HYDROCORTISONE

Read in conjunction with Disclaimer

Formulary: Restricted Requires neonatologist or relevant specialist review within 24 hours of initiation.	
Presentation	**Vial:** 100 mg (powder for reconstitution) **Oral mixture (KEMH):** 1 mg/mL (prepared in pharmacy) **Oral suspension (PCH):** 1 mg/mL
Classification	Corticosteroid - glucocorticoid
Indication	• Physiological replacement in hypoadrenalism. • Relative adrenal insufficiency (RAI) in sick neonate where hypotension is refract to inotropic agents and random cortisol less than 430 nmol/L. • Short term adjunct therapy for intractable hypoglycaemia (limited evidence).
Special Considerations	**Contraindications:** • Do not use in patients with systemic fungal infection. **Precautions:** • Use with caution in patients with systemic bacterial infections - Immunosuppression and an increased risk for infection are possible during steroid therapy. • Use with caution in patients with renal impairment, hypothyroidism, or cardiac disease. • High doses and prolonged corticosteroid use may require gradual reduction of dose before cessation. • Caution should be used when using hydrocortisone for treatment of hypoglycaemia given the lack of evidence, potential for adrenal suppression and side effects.
Monitoring	• Monitor blood pressure and blood glucose frequently during acute illness. • In RAI, monitor cortisol level as per Cortisol Estimation and ACTH Stimulation Testing. • Monitor growth velocity, body weight, blood pressure, blood glucose, electrolytes, bone mineral density.
Compatibility	**Fluids:** Sodium chloride 0.9%, glucose 5%, glucose 10%, water for injection. **Y-site at 50 mg/mL of hydrocortisone:** Atropine, cefazolin, cefotaxime, ceftriaxone, clindamycin, dexamethasone, digoxin, erythromycin, fentanyl, fluconazole, furosemide, heparin sodium, lidocaine, meropenem, morphine sulfate, paracetamol, sodium bicarbonate. **Y-site at 1 mg/mL of hydrocortisone:** Aciclovir, caspofungin, linezolid, piperacillin-tazobactam.
Incompatibility	**Y-site:** Amiodarone, ciprofloxacin, dobutamine, labetalol, midazolam, pyridoxine.

Interactions	• Hydrocortisone may reduce potassium concentration and increase risk of hypokalaemia. Administration with other medications that also reduce potassium concentration may increase this risk; monitor potassium concentration and give supplements if necessary. • Increased risk of gastrointestinal perforations when treating concurrently with indomethacin. • Hydrocortisone can increase blood glucose concentration.
Adverse Effects	Hyperglycaemia, hypertension. Abdominal distension, nausea, diarrhoea, oesophagitis, gastric irritation. Hypokalaemia, hypocalcaemia Impaired wound healing, inhibits immune function, may mask infection symptoms. Growth suppression. ***Note:*** *There is an extensive list of adverse effects associated with corticosteroid use, this list is not exhaustive, for further information or for specific patient concerns contact the pharmacist.*
Storage & Stability	**Vial:** Store at room temperature, below 25°C. Protect from light. **Oral mixture (KEMH):** Store at room temperature, below 25°C. **Oral suspension (PCH):** Store at room temperature, below 25°C.
Comments	There is limited evidence for the use of hydrocortisone for hypoglycaemia, dosing derived from case reports.
Body Surface Area Estimate	**Weight (kg)** / **Surface area (m^2)** 0.6 / 0.08 1 / 0.1 1.4 / 0.12 2 / 0.15 4 / 0.25 BSA (m^2) = (0.05 x kg) + 0.05

ORAL

Presentation (for oral use)	**Oral mixture (KEMH):** 1 mg/mL (prepared in pharmacy) **Oral suspension (PCH):** 1 mg/mL
Dosage	**Physiologic replacement:** *Consult paediatric endocrinologist before prescribing,* 8 to 18 mg/m^2 per day in 2 or 3 divided doses. See Body Surface Area Estimate above. **Intractable hypoglycaemia:** 1 to 2 mg/kg/dose every 6 hours.
Administration	• Shake well before use. • Draw prescribed dose into oral/enteral syringe. • Can be given Oral/OGT/NGT. • Give with or soon after a feed.

