Hyoscyamine (hi-oh-si-a-meen)

**Anatomic/Synonym:** Levsin, Levbid, Anaspaz, Symax

**Classification:**
- Antispasmodics
- Anticholinergics

**Pregnancy Category:** C

**Indications:**
- Control of gastric secretion, visceral spasm, hypermotility in spastic colitis, spastic bladder, pylorospasm, and related abdominal cramps.
- Decreases symptoms of various functional intestinal disorders including milk dyspepsia, diverticulosis, infant colic, irritable bowel syndrome, irritable bladder, pseudo-obstruction, and irritable bowel syndrome.
- May also be used to manage anticholinesterase poisoning.

**Contraindications/Precautions:**
- Hypersensitivity.
- Angle-closure glaucoma.
- Tachycardia or unstable cardiovascular status.
- GI obstructive disease, paralytic ileus, intestinal atony, severe obstructive colitis, obstructive jaundice, paralytic ileus, ileus, intestinal hypoactivity.
- Lactation:
- Lactation.
- Pediatric:
- Products containing benzyl alcohol should not be used in newborn or immature infants.
- Some products contain alcohol, tartrazine, or sulfites and should be avoided in patients with known intolerance.

**Action:**
- Inhibits the muscarinic effect of acetylcholine in smooth muscle, secretory glands and the CNS. Small doses decrease salivary and bronchial secretions and decrease sweating; intermediate doses dilate the pupil, inhibit accommodation, increase heart rate (vagolytic action); large doses decrease GI and GU motility, further increase in dose decreases gastric acid secretion.

**Therapeutic Effects:**
- Decreased secretions with decreased GI and GU symptomatology.
- Increased heart rate.

**Pharmacokinetics:**
- **Absorption:** Well absorbed; food does not affect absorption.
- **Distribution:** Crosses the placenta and blood-brain barrier.
- **Metabolism and Excretion:** Excreted mostly unchanged by the kidneys.

**Contraindicated in:**
- History of cardiovascular disease including HF, arrhythmias, hypertension, tachycardia, or coronary artery disease.
- Renal or hepatic impairment.
- Prostatic hyperplasia.
- Early ileus or reflux esophagitis.
- Autonomic neuropathy.
- Hyperthyroidism.

**Adverse Reactions/Side Effects:**
- **CNS:** Confusion/excitement (especially in geriatric patients), headache, dizziness, tachycardia.
- **EENT:** Blurred vision, cycloplegia, intraocular pressure, photophobia.
- **CV:** Palpitations, flushing.
- **GI:** Dry mouth, altered taste perception, bloated feeling, constipation, nausea, vomiting.
- **GU:** Urinary hesitancy, incontinence.

**Interactions:**
- **Drug-Drug:** Concurrent administration with amantadine can result in anticholinergic side effects (may require dose reduction).
- Concurrent use with phenothiazines may result in anticholinergic side effects (dose reduction may be necessary). Concurrent use with tricyclic antidepressants.

**Dosage and Administration:**

<table>
<thead>
<tr>
<th>Route</th>
<th>Onset</th>
<th>Peak</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM, IV, Subcut</td>
<td>2–3 min</td>
<td>unknown</td>
<td>4–6 hr</td>
</tr>
</tbody>
</table>

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**Half-Life:** 5.5 hr.
Route/Dosage

PO, SL (Adults): 0.125–0.25 mg 3–4 times daily or 0.375–0.75 mg as sustained release form every 12 hr.

PO (Children 34–36 kg): 125–187 mcg every 4 hr as needed.

PO (Children 22.7–33 kg): 94–125 mcg every 4 hr as needed.

PO (Children 13.6–22.6 kg): 63 mcg every 4 hr as needed.

PO (Children 9.1–13.5 kg): 31.3 mcg every 4 hr as needed.

PO (Children 6.8–9 kg): 25 mcg every 4 hr as needed.

IM, IV, Subcut (Adults): Gastrointestinal anticholinergic—0.25–0.5 mg 3–4 times daily as needed; preoperative prophylaxis of secretions—0.5 mg or 0.005 mg/kg 30–60 min before anesthesia; antiarrhythmic—0.125 mg IV repeated as needed; cholinergic adjunct (curariform block)—0.2 mg for each 1 mg of neostigmine.

IM, IV, Subcut (Children 2 yr): Preoperative prophylaxis of secretions—0.005 mg/kg 30–60 min before anesthesia.

NURSING IMPLICATIONS

Assessment

● Assess vital signs and ECG tracings frequently during IV drug therapy. Report any significant changes in heart rate or BP, or increased ventricular ectopy or angina promptly.

● Monitor intake and output ratios in elderly or surgical patients because hyoscyamine may cause urinary retention.

● Assess patients routinely for abdominal distention and auscultate for bowel sounds. If constipation becomes a problem, increasing fluids and adding bulk to the diet may help alleviate constipation.

● Tachycardia and tachypnea if overdose occurs; physostigmine is the antidote.

Potential Nursing Diagnoses

Decreased cardiac output (Indications)

Impaired oral mucous membrane (Side Effects)

Constipation (Side Effects)

Implementation

● Do not confuse Levbid (hyoscyamine) with Efasone (etanercept).

● PO: Oral doses are usually given 30 min before meals. Slow-release extended-release and time-release products, do not open, break, crush, or chew.

● Antacids may interfere with absorption. Administer hyoscyamine before meals and antacids after meals.

● IV: Place tablet on tongue and allow the tablet to disintegrate before swallowing; may take with or without water. May be taken really or chewed.

IV Administration

● Dextrose: No Data.

● Direct IV: Dilution: May give IV undiluted or dilute in 10 mL of sterile water.

Note: No coadministration available, administer i.v.

Patient/Family Teaching

Instruct patient to take exactly as directed. Take missed doses as soon as remembered unless almost time for next dose. Do not double doses.

May cause drowsiness. Caution patients to avoid driving or other activities requiring alertness until response to medication is known.

Instruct patient that oral rinses, sugarless gum or candy, and frequent oral hygiene may help relieve dry mouth.

Caution patients that hyoscyamine impairs heat regulation. Strenuous activity in a hot environment may cause heat stroke.

Advise patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and to consult with health care professional before taking other medications.

Inform male patients with benign prostatic hyperplasia that hyoscyamine may cause urinary hesitancy and retention. Changes in urinary stream should be reported to health care professional.

Evaluation/Desired Outcomes

● Increase in heart rate.

● Dryness of mouth.

● Reversal of muscarinic effects.

Why was this drug prescribed for your patient?