promethazine (pro-meth-a-zeen)

*High Alert*

**Classification**
Therapeutic: antihistamines, sedatives/hypnotics
Pharmacologic: phenothiazines

**Pregnancy Category C**

**Indications**
Treatment of various allergic conditions and motion sickness. Preoperative sedation. Treatment and prevention of nausea and vomiting. Adjunct to anesthesia and analgesics. Discontinued.

**Action**
Blocks the effects of histamine. Has inhibitory effect on the chemoreceptor trigger zone in the medulla, resulting in antiemetic properties. Alters the effects of dopamine in the CNS. Possesses significant anticholinergic activity. Produces CNS depression by indirectly decreased stimulation of the CNS reticular system. Therapeutic Effects: Relief of symptoms of histamine excess usually seen in allergic conditions. Diminished nausea or vomiting. Sedation.

**Pharmacokinetics**
Absorption: Well absorbed after oral (88%) and IM administration; rectal administration may be less reliable.
Distribution: Widely distributed; crosses the blood-brain barrier and the placenta.
Protein Binding: 65–90%.
Metabolism and Excretion: Metabolized by the liver.
Half-life: 9–16 hr.

**TIME/ACTION PROFILE (noted as antihistaminic effects; sedative effects last 2–8 hr)**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO, IM</td>
<td>20 min</td>
<td>unknown</td>
<td>4–12 hr</td>
</tr>
<tr>
<td>Rect</td>
<td>20 min</td>
<td>unknown</td>
<td>4–12 hr</td>
</tr>
<tr>
<td>IV</td>
<td>3–5 min</td>
<td>unknown</td>
<td>4–12 hr</td>
</tr>
</tbody>
</table>

**Contraindications/Precautions**
Contraindicated in: Hypersensitivity; Comatose patients; Prostatic hypertrophy; Bladder neck obstruction; Some products contain alcohol or bisulfites and should be avoided in patients with known intolerance; Angle-closure glaucoma. Use cautiously in: IV administration may cause severe injury to tissue; Hypertension; Cardiovascular disease; Impaired liver function; Prostatic hypertrophy; Glaucoma; Asthma; Sleep apnea; Epilepsy; Underlying bone marrow depression. Use with caution in: Children >2 yr, use lowest effective dose; avoid concurrent respiratory depressants. OR: Has been used safely during labor; avoid chronic use during pregnancy; Safety not established; may cause drowsiness in infants; appears on nurse’s list. Sensitivity to anticholinergic effects and use with care.

**Adverse Reactions/Side Effects**

**Drug Interactions**
Drug-Drug: Additive CNS depression with other CNS depressants, including alcohol, opioids, sedative/hypnotics, and other antihistamines. Additive anticholinergic effects with other drugs possessing anticholinergic properties, including other antihistamines, antidepressants, atropine, haloperidol, other phenothiazines, quinidine, and disopyramide. May precipitate seizures when used with drugs that lower seizure threshold. Concurrent use with MAO inhibitors may result in ∆51 sedation and anticholinergic side effects.

**Route/Dosage**

**Antihistamine**
PO (Adults): 6.25–12.5 mg 3 times/day and 25 mg at bedtime.
PO (Children ≥2 yr): 0.1 mg/kg/dose (not to exceed 12.5 mg) q 6 hr during the day and 0.5 mg/dose (not to exceed 25 mg) at bedtime.
IM, IV, Rect (Adults): 25 mg, may repeat in 2 hr.
Rect (Children ≥2 yr): 0.125 mg/kg q 6 hr or 0.5 mg/kg at bedtime.

**Geriatric**
May cause drowsiness in infants; appears on nurse’s list. Sensitivity to anticholinergic effects and use with care.
Antiemetic
PO, Rect, IM, IV (Adults): 12.5–25 mg q 4–6 hr as needed; initial PO dose should be 25 mg.

