

# **SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES**



*Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai*

*Approved by Pharmacy Council of India, New Delhi.*

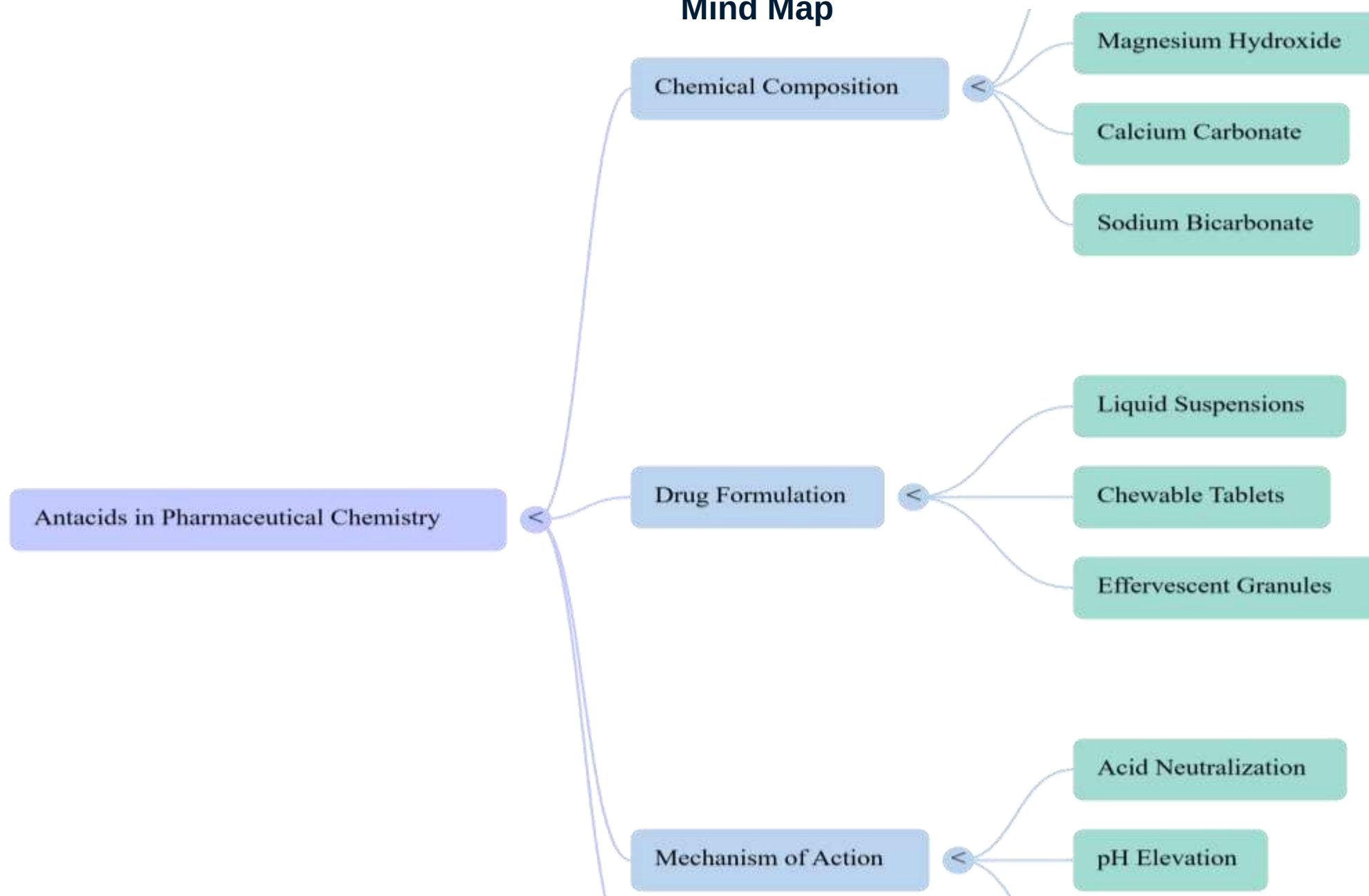
**Coimbatore -641035**

**COURSE NAME: PHARMACEUTICAL CHEMISTRY**

**I YEAR D PHARM**

**TOPIC 17 :( GIT AGENTS ) ANTACIDS**

## Mind Map



# ANTACIDS

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## CHEMISTRY NOTES

# MECHANISM OF ACTION OF ANTACIDS

↑ Gastric pH

Neutralization  
of HCl

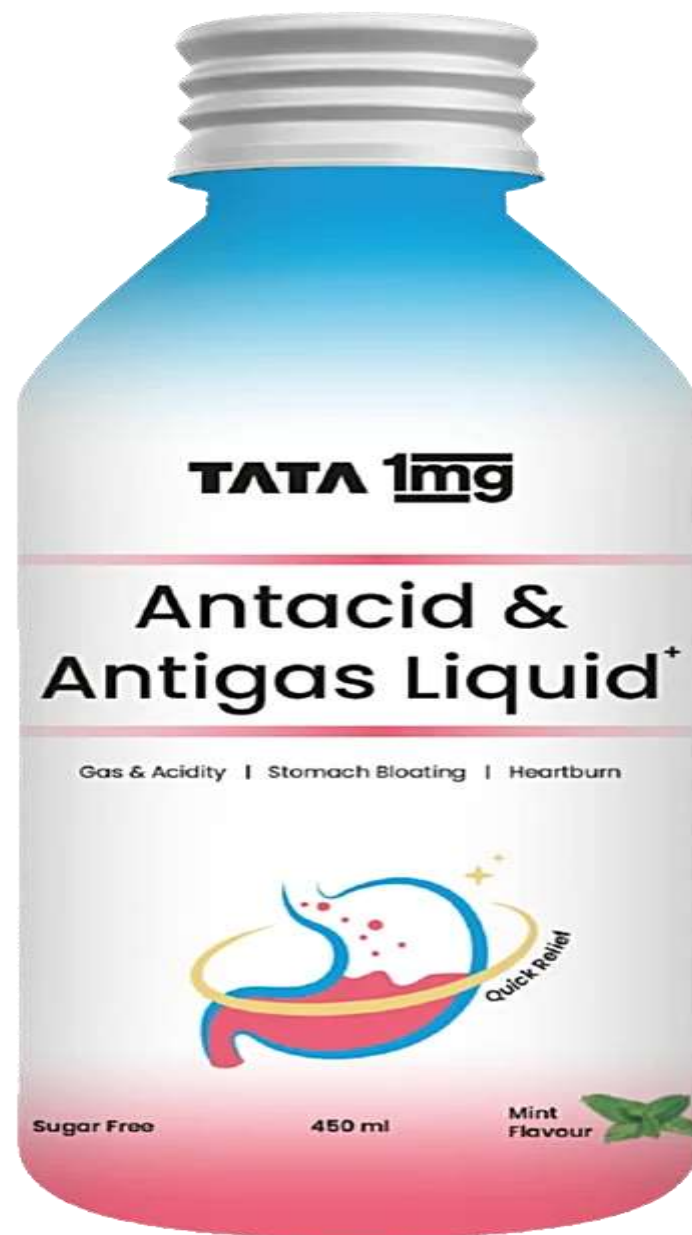
↓ Pepsin Activity

Mucosal Protection  
and Symptom Relief

Mucosal  
Protection  
and Symptom  
Relief







# TOP 10 ANTACIDS: USES, DOSAGE & SIDE EFFECTS (FOR ADULTS 18-80)



## OMEPRAZOLE

Uses: Stomach ulcer, GERD

Dosage Range: 20-40 mg/day



Possible Side Effects: Headache, abdominal pain



## ALUMINUM HYDROXIDE

Uses: Hyperphosphatemia, digestive relief

Dosage Range: 250-500 mg 4 x day



## CALCIUM CARBONATE

Uses: Heartburn, indigestion

Dosage Range: 500-1,000 mg as needed



Possible Side Effects: Constipation, kidney stones



## CIMETIDINE

Uses: GERD, stomach ulcers

Dosage Range: 20-800 mg/ 2 x day



Possible Side Effects: Dizziness, muscle pain (rare)



