



SNS COLLEGE OF ALLIED HEALTH SCIENCE
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT OF OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY - IIYEAR

COURSE NAME: PHARMACOLOGY

TOPIC - ANTACIDS

MRS.GAYATHIRI K
Lecturer



ANTACIDS



Pharmacological Definition

- Antacids are basic substances that neutralize excess gastric acid in the stomach, thereby relieving symptoms such as heartburn, indigestion, and gastritis.

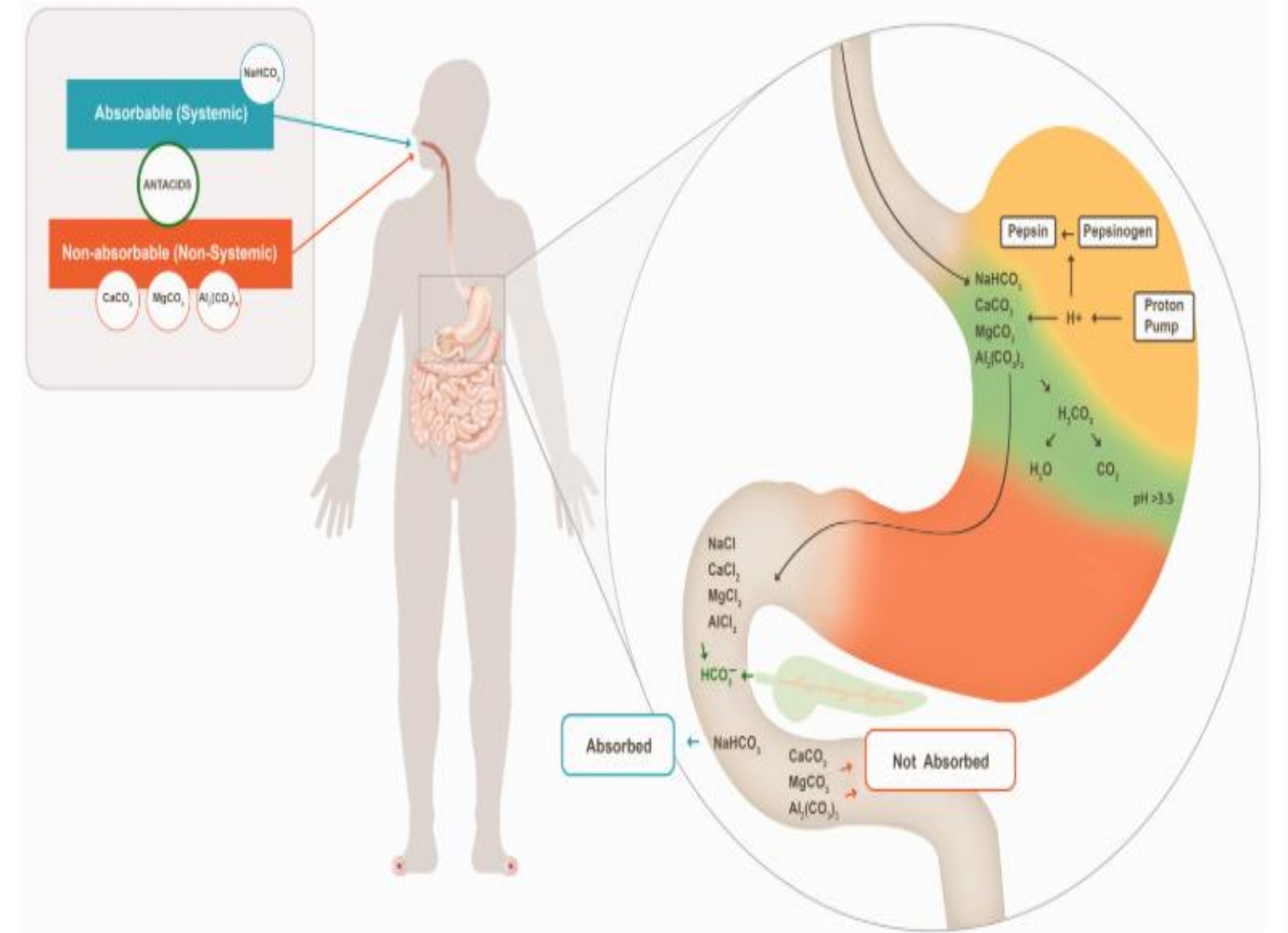
Classification and Class

- **Systemic (Absorbable) Antacids:** Water-soluble, absorbed into the bloodstream.
Example: Sodium citrate.
- **Non-Systemic (Non-Absorbable) Antacids:** Insoluble, act locally in the stomach.
Examples: Aluminum hydroxide, magnesium hydroxide, and combination products like those in Mucaine Gel and Gelusil.

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Mechanism of Action

- **Mechanism:** Antacids are weak bases that react with gastric hydrochloric acid (HCl) to form water and a salt, thereby raising gastric pH and reducing pepsin activity.
- These reactions occur in the gastric lumen, neutralizing acid and increasing pH





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Onset of Action

- **Sodium citrate:** Rapid onset (within minutes).
- **Mucaine Gel & Gelusil:** Onset typically within 10–30 minutes.
- **Duration of Action**
- **Sodium citrate:** Short duration (20–40 minutes).
- **Mucaine Gel & Gelusil:** Intermediate duration (about 2.5–3 hours, especially if taken after meals).

Excretion of Drug

- **Sodium citrate:** Absorbed and metabolized; excess citrate and sodium are excreted renally (urine).
- **Mucaine Gel & Gelusil:** Aluminum and magnesium salts are mostly excreted in feces; small absorbed amounts are excreted via the kidneys.



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Dosage

- **Sodium citrate:** 10-30 mL (0.3 M solution) orally, 15-30 minutes pre-procedure (e.g., anesthesia induction).
