hydrocortisone

Canadian drug name.

Genetic Implication. CAPI TALS indicate life-threatening, underlines indicate most frequent. Strikethrough.

Discontinued.

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hydrocortisone (hye-droe-kor-ti-sone)

Cortef, Cortenema, Hycort, Solu-CORTEF

Classification

Therapeutic: anti-inflammatories (steroidal)
Pharmacologic: corticosteroids

Pregnancy Category C

Indications

Management of adrenocortical insufficiency; chronic use in other situations is limited because of mineralocorticoid activity. Used systemically and locally in a wide variety of disorders including: Inflammatory, Allergic, Rheumatologic, Neoplastic, Autoimmune disorders. Septic shock.

Action

In pharmacologic doses, suppresses inflammation and the normal immune response. Has numerous intense metabolic effects (see Adverse Reactions and Side Effects). Suppresses adrenal function at chronic doses of 20 mg/day. Replaces endogenous cortisol in deficiency states. Also has potent mineralocorticoid (sodium-retaining) activity.

Therapeutic Effects:
Replacement therapy in adrenal insufficiency. Suppression of inflammation and modification of the normal immune response.

Pharmacokinetics

Absorption: Well absorbed following oral administration. Sodium succinate salt is rapidly absorbed following IM administration. Absorption from local sites (intra-articular, intralesional) is slow but complete.
Distribution: Widely distributed, crosses the placenta, and probably enters breast milk.
Metabolism and Excretion: Metabolized mostly by the liver.
Half-life: 1.5–2 hr (plasma), 6–12 hr (tissue), adrenal suppression lasts 1.25–1.5 days.

TIME/ACTION PROFILE (anti-inflammatory activity)

<table>
<thead>
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<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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<td>1–2 hr</td>
<td>1.25–1.5 days</td>
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<tr>
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<td>rapid</td>
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<tr>
<td>IV</td>
<td>rapid</td>
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Contraindications/Precautions

Contraindicated in: Active untreated infections (may be used in patients being treated for tuberculous meningitis or septic shock); Lactation: Avoid chronic use; Known alcohol, bisulfite, or tartrazine hypersensitivity or intolerance (some products contain these and should be avoided in susceptible patients).

Use Cautiously in:
Chronic treatment (will lead to adrenal suppression; use lowest possible dose for shortest period of time); Pedi: Chronic use will result in growth suppression; lowest possible dose for shortest period of time; Hypothyroidism; Cushing’s; Ulcerative colitis; Stress (surgery, infections); supplemental doses may be needed; Potential infections may mask signs (fever, inflammation). GMTI Safety not established.

Adverse Reactions/Side Effects


Interactions

Drug-Drug: Additive hypokalemia with thiazide and loop diuretics, or amphotericin B. Hypothyroidism may: ↑ the risk of diabetes mellitus or oral hyperglycemic agents. Phenytoin, phenobarbital, and rifampin may: ↓ effectiveness. Oral contraceptives may: ↓ metabolism. ↑ risk of adverse GI effects with NSAIDs (including aspirin). At chronic doses that

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suppress adrenal function, may affect antibody response to and risk of adverse reactions from live-virus vaccines.

Route/Dosage

**PO (Adults and Children ≥12 yr):** 20–240 mg/day in 1–4 divided doses.

**PO (Children):**
- Physiologic replacement: 0.5–0.75 mg/kg/day or 20–25 mg/m²/day divided q 6 hr. Anti-inflammatory or immunosuppressive: 2.5–10 mg/m²/day or 75–300 mg/m²/day divided 3–4 divided doses.

**IV (Ventricular):** Congestive heart failure: 10–20 mg/m²/day in 1–2 divided doses.

**PO, IV (Neonates):**
- Congenital adrenal hyperplasia: 10–20 mg/m²/day in 3 divided doses.
- Refractory hypoglycemia: 5 mg/kg/day divided q 8–12 hr or 1–2 mg/kg/dose q 6 hr.

**Rect (Adults):** Retention enema: 100 mg nightly for 21 days or until remission occurs.

**IM, IV (Adults):** 100–500 mg q 2–6 hr (range 100–8000 mg/day).

**IM, IV (Children and Infants):** Adrenocortical insufficiency: 1–2 mg/m²/day, then 25–35 mg/m²/day in divided doses q 6–8 hr. Anti-inflammatory or immunosuppressive: 1–2 mg/m²/day q 2–6 hr. Physiologic replacement: 0.25–0.5 mg/kg/day or 1–2 mg/m²/day once daily. Shock: 30 mg/kg bolus then 10 mg/kg q 4 hr for infusion.

**IV (Neonates):**
- Bronchopulmonary dysplasia prevention in preterm neonates with prenatal inflammatory exposure: 1 mg/kg/day divided q 12 hr during first 2 weeks of life. Physiologic replacement: 3–6 mg/kg/day divided q 8 hr in 5 days.

**NURSING IMPLICATIONS**

**Assessment**
- Indicated for many conditions. Assess involved systems prior to and periodically during therapy.
- Assess patient for signs of adrenal insufficiency (hypotension, weight loss, weakness, nausea, vomiting, anorexia, lethargy, confusion, restlessness) prior to and periodically during therapy.
- Monitor plasma cortisol concentrations and daily weights. Observe patient for percutaneous edema, sudden weight gain, edema, or hypokalemia. Notify health care professional should these occur.
- Children should have periodic evaluations of growth.

**Implementation**
- Do not confuse hydrocortisone with hydrocortisone acetate. Do not confuse Solu-Cortef with Solu-Medrol (methylprednisolone).
- PO: Administer with meals to minimize GI irritation.
- Tablets may be crushed and administered with food or fluids for patients with difficulty swallowing.
- IV: Dilution: May be added to 50–1000 mL of D5W or 0.9% NaCl. Concentration: Usual 1–5 mg/mL. Adults who are fluid restricted may receive up to 60 mg/mL. Rate: Administration over 20–30 min.
### Y-Site Compatibility:
- hydrocortisone
- norelbine, voriconazole, zoledronic acid.
- trastuzumab, trimetaphan, vasopressin, vecuronium, verapamil, vincristine, vinorelbine,
- nitroprusside, norepinephrine, octreotide, ondansetron, oxacillin, oxaliplatin,
- multivitamins, nafcillin, naloxone, neostigmine, nesiritide, nicardipine, nitroglycerin,
- clopramide, metoprolol, metronidazole, milrinone, mitoxantrone, morphine,
- taraminol, methotrexate, methoxamine, methyldopate, methylergonovine, metoclopramide, metoclopramide, methotrexate, methoxamine, methyldopate, methylergonovine, metho
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cefuramid, bleomycin, bumetanide, buprenorphine, butorphanol, carboplatin, ceftria
tin, argatroban, ascorbic acid, atracurium, atropine, aztreonam, benztropine, amphot
ericin B lipid complex, amphotericin B liposome, amrubicin, amifostine, argatroban,
If rectal dose used – 21 days, decrease to every other night for 2–3 weeks to decrease gradually.

**Evaluation/Desired Outcomes**
- Decrease in presenting symptoms with minimal systemic side effects.
- Suppression of the inflammatory and immune responses in autoimmune disorders, allergic reactions, and neoplasms.
- Management of symptoms in adrenal insufficiency.
- Improvement in symptoms of ulcerative colitis. Clinical symptoms usually improve in 3–5 days. Mucosal appearance may require 2–3 mo to improve.

**Why was this drug prescribed for your patient?**