

ANTI-DIARRHEALS & LAXATIVES

Dr. Muhammad Saleh Faisal

Assistant Professor
Department of Pharmacology

LEARNING OBJECTIVES

By the end of this lecture, you will be able to:

- Enumerate anti-diarrhoeal drugs
- Enumerate drugs used to treat constipation
- Describe the mechanism of action of these drugs

DIARRRHEA

DIARRHEA

Abnormal passage of stools i.e.

Increased frequency or fluidity or weight (>200 g/d)

How frequent?

More than 3 episodes of loose stool/day

Common causes of diarrhea?

TREATMENT

NON-PHARMACOLOGICAL MANAGEMENT

Diet

Rehydration



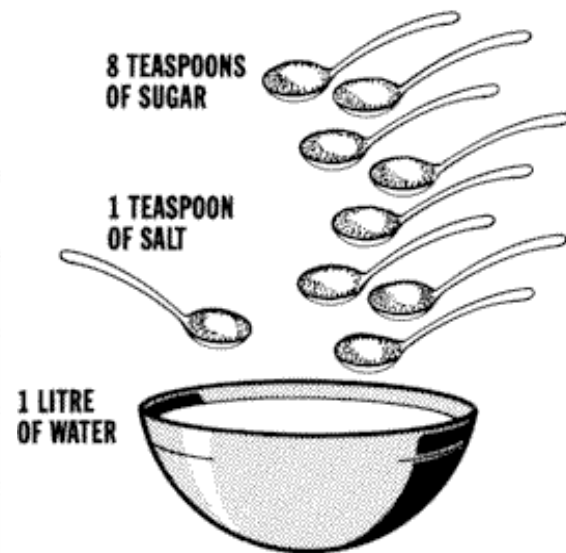
ORS

**Table 3:
WHO/UNICEF ORS**

Ingredient	g/L
Sodium chloride	2.6
Potassium chloride	1.5
Glucose, anhydrous	13.5
Trisodium citrate dihydrate	2.9
Total	20.5

**Table 4:
ORS Osmolalities**

Particle	mmol/L
Sodium	75
Potassium	20
Glucose	75
Chloride	65
Citrate	10
Total	245



PHARMACOLOGICAL MANAGEMENT

- **Adsorbent drugs**
- **Anti-cholinergic agents**
- **Opioid and their derivatives**

ADSORBENTS

Attapulgate

Bismuth sub-salicylate

kaolin-pectin mixture

Mechanism of Action

- Adsorb causative bacteria or toxins
- Also bactericidal action
- Also dec secretions by coating GIT wall

ANTI-CHOLINERGICS

Atropine

Hyoscyamine

Dicycloamine

Mechanism of Action

Muscarinic receptor blocker (antagonist)

- Decrease intestinal muscle tone and peristalsis of GI tract. This slows the movement of fecal matter through the GI tract.
- Also decreases hyper secretion

OPIOIDS AND THEIR DERIVATIVES

Codeine

Loperamide

Diphenoxin, Diphenoxylate

Mechanism of Action

Opioid-receptor agonist

Acts on μ receptors in the myenteric plexus of large intestine and inhibits its activity → Decreases smooth muscle tone → Dec intestinal motility → Increases the fecal contact time with wall → Allows time for more water to be absorbed out of fecal matter.

CONSTIPATION

CONSTIPATION

Difficult OR infrequent evacuation of dry hardened feaces from the bowel

How infrequent?

Less than 3 times/week

LAXATIVES

- Drugs that promote evacuation of stool out of bowel.
- Based on intensity of action :

Laxative

- Mild action, elimination of soft but formed stools.

Purgative

- Stronger action resulting in more pre-formed/liquid evacuation.

