cortisone (kor-i-sone)

*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. Replacement therapy in adrenal insufficiency.

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

**Pharmacokinetics**

**Absorption:** Well absorbed after oral administration.

**Distribution:** Widely distributed; crosses the placenta and enters breast milk.

**Metabolism and Excretion:** Metabolized mostly by the liver to inactive metabolites.

**Half-life:** 0.5–2 hr (plasma), 8–12 hr (tissue).

**TIME/ACTION PROFILE (anti-inflammatory activity)**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>Rapid</td>
<td>2 hr</td>
<td>1.25–1.5 days</td>
</tr>
</tbody>
</table>

**Contraindications/Precautions**

**Contraindicated in:** Active untreated infections (may be used in patients being treated for tuberculous meningitis);

**Use Cautiously in:** Chronic treatment (will lead to adrenal suppression; use lowest possible dose for shortest period of time), unless being used to treat adrenal insufficiency; Stress (surgery, infections); supplemental doses may be needed; Hypothyroidism; Genetic Implication. CAPI TALS indicate life-threatening, underlines indicate most frequent. Strikethrough indicates discontinued.

**Adverse Reactions/Side Effects**
Adverse reactions/side effects are much more common with high-dose/long-term therapy:

**CNS:** depression, euphoria, headache, intracranial pressure (children only), depression, confusion, convulsions, RENAL: edema, hypertension, CV: hyperglycemia, dilated pupils, anorexia, nausea, vomiting, Dec: edema, tinnitus, anxiety, weakness, fatigue, weight gain, weight loss, increased appetite, thirst; H: hypokalemia, hypokalemic alkalosis. Hemat: hematocrit reduction, hemoglobin reduction. Meta: weight gain, weight loss, MI, congestive heart failure, nausea, vomiting.

**Interactions**

**Drug-Drug:** Additive hypokalemia with thiazide or loop diuretics, or amphotericin B. Hypokalemia may ↑ risk of digoxin toxicity. MAO inhibitors or isoniazid may ↑ risk of adverse reactions with MAOIs (including aspirin). At chronic doses that suppress adrenal function, may ↑ antibody response to and ↑ risk of adverse reactions from live-virus vaccines.

**Route/Dosage**

**PO (Adults):** 25–300 mg/day in divided doses every 12–24 hr.

**PO (Children):** Adrenocortical insufficiency—0.7 mg/kg/day (20–25 mg/m2/day) in divided doses every 8 hr. Other uses—2.5–10 mg/kg/day (75–300 mg/m2/day) in divided doses every 6–8 hr.

**NURSING IMPLICATIONS**

**Assessment**
- Indicated for more conditions— inverse relationship between lowest possible dose and periodicity during therapy.
Assess patient for signs of adrenal insufficiency (hypotension, weight loss, weakness, nausea, vomiting, anorexia, lethargy, confusion, restlessness) before and periodically during therapy.

Monitor intake and output ratios and daily weights. Observe patient for peripheral edema, steady weight gain, rales/crackles, or dyspnea. Notify health care professional if these occur.

Children should have periodic evaluations of growth.

Lab Test Considerations: Monitor serum electrolytes and glucose. May cause hyperglycemia, especially in persons with diabetes. May cause hypokalemia. Patients on prolonged courses of therapy should routinely have hematologic values, serum electrolytes, and serum creatinine evaluated. May decrease WBC counts. May decrease serum potassium and calcium and increase serum sodium concentration.


May ↑ serum cholesterol and lipoprotein levels. May ↓ uptake of thyroid123I or131I.

May suppress reactions to allergy skin tests.

Periodic adrenal function tests may be ordered to assess degree of hypothalamic-pituitary-adrenal axis suppression in systemic and chronic topical therapy.

Potential Nursing Diagnoses
Risk for infection (Side Effects)
Disturbed body image (Side Effects)

Implementation

If dose is ordered daily or every other day, administer in the morning to coincide with the body’s normal secretion of cortisol.

PO: Administer with meals to minimize GI irritation.

Tablets may be crushed and administered with food or fluids for patients with difficulty swallowing.

Patient/Family Teaching

Instruct patient on correct technique of medication administration. Advise patient to take medication as directed. Take missed doses as soon as remembered unless almost time for next dose. Do not double doses. Stopping the medication suddenly may result in adrenal insufficiency (anorexia, nausea, weakness, fatigue, drowsiness, hypotension, hypertension). If these signs appear, notify health care professional immediately. This can be life threatening.

Glucocorticoids cause immunosuppression and may mask symptoms of infection. Instruct patient to avoid people with known contagious illnesses and to report possible infections immediately.

Children should avoid vaccinations without first consulting health care professional.

Stop side effects with patient. Instruct patient to inform health care professional if symptoms of underlying disease return or worsen.

Advises patient of importance of periodic laboratory studies to monitor hematologic values, serum electrolytes, and serum creatinine.

Advise patient to carry identification describing disease process and medication regimen in the event of an emergency.

Explain need for continued medical follow-up to assess effectiveness and possible side effects of medication. Periodic laboratory and eye exams may be needed.

Long-term therapy: Encourage patient to eat a diet high in proteins, calcium, and potassium, and low in sodium and carbohydrates. Alcohol should be avoided during therapy.

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 benign prostatic hyperplasia.

Management of symptoms in adrenal insufficiency.

Why was this drug prescribed for your patient?