1 probenecid (proe-ben-e-sid)

Classification
Therapeutic: uricosurics, uricosurics
Pregnancy Category B

Indications
Prevention of recurrences of gouty arthritis. Treatment of hyperuricemia secondary to thiazide therapy. Used to increase and prolong serum levels of penicillin and related anti-infectives.

Action
Inhibits renal tubular reabsorption of uric acid, thus promoting its renal excretion.

Therapeutic Effects:
Reduction of serum uric acid levels.

Pharmacokinetics
Absorption:
Well absorbed following oral administration.

Distribution:
Crosses the placenta.

Protein Binding:
75–95%.

Metabolism and Excretion:
Mostly metabolized by the liver; 10% excreted unchanged in the urine.

Half-life:
4–17 hr.

TIME/ACTION PROFILE (effects on serum uric acid levels)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>30 min</td>
<td>2–4 hr</td>
<td>8 hr</td>
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Contraindications/Precautions
Contraindicated in: Hypersensitivity; Chronic high-dose salicylate therapy; Pedi: <2 yr.

Use Cautiously in: Peptic ulcer; Blood dyscrasias; Uric acid kidney stones; Renal impairment (dosage reduction recommended; may not be effective if CCr ≤30 mL/min); OB: Has been used safely during pregnancy.

NURSING IMPLICATIONS

Assessment
• Gout: Monitor involved joints for pain, mobility, and edema throughout course of therapy.

• Monitor intake and output ratios. Fluids should be encouraged to prevent urate stone formation (2000–3000 mL/day). Alkalization of the urine with sodium bicarbonate, potassium citrate, or acetazolamide may also be used for this purpose.

• Lab Test Considerations: CBC, serum uric acid levels, and renal function should be monitored routinely during long-term therapy.

Serum and urine uric acid determinations may be measured periodically when probenecid is used to treat hyperuricemia.

Potential Nursing Diagnoses
Acute pain (Indications)
Impaired physical mobility (Indications)
Deficient knowledge, related to medication regimen (Patient/Family Teaching)

Side Effects

Interactions
Drug-Drug: Large doses of acetylsalicylic acid, salicylates, barbiturates, cephalosporins, dapsone, methotrexate, NSAIDs, penicillamine, penicillins, sulfonamides, sulfinpyrazone, or zidovudine. Large doses of salicylates may decrease uricosuric activity.

Route/Dosage
PO (Adults and Children ≥90 kg): Hyperuricemia—250 mg twice daily for 1 wk; 750 mg twice daily, then may be increased every wk (not to exceed 3 g/day). Augmentation of penicillins/cephalosporins—250 mg 4 times daily. Single-dose therapy of gonorrhea—1 g with amoxicillin or penicillin.

PO (Children 2–11 yr and ≤60 kg): 25 mg/kg (700 mg/m2) initially, then 10 mg/kg (300 mg/m2) every 4 hr.

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Potential Nursing Diagnoses
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Implementation

- Probenecid therapy is not used to treat gouty arthritis but, rather, to prevent it. If acute attacks occur during therapy, probenecid is usually continued at full dose along with colchicine or NSAIDs.
- PO: Administration with food or antacid to minimize gastric irritation.
- Gradual dosage reduction should be attempted if uric acid levels remain stable following 6 mo of therapy.

Patient/Family Teaching

- Instruct patient to take medication exactly as directed, not to discontinue without consulting health care professional. Irregular dosage schedules may cause elevation of uric acid levels and precipitate an acute gout attack.
- Explain purpose of the medication to patients taking probenecid with penicillin.
- Advise patient to follow recommendations of health care professional regarding weight loss, diet, and alcohol consumption.
- Caution patient not to take aspirin or other salicylates, because they decrease the effects of probenecid.
- Instruct patient to report nausea, vomiting, loss of appetite, abdominal pain, unusual bleeding or bruising, sore throat, fatigue, malaise, or yellowing of the skin or eyes promptly.

Evaluation/Desired Outcomes

- Decrease in pain and swelling in affected joints and subsequent decrease in frequency of gout attacks. May require several months of continuous therapy for maximum effects.
- Decrease in serum uric acid levels.
- Prolonged serum levels of penicillins and other related antibiotics.

Why was this drug prescribed for your patient?