prednisolONE (pred-niss-oh-lone)

**Therapeutic:** anti-inflammatories (steroidal) (intermediate-acting), immune modifiers

**Pregnancy Category:** C

**Indications**

Used systemically and locally in a wide variety of chronic diseases including: Inflammatory, Allergic, Hematologic, Neoplastic, Autoimmune disorders. Suitable for alternate-day dosing in the management of chronic illness. Replacement therapy in adrenal insufficiency.

**Unlabeled Use:** Adjunctive therapy of hypercalcemia. Adjunctive management of nausea and vomiting from chemotherapy.

**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 5 mg/day. Has minimal mineralocorticoid activity.

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

**Pharmacokinetics**

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

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

**Metabolism and Excretion:** Metabolized mostly by the liver.

**Half-life:** 2.1–3.5 hr (plasma), 18–36 hr (tissue); adrenal suppression lasts 1.25–1.5 days.

**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>unknown</td>
<td>1–2 hr</td>
<td>1.25–1.5 days</td>
</tr>
</tbody>
</table>

- C = Common drug name
- G = Genetic Implication
- OPTMisc indicate not thoroughly studied; underline indicate most frequent

**Contraindications/Precautions**

Contraindicated in: Active untreated infections (may be used in patients being treated for tuberculosis). Avoid chronic use; known alcohol or histamine H2-receptor antagonists or overdose (some products contain alcohol; avoid in susceptible patients).

**Use Cautionally in:** Chronic use (leads to adrenal suppression; use lowest possible dose for shortest period of time). Use for highest possible dose for shortest period of time. Stress (surgery, infections) may require increased dose; potential infections may mask signs (fever, inflammation). PO: Bronchitis (oral solution and syrup contains benzoic acid, a metabolite of benzyl alcohol, which can cause potentially fatal gasping syndrome). OB: Safety not established.

**Adverse Reactions/Side Effects**

Adverse reactions/side effects are much more common with high-dose/long-term therapy. CNS: depression, euphoria, headache, q intracranial pressure (children only), personality changes, psychoses, restlessness.

EENT: cataracts, q intraocular pressure.

CV: hypertension.

GI: peptic ulceration, anorexia, nausea, vomiting.

Derm: acne, wound healing, ecchymoses, fragility, hirsutism, petechiae.

Endo: adrenal suppression, hyperglycemia.

F and E: fluid retention (long-term high doses), hypokalemia, hypokalemic alkalosis.

Hemat: thromboembolism, thrombophlebitis.

Metab: weight gain, weight loss.

MS: muscle wasting, osteoporosis, avascular necrosis of joints, muscle pain.

Misc: cushingoid appearance (moon face, buffalo hump), susceptibility to infection.

**Interactions**

**Drug-Drug:** Additive hypokalemia with thiazide and loop diuretics, amphotericin B, vancomycin, nucleoside analogues (risk of nephrotoxicity). Minimize need for nonsteroidal anti-inflammatory agents. Pheno-barbital and rifampin stimulate metabolism, may decrease digoxin levels, oral contraceptives may increase digoxin levels (oral contraceptives may also affect metabolism). Oral contraceptives may antagonize the effects of NSAIDs (including aspirin). The adrenal suppression effect may be eliminated in patients receiving adrenocorticosteroids (treatment with live-virus vaccines may be hazardous). May increase risk of tendon rupture from fluoroquinolones.

**Route/Dosage**

**PO (Adults):** Most uses—5–60 mg/day as a single dose or in divided doses. Multiple sclerosis—200 mg/day for 7 days, then 80 mg every other day for 1 mo. Arthritis—5–60 mg/day. Asthma—5–40 mg/day. Multiple sclerosis—60 mg/day for 2 weeks, then 30 mg every other day for 4 mo. Arthritis—5–40 mg/day.
exacerbations—120–180 mg/day in divided doses 3–4 times/day for 48 hr, then 60–80 mg/day in 2 divided doses.

PO (Children): dose—steroid-responsive hemophagocytic syndrome—0.1–2 mg/kg/day in 1–3 divided doses. Nephrotic syndrome—2 mg/kg/day (50 mg/m²/day) in 1–3 divided doses daily (maximum dose: 60 mg/day) until urine is protein free for 4–6 weeks, followed by 2 mg/kg/day (40 mg/m²/day) every other day in the morning, gradually taper off over 4–6 weeks. Asthma exacerbations—1 mg/kg/day for 48 hr, then 1–2 mg/kg/day (maximum 60 mg/day) divided twice daily.

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 intake and output ratios and daily weights. Observe patient for peripheral edema, steady weight gain, rales/crackles, or dyspnea. Notify health care professional should these occur.
- Pedi: 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 hyperkalemia. Patients on prolonged therapy should routinely have hematologic values, serum electrolytes, and serum and urine glucose evaluated.
- May suppress uric acid excretion and increase serum uric acid concentrations.
- 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)
- Deficient knowledge, related to medication regimen (Patient/Family Teaching)

Implementation
- If dose is ordered daily or every other day, administer in the morning to coincide with the body’s normal secretion of cortisol.
- Periods of stress, such as surgery, may require supplemental systemic corticosteroids.
- PO: Administer with meals or milk to minimize GI irritation.
- Oral: May be administered with food or fluids for patients with difficulty swallowing.
- Oral disintegrating tablets: Remove tablet from blister just prior to dosing. Peel blister pack open, and place orally disintegrating tablet on tongue. Tablets may be swallowed whole or allowed to dissolve in mouth, whole or without water. Do not cut, split, or break. Use calibrated measuring device to ensure accurate dose of oral forms.

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, dyspnea, hypotension, hypoglycemia). 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.
- Periodic: serum cholesterol and lipid values. May suppress uric acid excretion and increase serum uric acid concentrations.
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● Advise patient to carry identification describing disease process and medication regimen in the event of emergency in which patient cannot relate medical history.
● Explain need for continued medical follow-up to assess effectiveness and possible side effects of medication. Periodic lab tests and eye exams may be needed.
● Long-term therapy: Encourage patient to eat a diet high in protein, 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 neoplasms.
● Management of symptoms in adrenal insufficiency.

Why was this drug prescribed for your patient?