MONOGRAPH

EPOPROSTENOL (VELETRI®)

Scope (Staff):	Medical, Pharmacy, Nursing
Scope (Area):	Paediatric Critical Care (PCC)

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this DISCLAIMER

QUICKLINKS

Dosage/Dosage Adjustments	Administration	Compatibility	Monitoring

DRUG CLASS

Prostacyclin (prostaglandin I_2)[1]

INDICATIONS

- Pulmonary arterial hypertension.[2]
- Persistent pulmonary hypertension in newborns.[3]
- Anticoagulant in Extracorporeal Membrane Oxygenation (ECMO).[4, 5]
- Peripheral vasodilatation (in peripheral ischaemia).[6]

CONTRAINDICATIONS

- Hypersensitivity to epoprostenol, structurally (prostaglandin) related compounds or any component of the formulation.[7]
- Pulmonary veno-occlusive disease.[1]

PRECAUTIONS

- Epoprostenol has a very short half-life (~ 3 minutes).[3] Abrupt cessation or sudden reduction in infusion rate may cause rebound pulmonary hypertension and platelet hyperaggregability.[2, 8]

- Patients with other risk factors for bleeding – use with caution.[2, 7]
- Epoprostenol may decrease digoxin clearance by 15%.[8]
- Extravasation may cause tissue damage.[9]

FORMULATIONS

Listed below are products available at PCH, other formulations may be available, check with pharmacy if required:

- 500 micrograms vial (Veletri®).

Imprest location: Formulary One

DOSAGE & DOSAGE ADJUSTMENTS

Continuous intravenous infusion:

- Age < 4 weeks: 2 **nano**grams/kg/min, titrated to response up to 20 – 40 **nano**grams/kg/min.[3]
- Age ≥ 4 weeks: 2 **nano**grams/kg/min, titrated to response up to 80 **nano**grams/kg/min.[7] Higher doses may be required in some patients.[7]
- Gradually reduce infusion rate when decreasing dose or stopping therapy to avoid rebound pulmonary hypertension.[10]

Anticoagulant in ECMO circuit (all ages): 5 **nano**grams/kg/min.[5, 11]

Peripheral vasodilatation (all ages): 5 – 15 **nano**grams/kg/min.[6, 12, 13] Higher infusion rates of up to 20 **nano**grams/kg/min have been used.[13]

Renal or hepatic impairment:

- No adjustment necessary.[2]

RECONSTITUTION & ADMINISTRATION

Information below is specific to the **Veletri®** brand only.

Reconstitution & Dilution:[8, 9]

1. Reconstitute the vial with 5mL of sodium chloride 0.9% or water for injection to produce 500 micrograms/5 mL (100 micrograms/mL) of **concentrated solution**.
2. Further dilute the concentrated solution with the same diluent used for reconstitution as below:

Patient's weight	Dilution Instructions	Final Concentration After Dilution
10 kg or less	Draw 1 mL (100 micrograms) of concentrated solution from vial and dilute to final volume of **30 mL**.	100 microg/**30 mL** (3 333 **nano**grams/mL) In a 3 kg patient 5 **nanog**/kg/min = 0.3 mL/hr
Above 10kg	Draw 5 mL (500 micrograms) of concentrate solution from vial and dilute to final volume of 50 mL.	500 microg/50mL (10 000 **nano**grams/mL) In a 20 kg patient 5 **nanog**/kg/min = 0.6 mL/hr

**Different concentrations may be ordered by the treating consultant if clinically necessary.

Administration[8, 9]

- **Syringe must be changed every 24 hours** for both ward AND Pharmacy Compounding Services (PCS) prepared syringes – see storage.
- Extravasation may cause tissue damage.
- Infuse solution via a central venous access device with **0.22 or 0.2 micron inline filter**.
- If temporary administration via peripheral line is necessary prior to central access being established, monitor infusion site closely. Consider having a backup IV access in case of loss of access.
- Do not flush a lumen containing epoprostenol; bolus dose of epoprostenol can be fatal.

*Note: If **Flolan**® brand is used, only the supplied diluent may be used for reconstitution and dilution.*[9]

COMPATIBILITY

Veletri® brand only: Sodium Chloride 0.9%, Water for Injections.[9]

MONITORING

- Continuous cardiac monitoring.[9]
- Monitor infusion site for signs of extravasation especially if administered peripherally.[9]

ADVERSE EFFECTS

Common: Anxiety or agitation, bleeding, chest pain, diarrhoea, dyspnoea, fever, flushing, headache, hyperaesthesia, hypotension, musculoskeletal pain, paraesthesia, sinus tachycardia, sinus bradycardia.[2]

STORAGE(8)

Vials: Store below 25ºC. Protect from light.

Reconstituted/diluted solution prepared on the ward:

- Stable for 24 hours at temperatures up to 30ºC.

Prepared under aseptic conditions (i.e. by Pharmacy Compounding Services):

- Store between 2 – 8ºC for up to 7 days.
- **Once removed from the fridge, discard unused portion after 24 hours**.

INTERACTIONS

This medication may interact with other medications; consult PCH approved references (e.g. Clinical Pharmacology), a clinical pharmacist or PCH Medicines Information Service on extension 63546 for more information.

Please note: The information contained in this guideline is to assist with the preparation and administration of **epoprostenol**. Any variations to the doses recommended should be clarified with the prescriber prior to administration

References

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Document Owner:	Chief Pharmacist		
Reviewer / Team:	Senior Pharmacist, Supervisor Pharmacist – Clinical Services, PCC HoD, Cardiothoracics/ECMO CN		
Date First Issued:	Jan 2022	**Last Reviewed:**	July 2025
Amendment Dates:	Nov 2023, Sep 2025	**Next Review Date:**	Jan 2028
Approved by:	PCHN Medication Safety Committee	**Date:**	Sep 2025
Endorsed by:	CAHS Drug & Therapeutics Committee	**Date:**	Oct 2025
Standards Applicable:	NSQHS Standards: NSMHS: N/A Child Safe Standards: N/A		

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