EMETICS AND ANTIEMETICS:

Mechanism of vomiting → controlled by vomiting centre in Medulla.
Stimuli are Relayed to this centre from effected Area - gastric Mucosa & other part of GIT.

Refer page big 265 → The main neurotransmitter involved in control of vomiting are Ach, (H) histamine, 5-hydroxy tryptamine (5-HT$_3$) And dopamine.

→ The chemoreceptor trigger zone (CTZ) located in Area postrema & nucleus tractus solitarius (NTS) - Relay area for afferent impulse in GIT.

EMETICS:

drugs that cause vomiting → Mustard oil & salt
→ Apomorphine, Ipecacuanha.

C/I for the use of emetics:

1) Unconscious patients because of Risk of Aspiration
2) kerosene poisoning as aspiration may occur
3) Poisoning due to CNS stimulants. → Risk of ↑ seizures.
4) Morphine or phenothiazine poisoning.

ANTIEMETICS:

prevent or control vomiting are called Antimetics.

CLASSIFICATION:

⇒ Anticholinergics: Hyoscine, Dicyclomine.
(Scopolamine)

⇒ D_2 Blockers: chlorpromazine, Prochlorperazine, Droperidol

⇒ Prokinetic drug: Metoclopramide, Mosapride, Lisapride
Cisapride

H_1 Blockers

⇒ ~~5-HT$_3$ Antagonists~~: Promethazine, Diphenhydramine
Doxylamine.

⇒ 5-HT$_3$ Antagonists - Ondansetron, Palonosetron, Remosetron

⇒ Adjuvant antiemetics - Dexamethasone, Benzodiazepines.

→ NK$_1$ Receptor Antagonist - Fosaprepitant, Aprepitant

RANKA
DATE / /
PAGE

5HT3 Antagonists: Ondansetron prototype drug

Antiemetic due to blockage of 5-HT3 Receptor on vagal Afferents in the gut (peripheral Action).

→ They also block 5-HT3 Receptor in the CTZ of solitary tract nucleus

Anticancer drug and Radiotherapy

↓

Tissue damage (in the gut)

↓

Release of serotonin (5-HT) from enterochromaffin cell of intestinal mucosa

↓

Stimulate vagal afferents signal through 5HT3 Receptor

↓

5HT3 Antagonist → Impulse to CTZ & STN

↓

Induce vomiting

PK: well Absorbed orally, IV, Granisetron is more potent.

Palonosetron has longer duration of Action.

Uses

→ effective Agents for prevention and t/t of chemotherapy induced nausea & vomiting.

→ Combination with dexamethasone / diazepam enhance Antiemetic efficacy

→ effective in hyperemesis of pregnancy, drug induced vomiting

→ IBS.

ADR → headache, dizziness, Mild constipation

Abdominal discomfort / Allergic rx.

RANKA
DATE / /
PAGE

Gastric therapy.

PROKINETIC DRUGS:

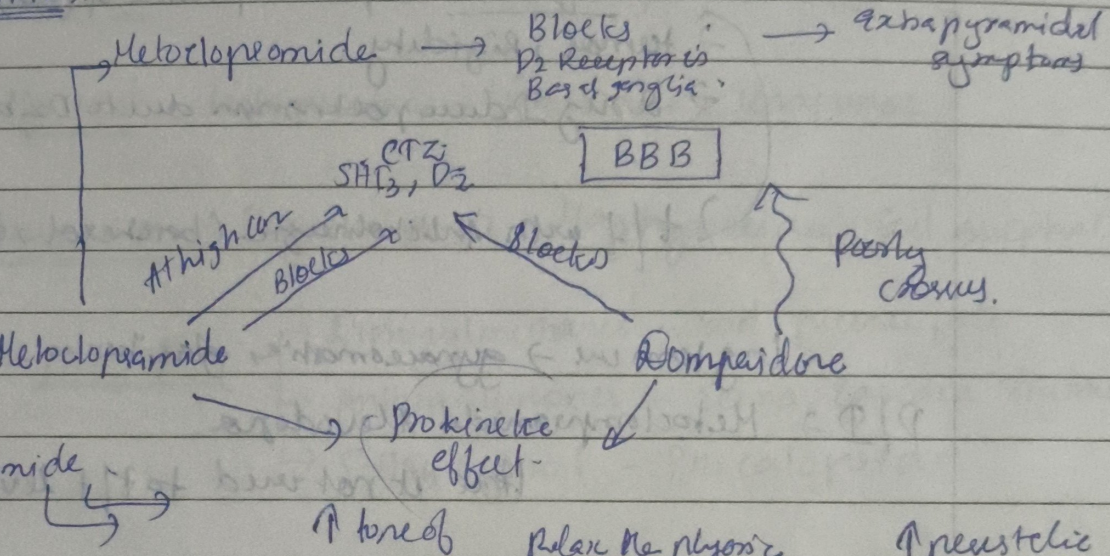
Drug which promote gastrointestinal transit and speed up gastric emptying by enhancing coordinated propulsive motility.

→ Act on dopaminergic and serotonergic Receptors.

↑ **METOCLOPRAMIDE:** It is a dopamine D_2 Receptor Antagonist

two imp Action ← central, peripheral.

Central Action.



→ ↑ is peristalsis of SI, ↑ is tone and Amplitude of Antral contraction.

⇒ Metoclopramide enchance Release of Ach from myentric neurons.

↓

This effect is due to D_2 Antagonism & $5HT_4$ Agonism in GI tract.

PK → Metoclopramide is Rapidly Absorbed after oral Administration. IV, IM Routes

Use: As an Antiemetic → Metoclopramide

(I) Disease Associated vomiting.
(II) Drug Induced vomiting.
(III) Post-operative vomiting.
(IV) cancer - chemotherapy - induced vomiting.
(V) Vomiting due to Radiation sickness.

⇒ GERD → Patient is patient with Reflux oesophagitis by ↑ tone of LES.

→ To Alleviate symptoms associated with gastric stasis in patients with diabetes postoperative or idiopathic gastroparesis.

→ To stimulate gastric emptying before GI in emergency surgeries

→ Intractable hiccups (Metoclopramide)

ADR → drowsiness, dizziness, diarrhoea,
Acute dystonias (spasm of Muscle of face, tongue, neck, back)
→ tremor, Rigidity.
→ Drug Induce parkinsonism due to D2 blockers.
} t/t with Anticholinergic (benzhexol, benztropine)

long term use → gynaecomastia, galactorrhea, menstrual irregularity

D/D → Metoclopramide Levodopa.
Here it not used to t/t levodopa-induced vomiting