

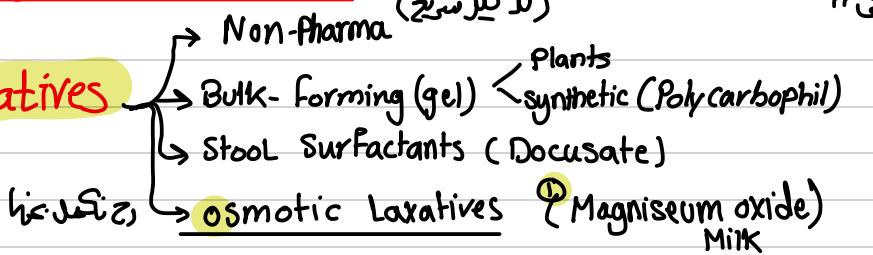
Lecture 3 Pharma

"خلال استغفاروا حق يُغفر الذنب الذي
حال بينكم وبين العلم والوفيق"

Drugs For GI Motility

Laxatives
Antidiarrheal

Laxatives



② Sorbitol

③ Lactulose → Sugars Metabolised by bacteria
Produce flatus & cramps side effects.

④ Balanced Polyethylene Glycol

Safe solution
- doesn't cause cramps or flatus
- no intravascular fluid shift.
for chronic constipation
PEG Powder is mixed with water or juice
T-Sodium sulfate - chloride - bicarbonate - Potassium chloride
Used before Enoscopy for Complete cleansing of colon
should be ingested rapidly (1L over 2-4 hrs)
Non absorbable, osmotically active sugar.

⑤ Stimulant-Laxatives (Cathartics)

Direct stimulation of Enteric System

Colonic Electrolyte & Fluid Secretion
Colonic a tone & dilation by destruction of myenteric plexus

Needed in Neurological impaired Patients

bed-bound Patients in long term care facilities

↳ Stimulated by stool load

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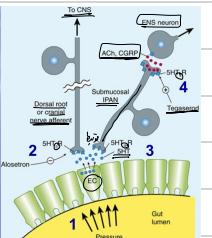
How stimulant laxatives work?

① Gut distension → ↑ 5-HT release from EC cells

② Stimulation of 5-HT₃ Receptors on the extrinsic afferent Nerves → causes vomiting & abdominal pain

③ 5-HT stimulates 5-HT₃ Receptors of the intrinsic primary afferent nerves (IPANs) which activate the enteric neurons → peristalsis & secretory reflex activities.

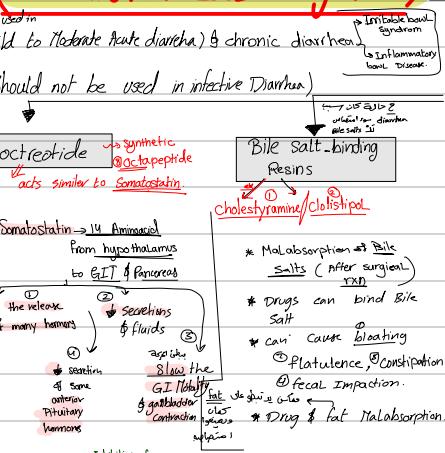
④ ↑ 5-HT₃ R on presynaptic terminals of IPANs enhance the release of cholecystokinin gene Related Peptide (CGRP) → Promoting Reflex Activity



* Clinical use
- chronic constipation
- Non-ulcer dyspepsia
- Gastroesophageal reflux disease
- Irritable bowel syndrome
* Adverse Effects
- Extremely safe drug
- Diarrhea occurs in 1% & resolves within days
- Expensive \$

③ Tegaseroids (serotonin 5-HT₃ Partial agonist)
* Clinical use
- (Serotonin 5-HT₃) is a presynaptic Receptor of Submucosal intrinsic Primary afferent nerve
- These neurons stimulate Proximal bowels
- Contraction (via Acetylcholine & substance P)
* 5-HT₃ Distal Relaxation (NO & VIP)
- Promotes gastric emptying & small & large intestine, but no effect on Esophageal Motility 5-HT₃
→ cAMP-dependent Chloride secretion → stool liquidity.

(Antidiarrheal agents)



↳ ادوية لعلاج الانتفاخ

Kaolin & Pectin: Combined (Kaolin + Pectin). Both act to absorb bacteria & toxins. Indigestible carbohydrates from apples.

Drugs used in Trt of Irritable Bowel Syndrome

① Idiopathic chronic C.

② Relapsing disorder

Pain, bloating, distension, cramps with diarrhea or constipation

↳ Serotonin 5-HT₃ Receptor Antagonist.

↳ Alosetron

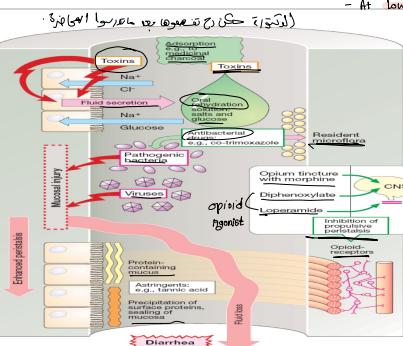
↳ Anti-spasmodic or Anticholinergic

↳ Cyclobenzaprine, Hyoscyamine

Spasm is not important symptom in IBS.

They inhibit muscarinic cholinergic receptors in the enteric plexus & smooth muscle.

At low doses → minimal side effect.



5-HT₃ Receptor Antagonist.

Alosetron

Anti-spasmodic or Anticholinergic.

Cyclobenzaprine, Hyoscyamine

Smooth muscle fibers in the enteric plexus & smooth muscle.

Terminally of enteric cholinergic neurons.

5-HT₃ is involved in the central response to visceral afferent stimulation.