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 tone and peristalsis in the GI tract, 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)

ROUTE	ONSET	PEAK	DURATION
PO	30–90 min	1 hr	6 hr
Subcut	5–15 min	15–30 min	2 hr

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

CNS: headache, malaise. **EENT:** lacrimation, miosis. **Resp:** bronchospasm. **CV:** HEART BLOCK, SYNCOPE/CARDIAC ARREST, bradycardia, hypotension. **GI:** abdominal discomfort, diarrhea, nausea, salivation, vomiting. **GU:** urgency. **Misc:** flushing, sweating, hypothermia.

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 q 1–2 hr until response is obtained or total of 50 mg administered *or* by starting with 10 mg, giving 25 mg 6 hr later, then, if needed, 50 mg 6 hr later.
PO (Children): 0.2 mg/kg 3 times daily or 0.15 mg/kg 4 times daily.
Subcut (Adults): 5 mg 3–4 times daily. Dose may be determined by administering 2.5 mg q 15–30 min until response is obtained or total of 4 doses administered.
Subcut (Children): 0.06 mg/kg 3 times daily or 0.05 mg/kg 4 times daily.

NURSING IMPLICATIONS

Assessment

- Monitor BP, pulse, and respirations before administering and for 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. Catheterization may be ordered to assess postvoid residual.
- ***Lab Test Considerations:*** May cause an increase in serum AST, amylase, and lipase concentrations.
- ***Toxicity and Overdose:*** Observe patient for drug toxicity (sweating, flushing, abdominal cramps, nausea, salivation). If overdosage 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 exactly 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?