NURSING IMPLICATIONS
Assessment
● Monitor BP, pulse, and respiratory rate frequently in patients receiving IV doses.

Potential Nursing Diagnoses
Deficient Fluid Volume (Indications)
Risk for Injury (Side Effects)

Implementation
● When administering promethazine concurrently with opioid analgesics, supervise ambulation closely to prevent injury from increased sedation.

Lab Test Considerations
May cause false-positive or false-negative pregnancy test results.

Evaluation
Evaluate CBC periodically during chronic therapy; blood dyscrasias may occur.

Antiemetic
Assess patient for nausea and vomiting before and after administration.

Geri:
Assess for adverse anticholinergic effects (delirium, acute confusion, dizziness, dry mouth, blurred vision, urinary retention, constipation, tachycardia).

Allergy:
Assess allergy symptoms (rash, urticaria, hives) before and periodically throughout course of therapy.

Antiemetic:
Assess patient for nausea and vomiting before and after administration.

IV: High Alert: If administered IV, assess for burning and pain at IV site; may cause severe tissue injury. Avoid IV administration, if possible. If pain occurs, discontinue administration immediately.

Lab Test Considerations:
May cause false-positive or false-negative pregnancy test results.

Evaluate CBC periodically during chronic therapy; blood dyscrasias may occur.

May cause false-negative results in skin tests using allergen extracts. Promethazine should be discontinued 72 hr before the test.

Potential Nursing Diagnoses
Deficient Fluid Volume (Indications)
Risk for Injury (Side Effects)

Implementation
● When administering promethazine concurrently with opioid analgesics, supervise ambulation closely to prevent injury from increased sedation.

PO:
Administer with food, water, or milk to minimize GI irritation. Tablets may be crushed and mixed with food or fluids for patients with difficulty swallowing.

IM:
Administer deep into well-developed muscle. Subcut or inadvertent intra-arterial administration may cause severe tissue necrosis.

IV Administration
Direct IV:
Diluent:
Dilute with 0.9% NaCl or D5W.
Concentration:
Doses should not exceed a concentration of 25 mg/mL. Administer through a large-bore vein through a running IV line into the most distal port. Slight yellow color does not alter potency. Do not use if precipitate is present.
Rate:
Administer each 25 mg slowly, over at least 10–15 min (maximum rate = 25 mg/min). Rapid administration may produce a transient fall in BP.

Y-Site Compatibility:
alemtuzumab, alfentanil, amifostine, amikacin, amsacrine, anidulafungin, ascorbic acid, atropine, benztropine, bivalirudin, buprenorphine, butorphanol, calcium chloride, calcium gluconate, carbo-

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promethazine

- Caution patients to avoid concurrent use of alcohol and other CNS depressants with this medication.
- Instruct patient to notify health care professional if sore throat, fever, jaundice, or uncontrolled movements are noted.

Motion Sickness: When used as prophylaxis for motion sickness, advise patient to take medication at least 30 min and preferably 1–2 hr before exposure to conditions that may cause motion sickness.

Evaluation/Desired Outcomes

- Relief from allergic symptoms.
- Prevention of motion sickness.
- Sedation.
- Relief from nausea and vomiting.

Why was this drug prescribed for your patient?

Patient/Family Teaching

- Review dose schedule with patient. If medication is ordered regularly and a dose is missed, take as soon as remembered unless time for next dose.
- Caution caregivers to use only the measuring device accompanying the liquid medication and not to use household measuring devices.
- May cause drowsiness. Caution patient to avoid driving or other activities requiring alertness until response to medication is known.
- Advise patient that frequent mouth rinses, good oral hygiene, and sugarless gum or candy may decrease dry mouth. Health care professional should be notified if dry mouth persists ≥2 wk.
- Caution patient to change positions slowly to minimize orthostatic hypotension. Geriatric patients are at increased risk.
- Caution patient to avoid concurrent use of alcohol and other CNS depressants with this medication.
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