esomeprazole (es-o-mep-ra-zole)

Classification
Therapeutic: antiulcer agents
Pharmacologic: proton-pump inhibitors

Pregnancy Category B

Indications
PO, IV; ADHD: erosive peptic ulcer (IV therapy should only be used if PO therapy is not possible/appropriate). PO: Hypersecretory conditions, including Zollinger-Ellison syndrome. PO: With amoxicillin and clarithromycin to eradicate Helicobacter pylori in duodenal ulcer disease or history of duodenal ulcer disease. PO: Decrease risk of gastric ulcer during continuous NSAID therapy.

Action
Binds to an enzyme on gastric parietal cells in the presence of acidic gastric pH, preventing the final transport of hydrogen ions into the gastric lumen. Therapeutic Effects: Diminished accumulation of acid in the gastric lumen with lessened gastroesophageal reflux. Healing of duodenal ulcers. Decreased incidence of gastric ulcer during continuous NSAID therapy.

Pharmacokinetics
Absorption: 90% absorbed following oral administration; food pabsorption.
Distribution: Unknown.
Protein Binding: 97%.
Metabolism and Excretion: Extensively metabolized by the liver (cytochrome P450 [CYP450] system, primarily CYP2C19 isoenzyme, but also the CYP3A4 isoenzyme) (the CYP2C19 enzyme system exhibits genetic polymorphism; 15–20% of Asian patients and 3–5% of Caucasian and Black patients may be poor metabolizers and may have significantly lower esomeprazole concentrations and an increased risk of adverse effects). 1% excreted unchanged in urine.
Half-life: Children 1–11 yrs: 0.42–0.88 hr; Adults: 1.0–1.5 hr.

Contraindications/Precautions
Contraindicated in: Hypersensitivity; Lactation: Not recommended; Concurrent use of atazanavir or nelfinavir.

Adverse Reactions/Side Effects
CNS: headache.
GI: PSEUDOMEMBRANOUS COLITIS, abdominal pain, constipation, diarrhea, flatulence, nausea.
F and E: hypomagnesemia (especially if treatment duration >3 mo).
MS: bone fracture.

Interactions
Drug-Drug: May plevels of atazanavir and nelfinavir (avoid concurrent use with either of these antiretrovirals). May qlevels and risk of toxicity of saquinavir (may need to qdose of saquinavir). May qlevels of drugs requiring acid pH, including ketoconazole, itraconazole, ampicillin, and iron salts. May qlevels of rash, diarrhea, Pseudomembranous colitis, and abscess. May qlevels of concurrent use. May qlevels of diabetics, especially those of elevated from 500 mg once daily to 50 mg.

Route/Dosage
Gastroesophageal Reflux Disease
PO (Adults): Healing of erosive esophagitis—20 mg or 40 mg once daily for 4–8 wk, maintenance of healing of erosive esophagitis—20 mg once daily; symptomaticGERD—20 mg once daily for 4 wk (additional 4 wk may be considered for nonresponders).

TIME/ACTION PROFILE (blood levels*)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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<tbody>
<tr>
<td>PO rapid</td>
<td>1 hr</td>
<td>24 hr</td>
<td>24 hr</td>
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*Resolution of symptoms takes 5–8 days

Notes
- Italics indicate similar but not identical active ingredients.
- CAPI TALS indicate life-threatening, underlines indicate most frequent. Strikethrough = discontinued.
PO (Children 12–17 yr): Short-term treatment of GERD—20–40 mg once daily for up to 8 wk.

PO (Children 1–11 yr): Short-term treatment of GERD—10 mg once daily for up to 8 wk; healing of erosive esophagitis—20 kg: 10 mg once daily for 8 wk; 20 kg: 10–20 mg once daily for 8 wk.

PO (Infants and Children 1 mo–1 yr): Short-term treatment of GERD—5 mg once daily for up to 6 wk; healing of erosive esophagitis—5–7.5 kg—2.5 mg once daily for up to 6 wk; 7.5–12 kg—5 mg once daily for up to 6 wk; 12–17.5 kg—7.5 mg once daily for up to 6 wk; 17.5–20 kg—10 mg once daily for up to 6 wk.

IV (Adults): 20 or 40 mg once daily.

IV (Children 1–17 yr): 55 kg—10 mg once daily; 55 kg—20 mg once daily.

IV (Children 1 mo–1 yr): 0.5 mg/kg once daily.

