pyrimethamine (peer-i-meth-a-meen)

Uses

Indications

Therapeutic: antimalarials, antiprotozoals

Pregnancy Category C

Indications

Used in combination with other antimalarials in the treatment of chloroquine-resistant malaria. Used in combination with other agents (sulfa drugs, clindamycin) in the treatment of Pneumocystis pneumonia.

Action

Act as an enzyme in the protozoa, which results in depletion of folic acid. Therapeutic Effects: Death and arrested growth of susceptible organisms (protozoa).

Pharmacokinetics

Absorption: Well absorbed after oral administration.

Distribution: Widely distributed with high concentrations achieved in blood cells, liver, bone, and spleen. Some enters CSF (13–26% of serum levels).

Metabolism and Excretion: Mostly metabolized by the liver. 20–30% excreted unchanged by the kidneys.

Half-life: 4 days (in patients with AIDS).

TIME/ACTION PROFILE (blood levels)

<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>3 hr</td>
<td>2 wk†</td>
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</table>

†Suppressive levels

Contraindications/Precautions

Contraindications: Hypersensitivity; OB: First 14–16 wk of pregnancy; Megaloblastic anemia caused by folate deficiency; Concurrent folate antagonist therapy (because of risk of megaloblastic anemia). Tablets contain lactose and potato starch and should be avoided in patients with known hypersensitivity/intolerance.

Use Cautiously in: History of seizures (high doses); Underlying anemia or bone marrow depression; Hepatic impairment; G6PD deficiency; OB: Pregnancy >10 wk (may require concurrent folic acid therapy); Lactation: Large doses in mother may cause folate and acid deficiency in infant.

Adverse Reactions/Side Effects


Interactions

Drug-Drug: q risk of bone marrow depression with other bone marrow depressants, including antineoplastics, procarbazine, radiation therapy; q risk of megaloblastic anemia with folate antagonists (methotrexate), concurrent use should be avoided.

Route/Dosage

Treatment of Malaria

PO (Adults and Children ≥10 yr): 50 mg/day for 2 days, then 25 mg once weekly in combination with other agents.

PO (Children 4–10 yr): 13 mg/kg/day for 2 days, then 6.5 mg once weekly in combination with other agents.

Toxoplasmosis

PO (Adults): 50–200 mg/day for 1–2 days, followed by 25–100 mg/day for 1–6 wk, given with a sulfonamide.

PO (Children): 1 mg/kg/day for 1–3 days, then 0.5 mg/kg/day for 4–6 wk, given with a sulfonamide.

Toxoplasmosis in AIDS Patients

PO (Adults): 100–200 mg/day for 1–2 days, followed by 50–100 mg/day for 1–6 wk, then 25–50 mg/day for life, given with clindamycin or sulfadiazine.

NURSING IMPLICATIONS

Assessment

- Monitor for improvement in signs and symptoms of infection daily during therapy.

- Monitor for signs of seizures (high doses) or underling anemia or bone marrow depression (folic acid deficiency, G6PD deficiency, OB: Pregnancy >10 wk).

- Monitor CBCs weekly in patients with low platelet counts.

- Assess for signs of infection, seizures, bone marrow depression, anemia, mental depression.

- Monitor fecal and blood cultures for possible neoplasms.

- CLINICAL ALERT: Large doses in mother may cause folate and acid deficiency in infant.

- Monitor for fever during therapy.

- Monitor for signs of pancreatitis, pregnancy.

- Monitor for signs of bone marrow depression, anemia, mental depression.

- Monitor for signs of clindamycin or sulfadiazine toxicity.

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Lab Test Considerations: Monitor CBC and platelet count periodically during therapy; semiweekly in patients with toxoplasmosis. May cause WBC and platelet counts.

Potential Nursing Diagnoses

Implementation

- Leucovorin may be administered concurrently to prevent folic acid deficiency and restore normal hematopoiesis.
- PO: Administer with milk or meals to minimize GI distress.
- Tablets may be crushed and mixed with saline or other vehicles by pharmacist for patients with difficulty swallowing.

Patient/Family Teaching

- Instruct patient to take medication as directed on a regular schedule and continue full course of therapy, even if feeling better. Take missed doses as soon as remembered: if almost time for next dose, do not double dose.
- Advise patient to notify health care provider promptly if sore throat, pallor, purpura, or glossitis occurs. Instruct patient to stop taking pyrimethamine and use health care professional immediately if any signs of skin rash or if no improvement seen within 2 days.
- Emphasize the importance of lab tests at scheduled intervals, especially to patients taking high doses. Tests should not be delayed or missed.

Evaluation/Desired Outcomes

- Improvement in signs and symptoms of malaria.
- Improvement in signs and symptoms of toxoplasmosis.

Why was this drug prescribed for your patient?