

PROSTAGLANDINS AND ANALOGUES

Alprostadil

20-Apr-2020

● INDICATIONS AND DOSE

Maintaining patency of the ductus arteriosus

► BY CONTINUOUS INTRAVENOUS INFUSION

- Neonate: Initially 5 nanograms/kg/minute, adjusted according to response, adjusted in steps of 5 nanograms/kg/minute (max. per dose 100 nanograms/kg/minute), maximum dose associated with increased side-effects.

- **UNLICENSED USE** Alprostadil doses in BNFC may differ from those in product literature.
- **CONTRA-INDICATIONS** Avoid in hyaline membrane disease
- **CAUTIONS** History of haemorrhage
- **INTERACTIONS** → Appendix 1: alprostadil
- **SIDE-EFFECTS**
 - **Common or very common** Apnoea (more common in neonates under 2 kg) · arrhythmias · diarrhoea · fever · hypotension · seizure · vasodilation
 - **Uncommon** Exostosis · gastrointestinal disorders · vascular fragility
 - **Frequency not known** Cardiac arrest · disseminated intravascular coagulation · hypokalaemia · oedema · sepsis
- **MONITORING REQUIREMENTS** During the infusion of a prostaglandin, the newborn requires careful monitoring of heart rate, blood pressure, respiratory rate, and core body temperature.
- Monitor arterial pressure, respiratory rate, heart rate, temperature, and venous blood pressure in arm and leg; facilities for intubation and ventilation must be immediately available
- **DIRECTIONS FOR ADMINISTRATION** Dilute 150 micrograms/kg body-weight to a final volume of 50 mL with Glucose 5% or Sodium Chloride 0.9%; an intravenous infusion rate of 0.1 mL/hour provides a dose of 5 nanograms/kg/minute. Undiluted solution must not come into contact with the barrel of the plastic syringe; add the required volume of alprostadil to a volume of infusion fluid in the syringe and then make up to final volume.
- **MEDICINAL FORMS** There can be variation in the licensing of different medicines containing the same drug.
 - **Solution for infusion**
 - **Prostin VR** (Pfizer Ltd)
Alprostadil 500 microgram per 1 mL Prostin VR 500micrograms/1mL concentrate for solution for infusion ampoules | 5 ampoule **[PoM]** £375.96 (Hospital only)

Dinoprostone

20-Apr-2020

● INDICATIONS AND DOSE

Maintaining patency of the ductus arteriosus

► BY CONTINUOUS INTRAVENOUS INFUSION

- Neonate: Initially 5 nanograms/kg/minute, then increased in steps of 5 nanograms/kg/minute as required; increased to 20 nanograms/kg/minute, doses up to 100 nanogram/kg/minute have been used but are associated with increased side-effects.

► BY MOUTH

- Neonate: 20–25 micrograms/kg every 1–2 hours, then increased if necessary to 40–50 micrograms/kg every 1–2 hours, if treatment continues for more than 1 week gradually reduce the dose.

- **UNLICENSED USE** Not licensed for use in children.
- **CONTRA-INDICATIONS** Avoid in hyaline membrane disease
- **CAUTIONS** History of haemorrhage
- **SIDE-EFFECTS**
 - **Rare or very rare** Disseminated intravascular coagulation
 - **Frequency not known** Asthma · back pain · bronchospasm · cardiac arrest · chills · diarrhoea · dizziness · fever · flushing · headache · hypertension · infection · nausea · uterine rupture · vomiting
- **HEPATIC IMPAIRMENT** Manufacturer advises avoid.
- **RENAL IMPAIRMENT** Manufacturers advise avoid.
- **MONITORING REQUIREMENTS** Monitor arterial oxygenation, heart rate, temperature, and blood pressure in arm and leg; facilities for intubation and ventilation must be immediately available. During infusion of dinoprostone, the newborn requires careful monitoring of heart rate, blood pressure, respiratory rate and core body temperature.
- **DIRECTIONS FOR ADMINISTRATION**
 - With intravenous use For *continuous intravenous infusion*, dilute to a concentration of 1 microgram/mL with Glucose 5% or Sodium Chloride 0.9%.
 - With oral use For administration by *mouth*, injection solution can be given orally; dilute with water.
- **MEDICINAL FORMS** There can be variation in the licensing of different medicines containing the same drug.
 - **Solution for infusion**
 - **Prostin E2** (Pfizer Ltd)
Dinoprostone 1 mg per 1 mL Prostin E2 750micrograms/0.75mL solution for infusion ampoules | 1 ampoule **[PoM]** £8.52 (Hospital only)
 - **Dinoprostone 10 mg per 1 mL** Prostin E2 5mg/0.5mL solution for infusion ampoules | 1 ampoule **[PoM]** £18.40 (Hospital only)

10 Vascular disease

Peripheral vascular disease

Classification and management

Raynaud's syndrome, a vasospastic peripheral vascular disease, consists of recurrent, long-lasting, and episodic vasospasm of the fingers and toes often associated with exposure to cold. Management includes avoidance of exposure to cold and Smoking cessation p. 313 (if appropriate). More severe symptoms may require vasodilator treatment, which is most often successful in primary Raynaud's syndrome. Nifedipine p. 115 and diltiazem hydrochloride p. 152 are useful for reducing the frequency and severity of vasospastic attacks. In very severe cases, where digital infarction is likely, intravenous infusion of the prostacyclin analogue iloprost p. 127 may be helpful.

Vasodilator therapy is not established as being effective for *chilblains*.

Advanced Pharmacy Services

Children with peripheral vascular disease may be eligible for the Medicines Use Review service provided by a community pharmacist. For further information, see *Advanced Pharmacy Services* in Medicines optimisation p. 25.