H. pylori Eradication to Reduce the Risk of Duodenal Ulcer Recurrence (Triple Therapy)

PO (Adults): 40 mg once daily for 10 days with amoxicillin 1000 mg twice daily for 10 days and clarithromycin 500 mg twice daily for 10 days.

Decrease Gastric Ulcer During Continuous NSAID Therapy

PO (Adults): 20 or 40 mg once daily for up to 6 mo.

Pathological Hypersecreatory Conditions Including Zollinger-Ellison Syndrome

PO (Adults): 40 mg twice daily.

Hepatic Impairment

PO, IV (Adults): Severe hepatic impairment—Dose should not exceed 20 mg/day.

Potential Nursing Diagnoses

Acute pain (Indications)

Implementation

Do not confuse Nexium with Nexavar.

Antacids may be used while taking esomeprazole.

PO: Administer at least 1 hr before meals. Capsules should be swallowed whole.

Delayed-release capsules: For patients with difficulty swallowing, place 1 tbsp of applesauce in an empty bowl. Open capsule and carefully empty the pellets inside onto applesauce. Mix pellets with applesauce and swallow immediately. Applesauce should not be hot and should be soft enough to swallow without chewing. Do not store applesauce mixture for future use. Tap water, orange juice, apple juice, and yoghurt have also been used. Do not crush or chew pellets.

For patients with an NG tube, delayed-release capsules can be opened and intact granules emptied into a 60-mL syringe and mixed with 50 mL of water. Replace plunger and shake. Store in refrigerator for 24 hr. Hold syringe with tip up and check for granules in tip. Attach syringe to NG tube and administer solution. Shake syringe vigorously with additional water. Do not administer if granules have dissolved or disintegrated. Administer immediately after reconstitution.

For delayed-release oral suspension: Place contents of packet with 1 tbsp (15 mL) of water in a syringe and leave 2–3 min to thicken. Mix with the syringe, leave 2–3 min in thickness. Shake the syringe and inject through the nasogastric or gastric tube within 30 min.

IV Administration

Direct IV: Reconstitute each vial with 5 mL of 0.9% NaCl, D5W, or DSW. Do not administer solutions that are discolored or contain a precipitate. Stable at room temperature for up to 12 hr. Mix refrigerated at least 30 min.

Intermittent Infusion: Dilute reconstituted solution in a volume of 50 mL with DSW, 0.9% NaCl, or D5W for adults and with 0.9% NaCl for pediatric patients. Concentration: 0.8 mg/mL (40 mg vial) or 0.4 mg/mL (20 mg vial).
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Solutions diluted with 0.9% NaCl or LR are stable for 12 hr and those diluted with D5W are stable for 6 hr at room temperature. Rate: Administer over 10–30 min.

Y-Site Compatibility: cafergot, desipramine.

Y-Site Incompatibility: sacubitril, telavancin. Do not administer with other medication or solutions. Flush line with 0.9% NaCl, LR, or D5W before and after administration.

Patient/Family Teaching

● Instruct patient to take medication as directed for the full course of therapy, even if feeling better. Take missed doses as soon as remembered but not if almost time for next dose. Do not double doses. Advise patient to read the Patient Information sheet prior to starting therapy and with each Rx refill in case of changes.

● Advise patient to avoid alcohol, products containing aspirin or NSAIDs, and foods that may cause an increase in GI irritation.

● Instruct patient to report onset of black, tarry stools; diarrhea; abdominal pain; or persistent headache to health care professional promptly.

● Instruct patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and consult health care professional before taking any new medications, especially St. John’s wort.

● Advise patient to notify health care professional if fever and diarrhea occur, especially if stool contains blood, pus, or mucus. Advise patient not to treat diarrhea without consulting health care professional.

● Caution patient to notify health care professional if pregnancy is planned or suspected or if breast feeding.

Evaluation/Desired Outcomes

● Decrease in abdominal pain or prevention of gastric irritation and bleeding. Healing of duodenal ulcers can be seen on x-ray examination or endoscopy.

● Decrease in symptoms of GERD and erosive esophagitis. Sustained resolution of symptoms usually occurs in 5–8 days. Therapy is continued for 4–8 wk after initial episode.

● Decreased incidence of gastric ulcers during continuous NSAID therapy.

● Eradication of H. Pylori in duodenal ulcer disease.

● Decrease in symptoms of hypersecretory conditions, including Zollinger-Ellison.

Why was this drug prescribed for your patient?