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Diploma in Pharmacy 2nd Year
Pharmacology
Chapter 8 : Drugs Acting on Gastro Intestinal Tract

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Drugs Acting on Gastro Intestinal Tract

Anti- Ulcer Drugs

- **Ulcer** : A sore (wound) develops on the lining of the oesophagus , Stomach , or small intestine.
- If ulcer is in stomach it is called Gastric Ulcer,
- If in Duodenum it is called Duodenal Ulcer,
- If both type of ulcer is called Peptic Ulcer.
- The Drugs are used to treat ulcer / Sore are called anti ulcer drugs

Classification

1) Anti-secretory Agents (reduce gastric acid secretion)

- **H₂ Antagonists** : Cimetidine , Ranitidine.
- **Proton Pump inhibitors** : Omeprazole , pantoprazole , Lansoprazole, raeprazole.
- **Anti-cholinergic drugs** : pirenzepine.
- **Prostaglandin Analogues** : Misoprostol , Enprostil.

2) Antacids : (Neutralize gastric acid)

- **Systemic** : Sodium Bicarbonate , Sodium citrate .
- **Non- Systemic** : Magnesium Hydroxide , aluminium Hydroxide Gel , Magaldrate , Calcium Carbonate.

3) Ulcer Protectives : Sucralfate and Colloidal Bismuth Subcitrate (CBS)

4) Ulcer Healing Drugs : Carbenoxolone sodium.

5) Anti- Helicobacter pylori Drugs : amoxicilin , Metronidazole , Clarithromycine.

Pharmacological Action

➤ Pirenzepine :

- It reduces gastric acid secretion therefore it is used in peptic ulcer.
- It also reduces Muscle Spasm.

➤ Sodium Bicarbonate :

- It is a water soluble, Strong base.
- It gives immediate effect but has a short duration of action.

Indications

- In peptic Ulcer
- Ulcer Healing
- Ulcer Pain
- Bleeding peptic ulcer

- To relieve heart burn.
- Mouth ulcer.

Contraindication

- ⤴ Hepatic failure
- ⤴ Renal Impairment
- ⤴ Hypersensitivity
- ⤴ Pregnancy

Doses

- ✓ Cimetidine 0.02g tab. bd
- ✓ Ranitidine 0.15 g tab. Bd
- ✓ Sucralfate 10ml four time a day
- ✓ Carbenoxolone 20-50 mg 4 time a day

Anti – Emetics

- Anti-emetics are effective against vomiting and nausea.
- They are used to treat motion sickness and side effects of opioid analgesics, general anaesthetics, and chemotherapy against cancer.

Classification

- I. **Anti Cholinergic drugs** : Hyoscine , Dicyclomine .
- II. **H₁ Anti-Histaminics** : Promethazine , Diphenhydramine , Cyclizine .
- III. **Neuroleptics** : Chlorpromazine , Haloperidol .
- IV. **Prokinetic drugs** : Metoclopramide , Domperidone .
- V. **5-HT₃ Antagonist** : Ondansetron , Granisetron .
- VI. **Adjuvant Anti-emetics** : Dexamethasone , Benzodiazepines , Canabinoids .

Pharmacological Action

- Anti-emetics work by targeting specific neurotransmitters and receptors in the brain and gut that are involved in the control of nausea and vomiting

Indications

- They are used to treat Vomiting
- To treat nausea .
- To treat Motion sickness .
- To treat post anaesthetic nausea and vomiting .
- Morning sickness (vomiting during pregnancy , in first three months)

Contraindications

- ▲ Hypersensitivity
- ▲ Coma
- ▲ Severe CNS depression etc,

Doses

- ✓ Hyoscine 0.2 – 0.4 mg oral
- ✓ Promethazine 25 mg twice a day
- ✓ Domperidone 10 – 40 mg TDS
- ✓ Cinnarizine 75 mg OD

Laxative (Purgative)

- The drugs are used to treat constipation are called laxative .
- These drugs make the stool soft and increase the bowel movement and ease to Defecate (to pass stool) .
- If the laxatives are taken in high dose and cause diarrhoea(watery stool) it is called purgative .

