Drug Therapy Protocols: Tirofiban

Policy code	DTP_TIR_0722
Date	July, 2022
Purpose	To ensure a consistent procedural approach to tirofiban 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.
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Tirofiban

Drug class

Glycoprotein IIb/IIIa Inhibitor [1,2]

Pharmacology

Tirofiban is a glycoprotein (GP) inhibitor that prevents the binding of fibrinogen, von Willebrand factor and other adhesive molecules to the platelet group IIB/IIIA receptor sites, thereby preventing platelet aggregation.[1,2]

Metabolism

Hepatic and excreted in the urine.[1]

Indications

- Reduction of **ischaemic events** associated with ACS and **prior to PCI**
- **Critical care patients during interfacility transport**

Contraindications

- Allergy AND/OR Adverse Drug Reaction
- Active bleeding OR a history of bleeding diathesis within 30 days
- Concurrent use of warfarin
- Bleeding disorders
- History of intracranial haemorrhage, neoplasm, arteriovenous malformation OR aneurysm
- Aortic dissection OR pericarditis
- Uncontrolled hypertension (systolic BP ≥ 180 AND/OR diastolic BP ≥ 110)

Precautions

- Recent epidural procedure
- Chronic haemodialysis
- History of coagulopathy, platelet disorder or thrombocytopaenia
- Reduced doses are required for patients with renal impairment

Tirofiban

Side effects

- Haemorrhage
- Thrombocytopaenia
- Nausea and/or vomiting
- Rash

Presentation

- Ampoule, 12.5 mg/50 mL *tirofiban*

Onset	Duration	Half-life
Rapid	4–8 hours	≈ 2 hours

Schedule

- S4 (Restricted drugs)

Routes of administration

Intravenous infusion (IV INF) ECCP

Special notes

- 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*.
- All tirofiban infusions must be initiated using hospital supplies. Tirofiban will not be carried by QAS.
- Discard any unused tirofiban preparation after 24 hours.
- Tirofiban should be used concomitantly with heparin and aspirin unless either is contraindicated.
- Reduced dosage is required in patients with severe renal insufficiency (creatinine clearance < 30 mL/min). All dose adjustments must be authorised by the RSQ Clinical Coordinator.

Adult dosages [1–3]

- Reduction of **ischaemic events** associated with ACS and **prior to PCI**
- **Critical care patients during interfacility transport**

ECCP	**IV INF**	Continue tirofiban infusions already commenced at hospital, using the same concentration and administration rate already established. This may involve withdrawing the patient's previously mixed and labelled solutions from the referring hospital.

Adult dosages *(cont.)*

- Reduction of **ischaemic events** associated with ACS and **prior to PCI**
- **Critical care patients during interfacility transport**

ECCP	**IV INF**	CCP ESoP aeromedical – RSQ consultation and approval required in all situations. Should the RSQ clinical coordinator request a tirofiban infusion be commenced, the following procedure must be undertaken. **Loading dose – 0.4 microg/kg/minute over 30 minutes** **Maintenance dose – 0.1 microg/kg/minute** ***Syringe preparation:*** *Withdraw and discard 50 mL from a 250 mL bag of sodium chloride 0.9% or glucose 5% and replace it with 12.5 mg (50 mL) of tirofiban to achieve a final concentration of 50 microg/mL. Mix well and then transfer directly into 50 mL syringes to be administered via syringe drivers. Ensure all syringes are appropriately labelled.*

Adult dosages *(cont.)*

Patient weight (kg)	30 minute loading dose (infusion) 0.4 microg/kg/min	Maintenance (infusion) 0.1 microg/kg/min
46–54	24 mL/hour (for 30 minutes)	6 mL/hour
55–62	28 mL/hour (for 30 minutes)	7 mL/hour
63–70	32 mL/hour (for 30 minutes)	8 mL/hour
71–79	36 mL/hour (for 30 minutes)	9 mL/hour
80–87	40 mL/hour (for 30 minutes)	10 mL/hour
88–98	44 mL/hour (for 30 minutes)	11 mL/hour
99–104	48 mL/hour (for 30 minutes)	12 mL/hour
105–112	52 mL/hour (for 30 minutes)	13 mL/hour
113–120	56 mL/hour (for 30 minutes)	14 mL/hour
121– 128	60 mL/hour (for 30 minutes)	15 mL/hour

Paediatric dosages

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