famotidine (fa-moe-tee-deen)

Action
Inhibits the action of histamine at the H2 receptor site located primarily in gastric parietal cells, resulting in inhibition of gastric acid secretion. Therapeutic Effects: Healing and prevention of ulcers. Decreased symptoms of gastroesophageal reflux. Decreased secretion of gastric acid.

Pharmacokinetics
Absorption: 40–45% absorbed following oral administration.
Distribution: Enters breast milk and cerebrospinal fluid.
Protein Binding: 15–20%.
Metabolism and Excretion: Up to 70% excreted unchanged by the kidneys, 30–35% metabolized by the liver.
Half-life: Infants: 4.5–15 hr; Children: 3.3–5.7 hr; Adults: 2.5–3.5 hr.

ROUTE ONSET PEAK DURATION
PO within 60 min 1–4 hr 6–12 hr
IV within 60 min 0.5–3 hr 8–15 hr

Contraindications/Precautions
Contraindicated in: Hypersensitivity; Phenylketonuria (chewable tablets only); Gl: Crosses placenta, no adequate human studies; Lactation: Discontinue breast feeding to avoid exposure of infant to serious side effects.

Use Cautiously in: Renal impairment (more susceptible to adverse CNS reactions; qdosage interval recommended if CCr 10 mL/min); Pedi: Injection contains benzyl alcohol which has been associated with gasping syndrome in neonates; Geri: More susceptible to adverse CNS reactions; dose must be recommended.

Adverse Reactions/Side Effects
CNS: Confusion, dizziness, drowsiness, hallucinations, headache.
CV: ARRHYTHMIAS.
GI: Constipation, diarrhea, nausea.
GU: Pseudosperm count, erectile dysfunction.
Endo: Gynecomastia.
Hemat: Agranulocytosis, aplastic anemia, anemia, neutropenia, thrombocytopenia.
Local: Pain at IM site.
Misc: Hypersensitivity reactions.

Interactions
Drug-Drug: May increase absorption of ketoconazole, itraconazole, atazanavir, debrivirdine, and gefitinib.

Route/Dosage
PO (Adults): Short-term treatment of active ulcers—40 mg/day at bedtime or 20 mg twice daily for up to 8 wk. Duodenal ulcer prophylaxis—20 mg once daily at bedtime. GERD—20 mg twice daily for up to 8 wk for esophagitis with erosions, ulcerations, and continuing symptoms. Gastric hypersecretory conditions—20 mg/day for up to 160 mg q 6 hr. OTC use—10 mg/piece for relief of symptoms for prevention—30 mg 60 min before eating or take 10 mg as chewable tablet 15 minutes before heartburn reducing foods or beverages (not to exceed 20 mg/2 hr or up to 2 wk).
PO, IV (Children 1–12 yr): Duodenal ulcer prophylaxis—0.5 mg/kg/dose twice daily or divided doses twice daily (maximum: 40 mg daily). GERD—1 mg/kg/day as divided doses twice daily (maximum: 80 mg daily).
PO (Infants ≥3 mo—1 yr): GERD—0.3 mg/kg/dose twice daily.

Dosage Forms
Tablets: 10 mg, 20 mg, 40 mg; Chewable tablets: 10 mg.
Injection: 20 mg/mL (chewable tablets).

TIME/ACTION PROFILE
ROUTE ONSET PEAK DURATION
PO within 60 min 1–4 hr 6–12 hr
IV within 60 min 0.5–3 hr 8–15 hr

Based on Clinical/Pharmacologic Effect
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PO (Infants and neonates < 5 mo): GED — 0.5 mg/kg/dose once daily.

IV (Adults): 20 mg q 12 hr.

Renal Impairment

PO (Adults): GFR 50–90 mL/min/1.73 m² administer normal dose q 24 hr or 90% dose at normal dosing interval CS — 20 mL/minute — 20 mg at bedtime; interval may need to be 7 to every 36– 48 hr.

NURSING IMPLICATIONS

Assessment

● Assess for epigastric or abdominal pain and frank or occult blood in the stool, emesis, or gastric aspirate.


● Lab Test Considerations: Monitor CBC with differential periodically during therapy.

● Anticipate effects of gastritis and histamine during gastric acid secretion testing. Avoid administration for 24 hr preceding the test.

● May cause false-negative results in skin tests using allergenic extracts. Histamine antagonists should be discontinued 24 hr prior to the test.

● May cause an increase in serum transaminases and serum creatinine.

● May cause false-positive results for urine protein; test with sulfosalicylic acid.

Potential Nursing Diagnoses

Acute pain (indications)

Implementation

● PO: Administer with meals or immediately afterward, and at bedtime to prolong effect.

● Doses administered once daily should be administered at bedtime to prolong effect.

● Shake oral suspension prior to administration. Discard unused suspension after 30 days.

● Open blister for oral disintegrating tablets with dry hands, place tablet on tongue to disintegrate and swallow with saliva; no water is needed.

IV Administration

● pH: 5.0–6.4.

● Direct IV: Dilute 0.9% NaCl for injection. Concentration: not > 4 mg/mL. Rate: Administer at a rate of 10 mg/min over at least 2 min. Rapid administration may cause hypotension.

● Intramuscular Injection: Dilute: Dilute each 20 mg in 100 mL of 0.9% NaCl.

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**famotidine**

- acetaminophen, sodium acetate, sodium bicarbonate, sodium chloride, sodium lactate, sucralfate, valproic acid, topical benzalconium chloride, trimethoprim/sulfamethoxazole, vecuronium, verapamil, vincristine, vinorelbine, voriconazole, zoledronic acid.

**Y-Site Incompatibility:** amphotericin B colloidal, amphotericin B cholesteryl, ampicillin/ampicillin sodium, azathioprine, azithromycin, cefepime, chloramphenicol, dantrolene, diazepam, diazoxide, ganciclovir, indomethacin, pantoprazole, piperacillin/tazobactam, trimethoprim/sulfamethoxazole.

**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 patients taking OTC preparations not to take the maximum dose continuously for more than 2 wk without consulting health care professional. Notify health care professional if difficulty swallowing occurs or abdominal pain persists.

- Inform patient that smoking interferes with the action of histamine antagonists. Encourage patient to quit smoking or at least not to smoke after last dose of the day.

- May cause drowsiness or dizziness. Caution patient to avoid driving or other activities requiring alertness until response to the drug is known.

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

- Inform patient that increased fluid and fiber intake and exercise may minimize constipation.

- Advise patient to report onset of black, tarry stools; fever; sore throat; diarrhea; dizziness; rash; confusion; or hallucinations to health care professional promptly.

**Evaluation/Desired Outcomes**

- Decrease in abdominal pain, heartburn, acid indigestion, and sour stomach.

- Prevention of gastric irritation and bleeding. Healing of duodenal ulcers can be seen by endoscopy. Therapy is continued for at least 6 wk in treatment of ulcers but not usually longer than 8 wk.

- Decreased symptoms of gastroesophageal reflux.

Why was this drug prescribed for your patient?