INTRAVENOUS

Presentation (for IV use)	**Vial:** 100 mg (powder for reconstitution) ***Available from CIVAS (KEMH):*** *10 mg/mL (push), 1 mg/mL (infusion)*
Dosage	**Physiologic replacement:** *Consult paediatric endocrinologist before prescribing,* 8 to 18 mg/m^2 per day in 2 or 3 divided doses. See Body Surface Area Estimate above.
	Hypotension secondary to RAI:

Corrected Gestational Age	Dose	Frequency
Less than 35 weeks	0.5 to 1 mg/kg/dose	Every 8 to 12 hours
35 weeks or greater	0.5 to 1 mg/kg/dose	Every 6 to 8 hours

	Intractable hypoglycaemia (limited evidence): 1 to 2 mg/kg/dose every 6 hours.
IV Push Preparation	**IV push**: 10 mg/mL **Step 1 Reconstitution:** • Add 2 mL of water for injection or sodium chloride 0.9% to the 100 mg hydrocortisone vial. **Step 2 Dilution:** • Draw up 2 mL (100 mg) and make up to 10 mL total volume with compatible diluent. *Concentration now equal to* **10 mg/mL.**
IV Infusion Preparation	*For small doses less than 2 mg:* **IV infusion**: 1 mg/mL **Step 1 Reconstitution:** • Add 2 mL of water for injection or sodium chloride 0.9% to the 100 mg hydrocortisone vial. **Step 2 Dilution:** • Draw up 1 mL (50 mg) and make up to 50 mL total volume with compatible diluent. *Concentration now equal to* **1 mg/mL.**
Administration	**IV push (10 mg/mL):** Inject over 3 to 5 minutes.
	IV infusion (1 mg/mL): Infuse via syringe driver pump over 10 to 30 minutes.
	Note: *There is no available data to support administering hydrocortisone 1 mg/mL as an IV push, however it may be considered in practice for small doses where infusion is not appropriate at the discretion of the doctor.*

Related Policies, Procedures, and Guidelines

CAHS Clinical Practice Guidelines:

Neonatology - Cortisol Estimation and ACTH Stimulation Testing

Pharmaceutical and Medicines Management Guidelines:

CAHS Neonatology – Medication Administration Guideline

References

AusDI. Solu-Cortef (Hydrocortisone Sodium Succinate). In: AusDI By Medical Director [Internet]. Australia: AusDI by Medical Director; 2025 [cited 2026 Feb 11]. Available from: https://www.ausdi.com/

Australasian Neonatal Medicines Formulary (ANMF). Hydrocortisone. In: Australasian Neonatal Medicines Formulary [Internet]. [Sydney, New South Wales; 2022 [cited 2026 Feb 11]. Available from: www.anmfonline.org

British National Formulary. BNF for Children. 2023-24 ed. London, UK: BMJ Group and Pharmaceutical Press; 2023. p. 216-517.

Phelps SJ, Hagemann TM, Lee KR, Thompson AJ. Pediatric Injectable Drugs: The Teddy Bear Book. Eleventh ed. Bethesda (Maryland): American Society of Health-System Pharmacists; 2018. p.468-471.

Society of Hospital Pharmacists of Australia. Hydrocortisone Sodium Succinate. In: Australian Injectable Drugs Handbook [Internet]. [St Leonards, New South Wales]: Health Communication Network; 2025 [cited 2025 Feb 11]. Available from: http://aidh.hcn.com.au

Truven Health Analytics. Hydrocortisone. In: NeoFax [Internet]. Greenwood Village (CO): Truven Health Analytics; 2025 [cited 2026 Feb 11]. Available from: https://neofax.micromedexsolutions.com/

UpToDate Lexidrug. Hydrocortisone (systemic): Pediatric drug information. In: UpToDate Lexidrug [Internet]. Wolters Kluwer; 2025. [cited 2026 Feb 11]. Available from: https://www.uptodate.com/

Document history

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