## ESOMEPRAZOLE

Uses: GERD, stomach ulcers

Dosage Range: 20-40



## RANITIDINE

Uses: GERD, stomach ulcers

Dosage Range: 150-300 mg/day



Possible Side Effects: Constipation (rare)



## CIMETIDINE

Uses: GERD, stomach ulcers

Dosage Range: 200-800 mg/day



Possible Side Effects: Dizziness, muscle pain (rare)



## LANSOPRAZOLE

Uses: Stomach ulcers, GERD

Dosage Range: 15-30 mg/day



Possible Side Effects: Diarrhea



## MAGNESIUM HYDROXIDE

Uses: indigestion acid reflux

Dosage Range: 5-8 ml as needed



Possible Side Effects: Diarrhea



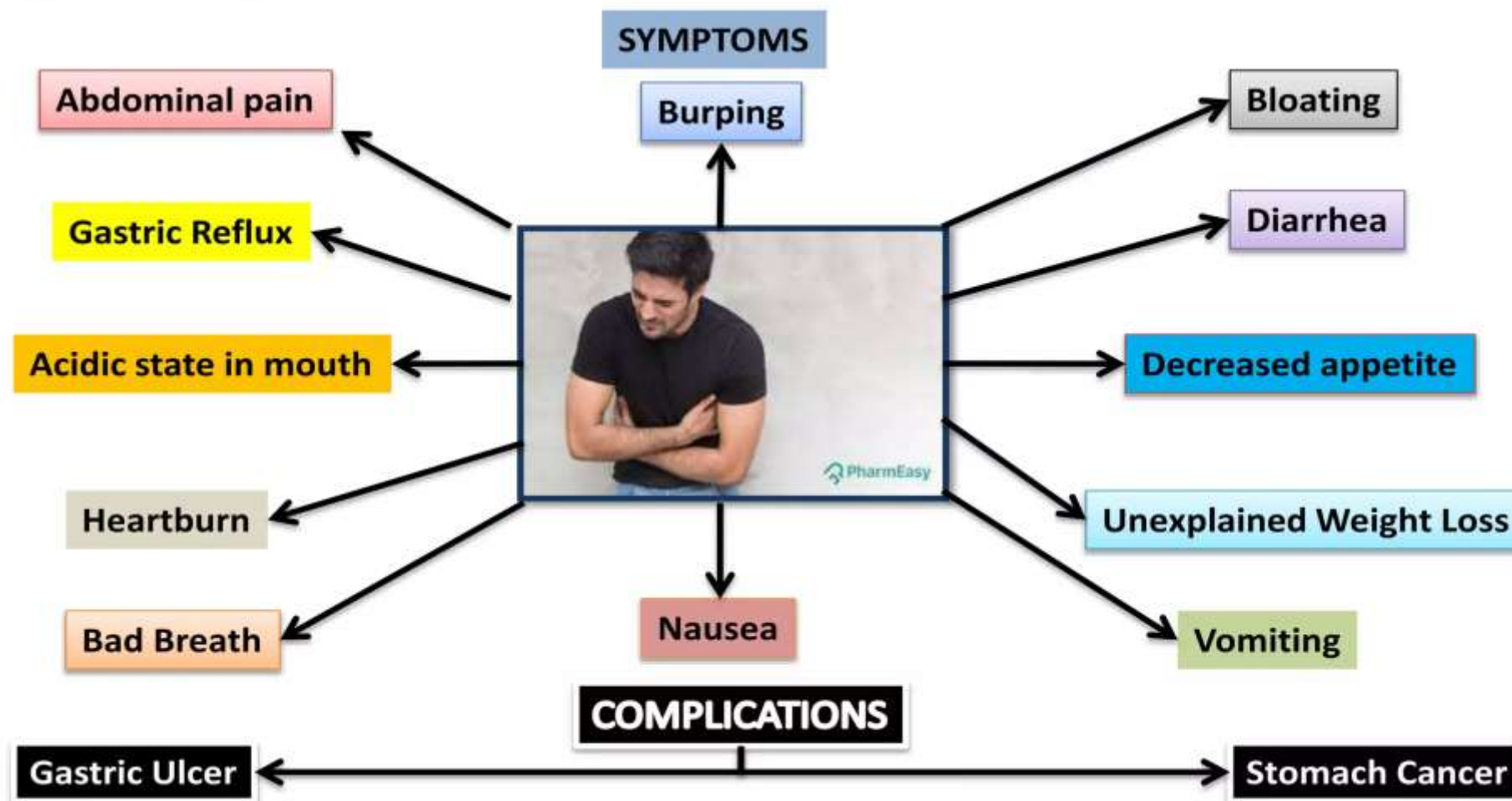
## SODIUM BICARBONATE

Uses: Heartburn, indigestion