- **Mucaine Gel:** 10-20 mL orally, 20-60 minutes before meals or as needed (max 40 mL/day).
- **Gelusil:** 10-20 mL or 1-2 tablets orally, 1 hour after meals and at bedtime (max 40 mL or 4 tablets/day).

Indications

- **Sodium citrate:** Preoperative acid aspiration prophylaxis (e.g., in obstetric or emergency surgery).
- **Mucaine Gel:** Relief of heartburn, gastritis, esophagitis, and hyperacidity; preoperative use in OT.
- **Gelusil:** Treatment of indigestion, heartburn, and gas due to acid reflux; adjunct in peptic ulcer management.

Contraindications

- **Sodium citrate:** Severe renal impairment, alkalosis, congestive heart failure (due to sodium load).
- **Mucaine Gel:** Hypersensitivity, severe renal failure (risk of aluminum/magnesium accumulation).
- **Gelusil:** Hypersensitivity, severe renal disease, hypophosphatemia (chronic use risk).



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Adverse Effects

- **Sodium citrate:**
 - Systemic alkalosis (with excessive use)
 - Sodium overload (risk in heart failure, hypertension)
 - Acid rebound¹⁰
- **Mucaine Gel** (contains oxetacaine and aluminum hydroxide, magnesium hydroxide):
 - Constipation (aluminum)
 - Diarrhea (magnesium)
 - Electrolyte imbalance (with prolonged use)
 - Rare: Hypophosphatemia, especially in renal impairment⁴⁷
- **Gelusil** (contains aluminum hydroxide, magnesium hydroxide, simethicone):
 - Constipation (aluminum)
 - Diarrhea (magnesium)
 - Hypophosphatemia (with chronic use)
 - Hypermagnesemia (in renal impairment)
- Drug interactions (may reduce absorption of other drugs)



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OT Technologist Role

During Drug Intake:

- Prepare anesthesia equipment and monitor patient vital signs.
- Assist in administering IV fluids or medications if antacids are given preoperatively.

After Drug Intake:

- Monitor for postoperative complications (e.g., electrolyte imbalances from antacid use)



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Thank you