prednisoLONE (pred-**niss**-oh-lone)

Flo-Pred, Orapred, Orapred ODT, Pediapred, Prelone

Classification

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)

ROUTE	ONSET	PEAK	DURATION
PO	unknown	1–2 hr	1.25–1.5 days

Contraindications/Precautions

Contraindicated in: Active untreated infections (may be used in patients being treated for tuberculous meningitis); ***Lactation:*** Avoid chronic use; Known alcohol or bisulfite hypersensitivity or intolerance (some products contain these; avoid in susceptible patients).

Use Cautiously in: Chronic treatment (leads to adrenal suppression; use lowest possible dose for shortest period of time); ***Pedi:*** Chronic use will result in ↓ growth; use lowest possible dose for shortest period of time; Stress (surgery, infections); supplemental doses may be needed; Potential infections may mask signs (fever, inflammation); ***Pedi:*** Neonates (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, ↑ intracranial pressure (children only), personality changes, psychoses, restlessness. **EENT:** cataracts, ↑ 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**, **piperacillin**, or **ticarcillin**. Hypokalemia may ↑ risk of **digoxin** toxicity. May ↑ requirement for **insulin** or **oral hypoglycemic agents**. **Phenytoin**, **phenobarbital**, and **rifampin** stimulate metabolism; may ↓ effectiveness. **Oral contraceptives** may ↓ metabolism. ↑ risk of adverse GI effects with **NSAIDs** (including **aspirin**). At chronic doses that suppress adrenal function, may ↓ antibody response to and ↑ risk of adverse reactions from **live-virus vaccines**. May ↑ 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. *Asthma*

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): *Anti–inflammatory/Immunosuppressive*— 0.1–2 mg/kg/day in 1–4 divided doses. *Nephrotic syndrome*— 2 mg/kg/day (60 mg/m²/day) in 1–3 divided doses daily (maximum dose: 80 mg/day) until urine is protein free for 4–6 weeks, followed by 2 mg/kg/dose (40 mg/m²/dose) every other day in the morning, gradually taper off over 4–6 weeks. *Asthma exacerbations*— 1 mg/kg q 6 hr 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 hypokalemia. Patients on prolonged therapy should routinely have hematologic values, serum electrolytes, and serum and urine glucose evaluated. May ↓ WBC counts. May ↓ serum potassium and calcium and increase serum sodium concentrations.
- **Guaiac test stools. Promptly report presence of guaiac-positive stools.**
- May ↑ serum cholesterol and lipid values. May ↓ uptake of thyroid ^{123}I or ^{131}I.
- Suppresses 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)
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.
- Tablets may be crushed and administered with food or fluids for patients with difficulty swallowing.
- **Orally 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, with or without water. Do not cut, split, or break. Use calibrated measuring device to ensure accurate dose of liquid 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.
- Prelone syrup should not be refrigerated, Pediapred solution may be refrigerated, Orapred solution should be refrigerated.
- Caution patient to avoid vaccinations without first consulting health care professional.
- Review side effects with patient. **Instruct patient to inform health care professional promptly if severe abdominal pain or tarry stools occur** Patient should also report unusual swelling, weight gain, tiredness, bone pain, bruising, nonhealing sores, visual disturbances, or behavior changes.
- Advise patient to notify health care professional of medication regimen prior to treatment or surgery.
- Discuss possible effects on body image. Explore coping mechanisms.
- Instruct patient to inform health care professional if symptoms of underlying disease return or worsen.

CONTINUED

CONTINUED

prednisoLONE

- 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?