magnesium hydroxide/aluminum hydroxide
(mag-nee-zum hye-droks ide/a look-um hye-droks ide)

Actions: Alumag, Diovol Plus, Maalox, Mylanta Ultimate, Rulox

Classification
Therapeutic: antiulcer agents
Pharmacologic: antacids

Pregnancy Category C

Indications
Useful in a variety of GI complaints, including: Hyperacidity, Indigestion, GERD, Heartburn.

Action
Neutralize gastric acid following dissolution in gastric contents. Inactivate pepsin if pH is raised to >4.

Therapeutic Effects:
Neutralization of gastric acid with healing of ulcers and decrease in associated pain.

Pharmacokinetics
Absorption: During routine use, antacids are nonabsorbable. With chronic use, 15–30% of magnesium and smaller amounts of aluminum may be absorbed.

Distribution: Small amounts absorbed are widely distributed, cross the placenta, and appear in breast milk. Aluminum concentrates in the CNS.

Metabolism and Excretion: Excreted by the kidneys.

Half-life: Unknown.

TIME/ACTION PROFILE
ROUTE ONSET PEAK DURATION
Aluminum PO slightly delayed 30 min 30 min-1 hr (empty stomach); 3 hr (after meals)
Magnesium PO slightly delayed 30 min 30 min-1 hr (empty stomach); 3 hr (after meals)

Contraindications/Precautions
Contraindicated in: Severe abdominal pain of unknown cause, especially if accompanied by fever. Renal failure (CrCl 30 mL/min); Products containing tartrazine or sugar in patients with known intolerance.

Use Cautiously in: Antacids containing magnesium in patients with any degree of renal insufficiency; Iodine sensitivity; Dehydration; Upper GI hemorrhage; Children <12 yr (safety not established).

Adverse Reactions/Side Effects
GI: aluminum salts—constipation, aluminum hydroxide—diarrhea. magnesium salts—diarrhea.

F and E: magnesium salts—hypermagnesemia. aluminum salts—hypophosphatemia.

Interactions
Drug-Drug: Absorption of tetracyclines, phenothiazines, ketoconazole, itraconazole, iron salts, fluoroquinolones, and isoniazid may be impaired by separating administration by at least 2 hr.

Route/Dosage
PO (Adults and Children ≥12 yr): 5–30 mL or 1–2 tablets 1–3 hr after meals and at bedtime.

NURSING IMPLICATIONS

Assessment
• Antacid: Assess for heartburn and indigestion as well as location, duration, character, and precipitating factors of gastric pain.

• Lab Test Considerations: Monitor serum phosphates, potassium, and calcium levels periodically during chronic use. May cause q serum calcium and p serum phosphate concentrations.

Potential Nursing Diagnoses
Acute pain (Indications)

Implementation
• Magnesium and aluminum are combined as antacids to balance the constipating effects of aluminum with the laxative effects of magnesium.
• PO: To prevent tablets from entering small intestine in undissolved form, they must be chewed thoroughly before swallowing. Follow with at least 1⁄2 glass of water.
• Shake suspensions well before administration.
• For an antacid effect, administer 1–3 hr after meals and at bedtime.

Patient/Family Teaching
• Caution patient to consult health care professional before taking antacids for more than 2 wk if problem is recurring, if relief is not obtained, or if symptoms of gastric bleeding (black, tarry stools; coffee-ground emesis) occur.
Advise patient not to take this medication within 2 hr of taking other medications.

Pediatrics: Aluminum- or magnesium-containing medicines can cause serious side effects in children, especially when given to children with renal disease or dehydration. Advise parents or caregivers not to administer OTC antacids to children without consulting a health care professional.

**Evaluation/Desired Outcomes**

- Relief of gastric pain and irritation.

**Why was this drug prescribed for your patient?**