

## HYDROCORTISONE

### ACTION and USES

Hydrocortisone is a glucocorticoid steroid which is used for several indications: to increase survival without bronchopulmonary dysplasia (BPD) in babies < 28 weeks gestation, the management of hypoglycaemia unresponsive to glucose infusion, management of Addisonian crisis, treatment of congenital adrenal hyperplasia, pituitary insufficiency, hypotension unresponsive to dopamine and in therapeutic cooling.

### DOSAGE

#### IV

Survival without BPD		0.5mg/kg every 12 hours for 7 days then 0.5mg/kg every 24 hours for 3 day
Hypoglycaemia		5mg/kg every 12 hours or 2.5mg/kg every 6 hours. Continue for approximately 3 days once blood glucose stable.
Hypotension		2.5mg/kg repeat if necessary after 4 hours then 2.5mg/kg every 6 hours for 48s hours or until blood pressure recovers. Withdraw treatment over 2 to 4 days
Addisonian Crisis, Suspected bilateral adrenal haemorrhage		10mg followed by 5mg every 6 hours (dose not weight dependent)

#### ORAL

Consultant paediatric endocrinologist to advise on all dosages

Congenital adrenal hyperplasia		Normally 2.5mg every 8 hours orally (can be given as quarter 10mg tablet 8 hourly if not available in solution) until salt losing status has been resolved (if applicable) and is stable. Treatment may then be reduced to 15mg/m <sup>2</sup> /day on the advice of paediatric endocrinologist. <b>See oral reconstitution below.</b>
Pituitary insufficiency ≥ 3kg (8-10mg/m <sup>2</sup> /day) < 3kg		1mg every 8 hours for contact paediatric endocrinologist for dose

### MANAGEMENT OF DETERIORATING PATIENT ON REGULAR MAINTENANCE HYDROCORTISONE

If the infant becomes unwell and a minor illness suspected, the oral dose should be increased by doubling it.

If a more significant illness is suspected (eg sepsis) the IV dose for Addisonian crisis should be considered. This would also be required for infant going for surgery (usually starting at induction of anaesthesia). In both instances contact Paediatric Endocrine Consultant and refer to RHSC guidelines for management of known or suspected acute adrenal insufficiency.

### ADMINISTRATION

Guidelines for IV medicine administration - Lothian Neonatal Service

Prepared by: Jenny Carson December 18

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Checked by: Sherry Wright Version 8

IV bolus over 3 minutes

For Addisonian crisis: IV infusion over 30 minutes

## RECONSTITUTION

### IV Preparation

Hydrocortisone is available as a dry powder containing 100mg per vial.

#### Hydrocortisone sodium succinate 50mg/ml

Add 1.9ml of water for injection to 100mg vial of hydrocortisone sodium succinate, shake well. Dilute further if volume of dose is less than 0.1ml.

#### Hydrocortisone sodium succinate 5mg/ml (off label concentration)

Mix 1ml hydrocortisone sodium succinate 50mg/ml with 9ml water for injection or glucose 5% and shake well to mix.

**Or**

#### Hydrocortisone sodium succinate 1mg/ml

Mix 0.2 ml hydrocortisone sodium succinate 50mg/ml with 9.8 ml water for injection or glucose 5% and shake well to mix.

### Oral Preparation

For oral administration it is available as a 10mg tablet which can be halved or quartered. The portion of tablets should be dissolved in 1-2ml of water prior to administration.

If it is not possible to give the dose by halving or quartering the tablet a proportion of a 1mg/ml solution made by dissolving a 10mg tablet in 10ml of water should be administered.

## COMPATIBILITY INFORMATION

**Compatible infusion fluids:** Glucose 5%, glucose 10%, sodium chloride 0.45%, sodium chloride 0.9%

**Compatible infusions** if they meet close to the cannula site: Aciclovir, digoxin, dopamine hydrochloride, fentanyl citrate, furosemide, heparin sodium (in sodium chloride 0.9%) metronidazole, morphine sulfate, vecuronium bromide

**Incompatible:** Ciprofloxacin, diazepam, midazolam, phenytoin sodium.

## INCOMPATIBILITIES

None stated.

## STORAGE

Use diluted intravenous or oral solutions immediately and discard remainder. Unopened vials are stored in IV medicines cupboard.

## MONITORING

Monitor blood pressure, urea and electrolytes, blood glucose and fluid balance.

Note: A baby on maintenance dose hydrocortisone MUST NOT be discharged home under any circumstance without written instructions on what to do if the baby becomes unwell and written instructions on the use of IM hydrocortisone(as sodium phosphate)at a dose of 25mg.

## REFERENCE

1. Baud O et al. Effect of early low-dose hydrocortisone on survival without bronchopulmonary dysplasia in extremely preterm infants (PREMILOC): a double-blind, placebo-controlled, multicentre, randomised trial. The Lancet. 2016; 387 (10030) P1827-1836