## GASTRIC ACIDITY

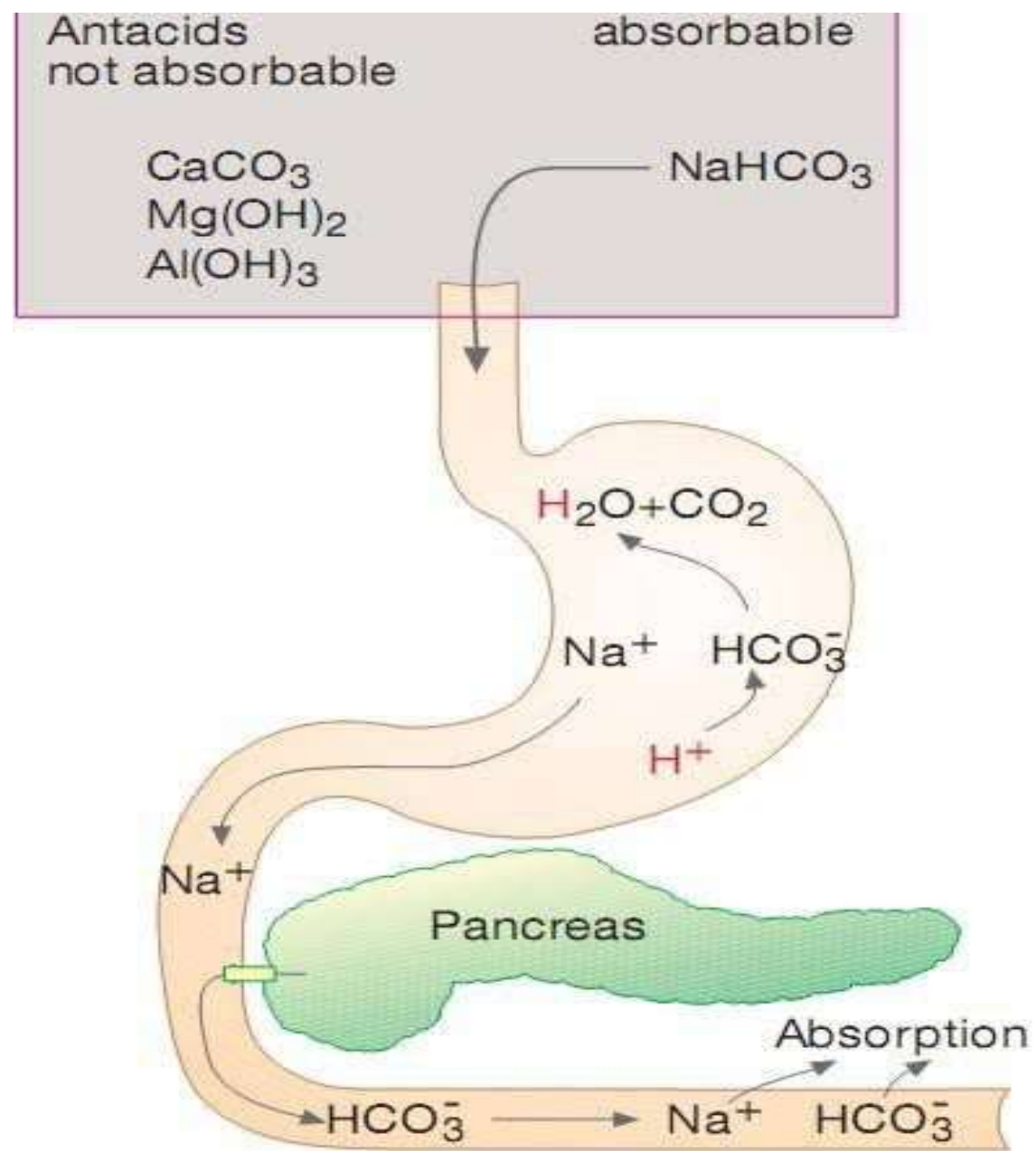


High amounts of HCl in stomach is referred to as Gastric Acidity



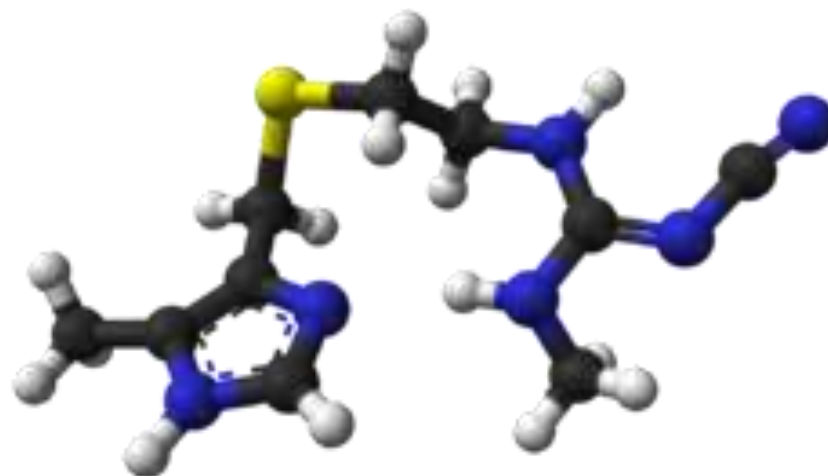








|                                        | Antacid X                                | Antacid Y                               |
|----------------------------------------|------------------------------------------|-----------------------------------------|
| Active substance                       | Magnesium hydroxide<br>( $M_r = 58.32$ ) | Calcium carbonate<br>( $M_r = 100.09$ ) |
| Mass of active substance in tablet / g | 0.200                                    | 0.220                                   |





## IDEAL CHARACTERISTICS OF AN ANTACID





## TYPES OF NON-SYSTEMIC ANTACIDS

### I. Calcium containing Antacids

- i) Calcium carbonate
- ii) Tribasic Calcium phosphate

### II. Magnesium containing antacids

- i) Magnesium Carbonate
- ii) Magnesium hydroxide
- iii) Magnesium phosphate
- iv) Magnesium oxide
- v) Magnesium citrate
- vi) Magnesium trisilicate

### III. Aluminum Containing antacids

- i) Aluminium hydroxide
- ii) Aluminium phosphate
- iii) Aluminium carbonate gel
- iv) Aluminum Phosphate
- v) Dihydroxyaluminium sodium carbonate
- vi) Dihydroxyaluminium aminoacetate

