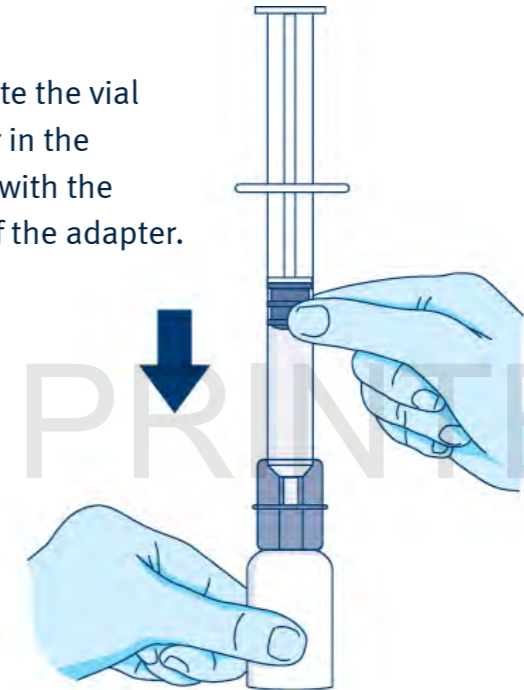
Open the box of the vial adapter.



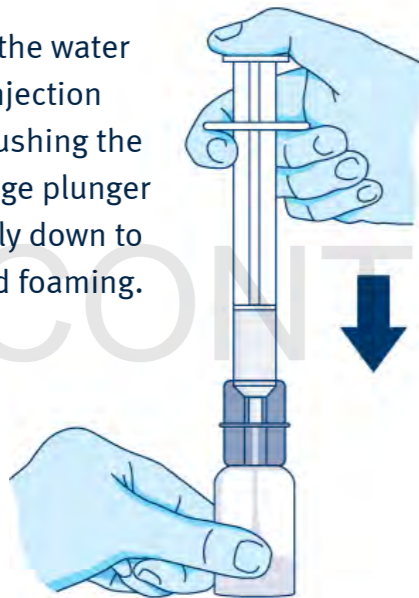
- 2** Screw the pre-filled syringe on the vial adapter tightly.



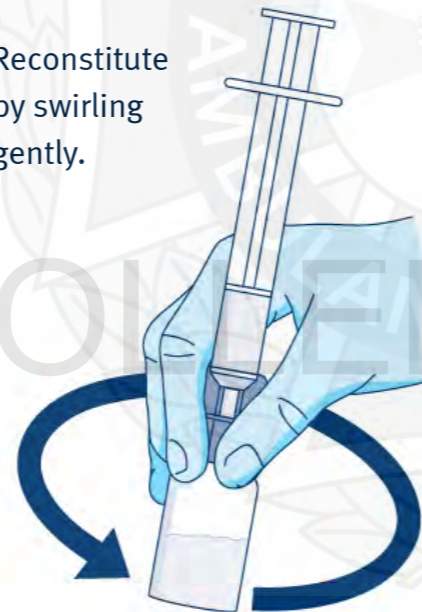
- 3** Penetrate the vial stopper in the middle with the spike of the adapter.



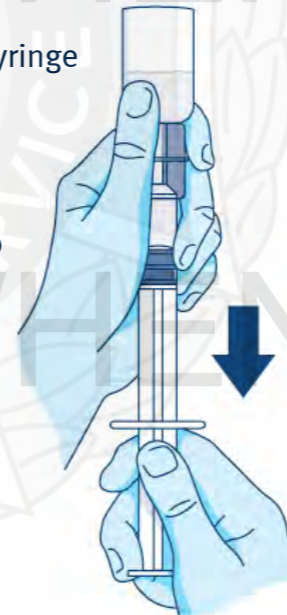
- 4** Add the water for injection by pushing the syringe plunger slowly down to avoid foaming.



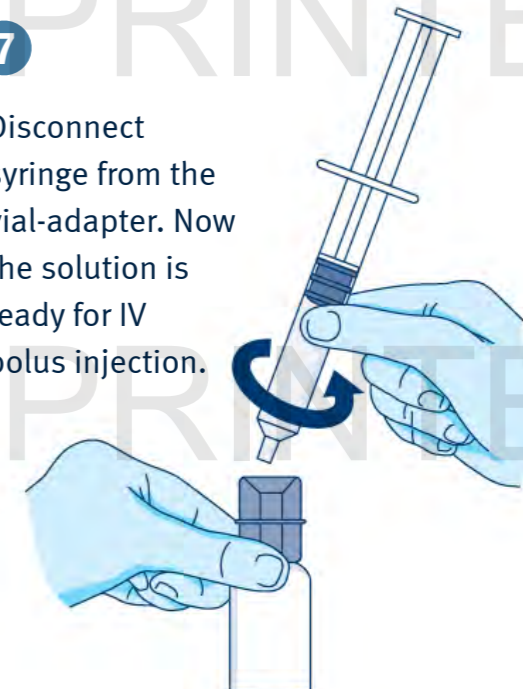
- 5** Reconstitute by swirling gently.



- 6** Invert vial/syringe and transfer appropriate volume of solution into syringe according to dosing instructions.



- 7** Disconnect syringe from the vial-adapter. Now the solution is ready for IV bolus injection.



Tenecteplase preparation video

