bethanechol (be-than-e-kole)
Duvoid, Urabeth, Urecholine

Classification
Therapeutic: urinary tract stimulants
Pharmacologic: cholinergics

Pregnancy Category C

Indications
Postpartum and postoperative nonobstructive urinary retention or urinary retention caused by neurogenic bladder.

Action
Stimulates cholinergic receptors. Effects include: Contraction of the urinary bladder, Decreased bladder capacity, Increased frequency of ureteral peristaltic waves, Increased pressure in the lower esophageal sphincter, Increased gastric secretions.

Therapeutic Effects:
Bladder emptying.

Pharmacokinetics
Absorption: Poorly absorbed after oral administration, requiring larger doses by mouth than subcutaneously.
Distribution: Does not cross the blood-brain barrier.
Metabolism and Excretion: Unknown.
Half-life: Unknown.

TIME/ACTION PROFILE (response on bladder muscle)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>30–90 min</td>
<td>1 hr</td>
<td>6 hr</td>
</tr>
<tr>
<td>Subcut</td>
<td>5–15 min</td>
<td>15–30 min</td>
<td>2 hr</td>
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</tbody>
</table>

Contraindications/Precautions
Contraindicated in: Hypersensitivity; Mechanical obstruction of the GI or GU tract.

Use Cautiously in: History of asthma; Ulcer disease; Cardiovascular disease; Epilepsy; Hyperthyroidism; Sensitivity to cholinergic agents or effects; OB, Lactation, Pedi: Safety not established.

Adverse Reactions/Side Effects

Interactions
Drug-Drug: Quinidine and procainamide may antagonize cholinergic effects. Additive cholinergic effects with cholinesterase inhibitors. Use with ganglionic blocking agents may result in severe hypotension. Do not use with depolarizing neuromuscular blocking agents. Effectiveness will be decreased by anticholinergics.

Drug-Natural Products: Cholinergic effects may be antagonized by angel’s trumpet, jimson weed, or scopolia.

Route/Dosage
PO (Adults): 25–50 mg 3 times daily. Dose may be determined by administering 5–10 mg 1–2 hr until response is obtained or total of 50 mg administered or by starting with 10 mg, giving 15 mg/hr later, then, 10 mg/hr later. PO (Children): 0.15 mg/kg 3 times daily or 0.11 mg/kg/15 min.
Subcut (Adults): 5 mg 3–4 times daily. Dose may be determined by administering 2.5 mg q15–30 min until response is obtained or total of 6 doses administered. Subcut (Children): 0.06 mg/kg 3 times daily or 0.05 mg/kg/15 min daily.

NURSING IMPLICATIONS
Assessment
• Monitor BP, pulse, and respirations before administering and at least 1 hr after subcut administration.
• Monitor intake and output ratios.Palpate abdomen for bladder distention. Notify physician or other health care professional if drug fails to relieve condition for which it was prescribed. Calibratior may be ordered to assess postvoid residual.
• Lab Test Considerations: May cause an increase in serum AST, amylase, and lipase concentrations.

NURSING CONSIDERATIONS: Observe patient for drug intolerance (rash, flushing, abdominal cramps, nausea, salivation). If overdose occurs, treatment includes atropine sulfate (specific antidote).
Potential Nursing Diagnoses
Impaired urinary elimination (Indications)

Implementation
- A test dose is usually employed before maintenance to determine minimum effective dose.
- Oral and subcut doses are not interchangeable.
- PO: Administer medication on an empty stomach, 1 hr before or 2 hr after meals, to prevent nausea and vomiting.
- Subcut: Parenteral solution is intended only for subcut administration. Do not give IM or IV. Inadvertent IM or IV administration may cause cholinergic overstimulation (circulatory collapse, drop in BP, abdominal cramps, bloody diarrhea, shock, and cardiac arrest).
- Do not use if solution is discolored or contains a precipitate.

Patient/Family Teaching
- Instruct patient to take medication as directed. Missed doses should be taken as soon as possible within 2 hr, otherwise, return to regular dosing schedule. Do not double doses.
- Caution patient to change positions slowly to minimize orthostatic hypotension.
- Advise patient to report abdominal discomfort, salivation, sweating, or flushing to health care professional.

Evaluation/Desired Outcomes
- Increase in bladder function and tone.

Why was this drug prescribed for your patient?