Classification

- **Bulk Forming - Dietary fiber** : Bran , Psyllium , Ispagula , Methylcellulose .
- **Stool softener** : Docusates (DOSS) , Liquid paraffin.
- **Stimulant** : Senna , Cascara sagrada , castor oil .
- **Osmotic Purgatives** : Mag. sulphate . Mag. Hydroxide

Pharmacological Action

- **Bulk Forming - Dietary fiber** : Bran , Psyllium , Ispagula , Methylcellulose These drugs increase the weight and size of stool by absorbing water, and make the stool soft , so stool passes easily.
- **Stool softener** : Docusates (DOSS) , Liquid paraffin. It is a surfactant ingredient (a substance when it is added to a liquid , reduces its surface tension , so that increases its spreading and wetting property) It mixes the water in bowel with the stool and softens it.
- **Stimulant** : Senna , Cascara sagrada , castor oil . They increase the peristalsis movement by direct acting on the enteric nervous system and ease the stool passage.
- **Osmotic Purgatives** : Mag. sulphate . Mag. hydroxide These agents stimulate the intestine to absorb water in excess amount from the body and pore the water into stool , so stool becomes soft and easier to pass out.

Indications

- Constipation
- Preoperative bowel preparation
- Fecal impaction
- Hemorrhoids
- Anal fissures

Contraindications

- ▲ Abdominal pain
- ▲ Nausea, and vomiting
- ▲ Rectal bleeding
- ▲ Gastrointestinal obstruction
- ▲ Diarrhea
- ▲ Inflammatory bowel disease

Dose

- ✓ Docusates 100-400 mg /day
- ✓ Liquid paraffin 15-30 ml /day
- ✓ Senna 10-40 mg at bed time
- ✓ Mag. sulphate 5-15 g in 150 ml water

Anti Diarrhoeal Drugs

- **Diarrhoea** : it a condition in which patients pass loss and watery Stool more than three times a day .
- Acute Diarrhoea : If diarrhoea continues for 1-2 days it is called Acute diarrhoea .
- And if continues for more than 2 days it is called prolonged diarrhoea.
- In diarrhoea motility of GIT increased , fluid absorption decreased and causes a loss of water and electrolytes in the body (Na⁺)
- The drugs are used to treat diarrhoea are called anti- Diarrhoeal drugs .

Classification

- **Anti-Motility agents** : Morphine , Codeine , Loperamide , Bismuth subsalicylate.
- **Cannabinoids Receptor Agonist** : Tetrahydrocannabinol.
- **Adsorbents** : Kaolin , Pectine, Chalk , Charcoal , methyl Cellulose.
- **Anti-spasmodic Agents** : dicyclomine , Mebeverine.
- **Anti-Microbial drugs** : refaximin , ciprofloxacin.
- **Probiotics** : Lactobacillus , Bifidobacterium.

Pharmacological Action

- **Anti-Motility agents** : Morphine , Codeine , Loperamide , Bismuth subsalicylate. these drugs decrease the ability of intestine to contract.
- **Cannabinoids Receptor Agonist** : tetrahydrocannabinol . The drugs reduce the intestinal motility by decreasing the release of Acetylcholine from enteric nerve (The nervous system controls the function of GIT).
- **Adsorbents** : Kaolin , Chalk , Charcoal , methyl Cellulose . They absorb water , toxin , and bacteria from GIT , and give relief.
- **Anti-spasmodic Agents** : dicyclomine , Mebeverine . They relax the smooth muscles and rid from spasm and pain in bowel.
- **Anti-Microbial drugs** : rifaximin , ciprofloxacin . These drugs kill the microorganism or prevent their growth.
- **Probiotics** : Lactobacillus , Bifidobacterium . These are good bacteria of large intestine , if diarrhoea is due to lack of them , the use of Probiotics treats the diarrhoea.

Indications

- Treat diarrhea
- To reduce intestinal motility
- Abdominal Pain
- Spasm etc

Contraindication

- ▲ Gastrointestinal obstruction
- ▲ Inflammatory bowel disease
- ▲ Allergic reactions
- ▲ Renal and hepatic impairment
- ▲ Fecal incontinence

Doses

- ✓ Codeine 60mg Tds
- ✓ Loperamide 4 mg 2 mg after per motion
- ✓ Probiotic (Econorm) 250 mg
- ✓ Kaolin 26.2 mg after each loss motion
- ✓ Methyl Cellulose 2 tabs .1000 mg with 8 oz of water

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