trimethoprim (trye-meth-oh-prim)

**Primaquine Classification**
- Therapeutic: anti-infectives
- Pharmacologic: folate antagonists

**Pregnancy Category C**

**Indications**

**Action**
Interferes with bacterial folic acid synthesis. **Therapeutic Effects:** Bactericidal action against susceptible organisms. **Spectrum:** Some gram-positive pathogens, including *Streptococcus pneumoniae*, Group A beta-hemolytic streptococci, some staphylococci and enterococci. Gram-negative spectrum includes the following enterobacteriaceae: *Acinetobacter*, *Citrobacter*, *Enterobacter*, *Proteus vulgaris*, *P. mirabilis*, *Escherichia coli*, *Hemophilus influenzae*, *Klebsiella pneumoniae*, *Proteus mirabilis*, *Salmonella*. Other strains of *Proteus*, *some Providencia*, some *Serratia*, and *P. jirovecii* are also susceptible.

**Pharmacokinetics**
- **Absorption:** Well absorbed following oral administration.
- **Distribution:** Widely distributed. Crosses the placenta and is distributed into breast milk in high concentrations.
- **Metabolism and Excretion:** 80% excreted unchanged in the urine; 20% metabolized by the liver.
- **Half-life:** 8–11 hr (q in renal impairment).

**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>rapid</td>
<td>1–4 hr</td>
<td>12–24 hr</td>
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</table>

**Contraindications/Precautions**
- **Contraindicated in:** Hypersensitivity; Megaloblastic anemia secondary to folate deficiency.
- **Use Cautiously in:** Renal impairment (dose q if CrCl <30 mL/min); Debilitated patients; Severe hepatic impairment; Folate deficiency; GI: Lactation; Pedi: Pregnancy, lactation, or children <12 yr (safety as a single agent not established).

**Adverse Reactions/Side Effects**
- **GI:** altered taste, epigastric discomfort, glossitis, nausea, vomiting, drug-induced hepatitis.
- **Derm:** pruritus, rash.
- **Hemat:** megaloblastic anemia, neutropenia, thrombocytopenia.

**Interactions**
- **Drug-Drug:** Increased risk of folate deficiency when used with phenytoin or methotrexate.
- **Risk of bone marrow depression when used with antineoplastics or radiation therapy:** Rifampin may affect effectiveness by **enhancement.**

**Route/Dosage**

<table>
<thead>
<tr>
<th>Indication</th>
<th>Route</th>
<th>Dosage Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment of Urinary Tract Infections</td>
<td>PO (Adults and Children &gt;12 yr):</td>
<td>100 mg q 12 hr or 200 mg as a single daily dose.</td>
</tr>
<tr>
<td>Treatment of Otitis Media</td>
<td>PO (Children &lt;6 mo):</td>
<td>5 mg/kg q 12 hr.</td>
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<tr>
<td>Prophylaxis of Chronic Urinary Tract Infections</td>
<td>PO (Adults):</td>
<td>100 mg/day as a single dose (unlabeled).</td>
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<tr>
<td>Pneumocystis jirovecii Pneumonia</td>
<td>PO (Adults):</td>
<td>20 mg/kg/day with 100 mg dapsone daily for 21 days (unlabeled).</td>
</tr>
</tbody>
</table>

**NURSING IMPLICATIONS**
- **Assessment:** Fever, cloudy urine, frequency, urgency, pain and burning on urination, or other signs of infection at beginning of and throughout therapy.
● Obtain specimens for culture and sensitivity prior to initiating therapy. First dose may be given before receiving results.
● Monitor intake and output ratios. Fluid intake should be sufficient to maintain urine output of at least 1200–1500 mL daily.
● Lab Test Considerations: May produce elevated serum bilirubin, creatinine, BUN, ALT, and AST.
● Monitor CBC and urinalysis periodically throughout therapy. Therapy should be discontinued if blood dyscrasias occur.

Potential Nursing Diagnoses
Risk for infection (Indications) (Side Effects)

Implementation
● PO: Administer on an empty stomach, at least 1 hr before or 2 hr after meals, with a full glass of water. May be administered with food if GI irritation occurs.

Patient/Family Teaching
● Instruct patient to take medication and to finish medication completely as directed, even if feeling better. Take missed doses spaced evenly apart. Advise patient that sharing of this medication may be dangerous.
● Advise patient to notify health care professional if skin rash, sore throat, fever, mouth sores, or unusual bleeding or bruising occurs. Folic acid deficiency (Vitamin B12) may be administered if folic acid deficiency occurs.
● Instruct patient to notify health care professional if symptoms do not improve.
● Emphasize the importance of routine follow-up exams to evaluate progress.

Evaluation/Desired Outcomes
● Resolution of the signs and symptoms of infection. Therapy is usually required for 10–14 days for resolution of urinary tract infection.
● Decreased incidence of urinary tract infections during prophylactic therapy.

Why was this drug prescribed for your patient?