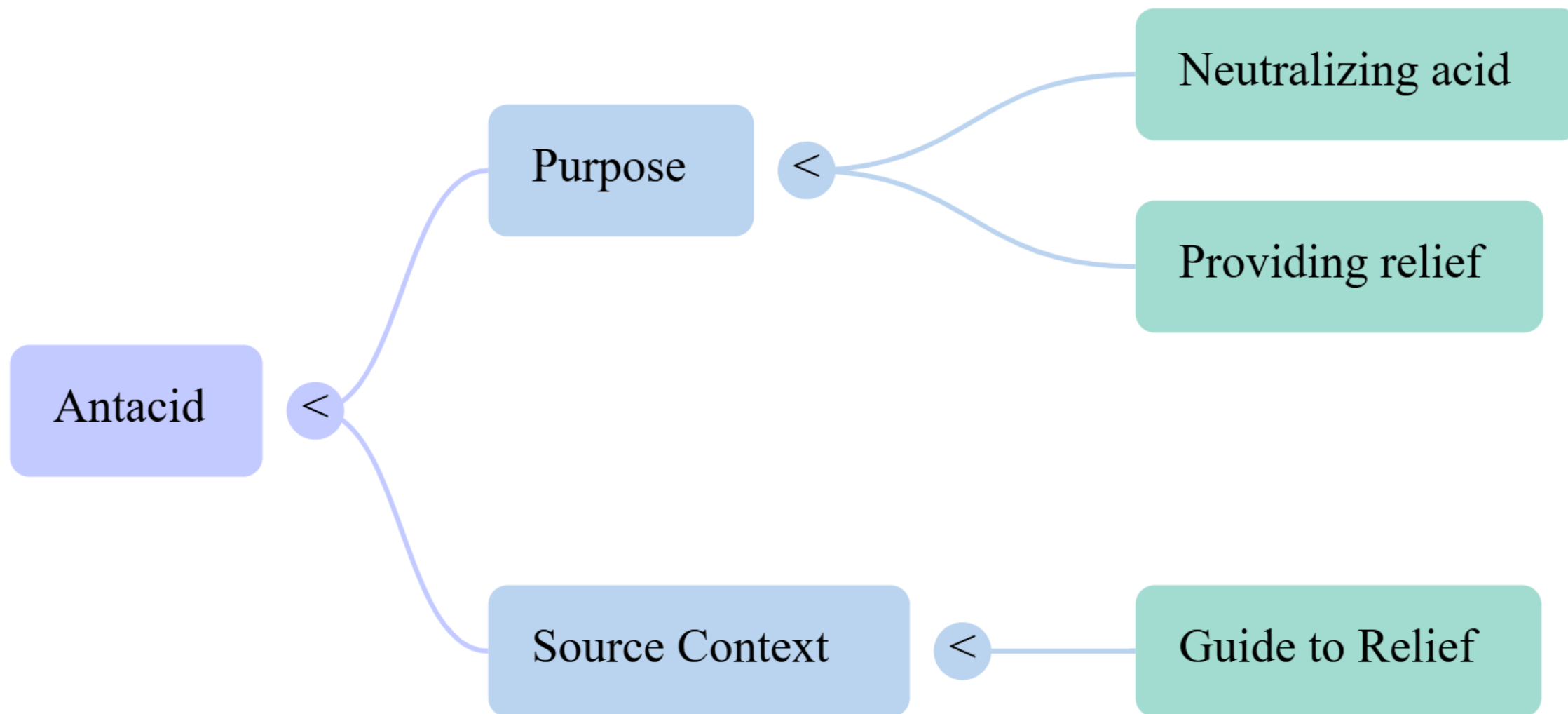
### IV. Combination Antacids

- i) Aluminium hydroxide gel + Magnesium hydroxide
- ii) Aluminium hydroxide gel + Magnesium trisilicate
- iii) Simethicone containing antacids
- iv) Calcium Carbonate containing antacids
- v) Magaldrate: Monoalium hydrate + hydrated magnesium aluminate





## SUMMARY





## ASSESSMENTS

### 1. Write a note on antacid?



## 2. Write a short note on magnesium trisilicate?



### 3. Define antacids and classify them ?

# Antacids

## REFERENCES

• ***Pharmaceutical Chemistry For First Year Diploma In Pharmacy***: This book, following the latest Pharmacy Council of India (PCI) ER-2020 syllabus, covers inorganic pharmaceuticals, including gastrointestinal agents like antacids.

- **Authors include:** Dr. Ajay Bilandi, Dr. Shambaditya Goswami, and Maninderjeet Kaur.

• ***Pharmaceutical Chemistry***: Another textbook for D.Pharm students following the PCI ER 2020 syllabus, it has a dedicated section on Gastro-Intestinal Agents.

- **Authors:** Kishor Jain and Deepali

• ***A Textbook of Pharmaceutical Inorganic Chemistry***: Mr. Shivkant Patel, Mrs. S. Triveni, Dr. Prabhu C Jalihal, Mr. Sukanta Debnath, and Dr. Gourisankar Roymahapatra.



*Thank  
you*

