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Metolazone

- **INDICATIONS AND DOSE**

Oedema resistant to loop diuretics in heart failure, renal disease and hepatic disease | Pulmonary oedema | Adjunct to loop diuretics to induce diuresis

- BY MOUTH
- Child 1 month-11 years: 100–200 micrograms/kg 1–2 times a day
- Child 12-17 years: 5–10 mg once daily, dose to be taken in the morning; increased if necessary to 5–10 mg twice daily, dose increased in resistant oedema

- **UNLICENSED USE** Not licensed for use in children.
- **CAUTIONS** Acute porphyrias p. 624
- **INTERACTIONS** → Appendix 1: thiazide diuretics
- **SIDE-EFFECTS** Chest pain · chills
- **BREAST FEEDING** The amount present in milk is too small to be harmful. Large doses may suppress lactation.
- **DIRECTIONS FOR ADMINISTRATION** Tablets may be crushed and mixed with water immediately before use.

- **MEDICINAL FORMS** There can be variation in the licensing of different medicines containing the same drug. Forms available from special-order manufacturers include: tablet, oral suspension, oral solution

Tablet

- **Zaroxolyn (Imported (Canada))**
  Metolazone 2.5 mg Zaroxolyn 2.5mg tablets | 100 tablet PoM
  Metolazone 5 mg Zaroxolyn 5mg tablets | 50 tablet PoM

9 Patent ductus arteriosus

Drugs affecting the ductus arteriosus

Closure of the ductus arteriosus

Patent ductus arteriosus is a frequent problem in premature neonates with respiratory distress syndrome. Substantial left-to-right shunting through the ductus arteriosus may increase the risk of intraventricular haemorrhage, necrotising enterocolitis, bronchopulmonary dysplasia, and possibly death. Indometacin p. 681 or ibuprofen p. 679 can be used to close the ductus arteriosus. Indometacin has been used for many years and is effective but it reduces cerebral blood flow, and causes a transient fall in renal and gastro-intestinal blood flow. Ibuprofen may also be used; it has little effect on renal function (there may be a small reduction in sodium excretion) when used in doses for closure of the ductus arteriosus; gastro-intestinal problems are uncommon. If drug treatment fails to close the ductus arteriosus, surgery may be indicated.

Maintenance of patency

In the newborn with duct-dependent congenital heart disease it is often necessary to maintain the patency of the ductus arteriosus whilst awaiting surgery. Alprostadil below (prostaglandin E1) and dinoprostone below (prostaglandin E2) are potent vasodilators that are effective for maintaining the patency of the ductus arteriosus. They are usually given by continuous intravenous infusion, but oral dosing of dinoprostone is still used in some centres. During the infusion of a prostaglandin, the newborn requires careful monitoring of heart rate, blood pressure, respiratory rate, and core body temperature. In the event of complications such as apnoea, profound bradycardia, or severe hypotension, the infusion should be temporarily stopped and the complication dealt with; the infusion should be restarted at a lower dose. Recurrent or prolonged apnoea may require ventilatory support in order for the prostaglandin infusion to continue.

PROSTAGLANDIN ANALOGUES AND PROSTAMIDES › PROSTAGLANDINS

Alprostadil

20-Jul-2017

- **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

29-Mar-2017

- **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.

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