TREATMENT

NON-PHARMACOLOGICAL MANAGEMENT

- ✓ High-fiber diet
- ✓ Adequate fluid intake
- ✓ Regular exercise
- ✓ Heeding of nature's call

PHARMACOLOGICAL MANAGEMENT

- **Bulk forming agents**
- **Stimulant (Irritant) laxatives**
- **Stool softeners**
- **Osmotic laxatives**

BULK-FORMING AGENTS

Agar

Bran

Methylcellulose

Isapghula

Mechanism of action

They are indigestible, hydrophilic colloids that absorb water
→ Form a bulky gel that distends the colon → stimulate
peristalsis due to pressure against gut wall → easy passage of
stool

STOOL SOFTENERS

Mechanism of action:

Mineral oils

- Indigestible with minimal absorption. Coat stools → lubricate it → allow easier passage

Docusate salts (sodium or calcium)

- Emulsifying effect on feces → Reduces surface tension of stools → increases penetration of fluids into feces → soft bulky stools

IRRITANT (STIMULANT) LAXATIVES

Bisacodyl

Castor oil

Senna

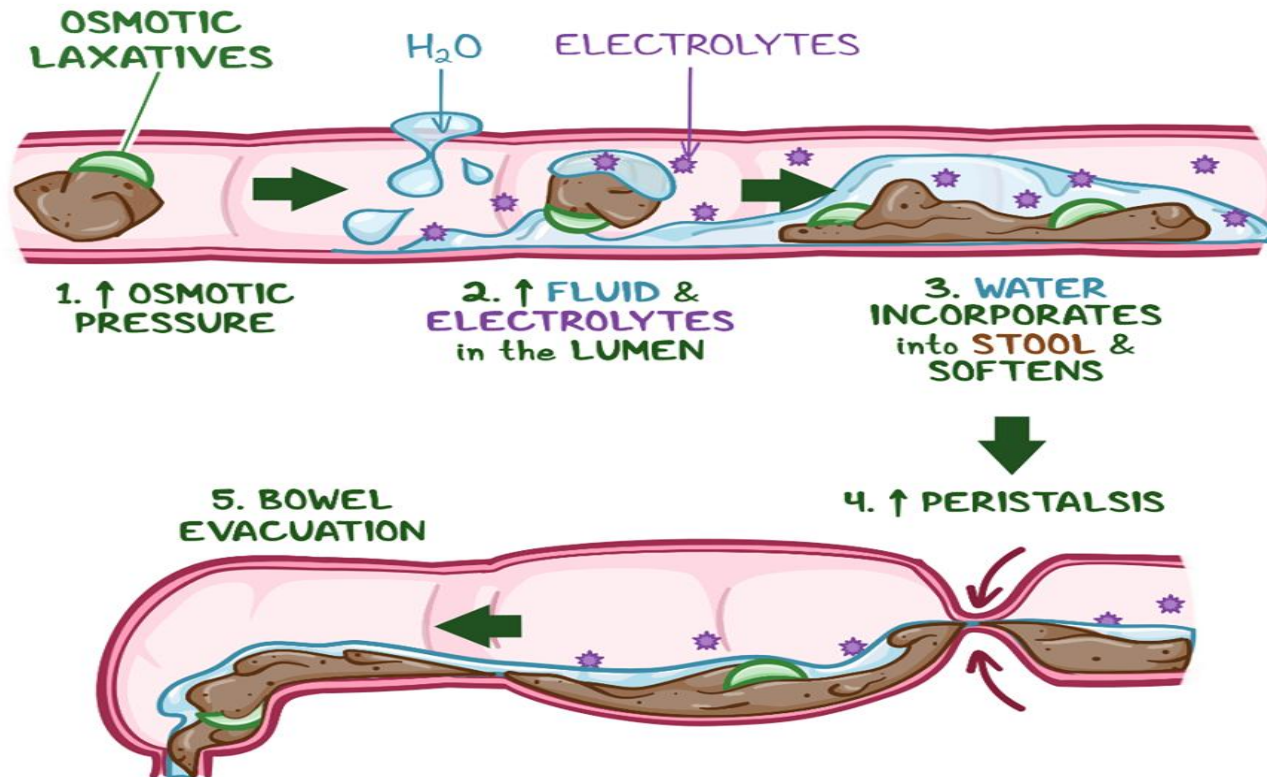
Mechanism of action

- Given in an inactive form → hydrolyzed in GIT into active form → causes GIT cell irritation → ↑ fluid and electrolyte secretion → evacuation of soft / liquid stools.
- Some also causes direct stimulation of the enteric nerves → inc peristalsis → promote evacuation.

OSMOTIC LAXATIVES

Lactulose
Mg Hydroxide

Mechanism of action



Thank you.....