lactulose (lak-tyoo-lose)

Cholac, Constilac, Constulose, Enulose, Generlac, Kristalose

Classification
Therapeutic: Laxatives
Pharmacologic: Osmotics

Pregnancy Category B

Indications
Treatment of chronic constipation. Adjunct in the management of portal-systemic (hepatic) encephalopathy (PSE).

Action
Increases water content and softens the stool. Lowers the pH of the colon, which inhibits the diffusion of ammonia from the colon into the blood, thereby reducing blood ammonia levels with improved mental status in PSE.

Pharmacokinetics
Absorption: Less than 3% absorbed after oral administration.
Distribution: Unknown.
Metabolism and Excretion: Absorbed lactulose is excreted unchanged in the urine. Unabsorbed lactulose is metabolized by colonic bacteria to lactic, acetic, and formic acids.
Half-life: Unknown.

TIME/ACTION PROFILE (relief of constipation)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>24–48 hr</td>
<td>Unknown</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

Contraindications/Precautions
Contraindicated in: Patients on low-galactose diets.
Use Cautiously in: Diabetes mellitus; Excessive or prolonged use (may lead to dependence); OB, Lactation: Safety not established.

Adverse Reactions/Side Effects
GI: belching, cramps, distention, flatulence, diarrhea, endotoxemia. (See Warnings.)
Endo: hyperglycemia (diabetic patients).

Potential Nursing Diagnoses
Constipation (Indications)

Implementation
● Assess patient for abdominal distention, presence of bowel sounds, and normal pattern of bowel function.

● Assess mental status (orientation, level of consciousness) before and periodically throughout course of therapy.

● Lab Test Considerations: Blood ammonia concentrations by 25–50%.

● May cause q blood glucose levels in diabetic patients.

Interactions
Drug-Drug: Should not be used with other laxatives in the treatment of hepatic encephalopathy (leads to inability to determine optimal dose of lactulose). Anti-infectives may affect effectiveness in treatment of hepatic encephalopathy.

Route/Dosage
Constipation
PO (Adults): 15–30 mL/day up to 60 mL/day as powder for oral solution (up to 60 g/day has been used).
PO (Children): 1.5 mL/kg after meal or bedtime (unlabeled).

PSE
PO (Adults): 30–45 mL 3–4 times/day may be given q 1–2 hr initially to induce laxation.
PO (Infants): 2.5–10 mL, administer 1–4 divided doses (unlabeled).
PO (Children and Adolescents): 80–90 mL daily in 3–4 divided doses (unlabeled).
Rect (Adults): 300 mL diluted and administered as retention enema q 4–6 hr.

NURSING IMPLICATIONS
Assessment
● Assess patient for abdominal distention, presence of bowel sounds, and normal pattern of bowel function.

● Assess mental status (orientation, level of consciousness) before and periodically throughout course of therapy.

● Lab Test Considerations: Blood ammonia concentrations by 25–50%.

● May cause q blood glucose levels in diabetic patients.

● Monitor serum electrolytes periodically when used chronically. May cause diarrhea with resulting hypokalemia and hypernatremia.

Potential Nursing Diagnoses
Constipation (Indications)

Implementation
● When used in hepatic encephalopathy, admit dose until patient averages 2–3 soft bowel movements per day. During initial therapy, 30–45 mL may be given hourly to induce rapid laxation.
Darkening of solution does not alter potency.

PO: Mix with fruit juice, water, milk, or carbonated citrus beverage to improve flavor. Administer with a full glass (240 mL) of water or juice. May be administered on an empty stomach for more rapid results.

Dissolve single dose packets (Kristalose) in 4 oz of water. Solution should be colorless to slightly pale yellow.

Rect: To administer enema, use rectal balloon catheter. Mix 300 mL of lactulose with 700 mL of water or 0.9% NaCl. Enema should be retained for 30–60 min. If inadvertently evacuated, may repeat administration.

Patient/Family Teaching

- Encourage patients to use other forms of bowel regulation, such as increasing bulk in the diet, increasing fluid intake, and increasing mobility. Normal bowel habits are individualized and may vary from 3 times/day to 3 times/wk.
- Caution patients that this medication may cause belching, flatulence, or abdominal cramping. Health care professional should be notified if this becomes bothersome or if diarrhea occurs.

Evaluation/Desired Outcomes

- Passage of a soft, formed bowel movement, usually within 24–48 hr.
- Clearing of confusion, agitation, and irritability and improved mental status in PSE. Improvement may occur within 2 hr after enema and 24–48 hr after oral administration.

Why was this drug prescribed for your patient?