

# Bullet Point Nursing

## Gastrointestinal Pharmacology

*Disclaimer: These notes are designed to provide the key points of each topic and may not contain all necessary information. Every effort is made to ensure this content is up to date and accurate at the time of writing. No liability is assumed for the content or its relation to current standards and practices. This should not replace comprehensive nursing educational resources.*

### Pathophysiology review:

- Peristalsis: Rhythmic contractions of the intestinal muscles that move contents through the digestive tract.
  - Slow peristalsis: Leads to excess water reabsorption from the stool, resulting in hard, dry stools (constipation).
  - Fast peristalsis: Limits water reabsorption, resulting in watery stools (diarrhea).
- Laxatives: Stimulate or enhance bowel movements, which can result in frequent or forceful bowel activity.

### Drug class: Bulk forming laxatives

- Drugs:
  - Psyllium (Metamucil)
  - Methylcellulose (Citrucel)
- MOA: Acts like dietary fiber, absorbing water in the intestines, which increases stool bulk and promotes regular bowel movements
- Indications: Treatment and prevention of constipation, reduction in cardiac disease risk (by lowering cholesterol)
- Onset is in 1+ days
- Can be safely used long term
- Often first line treatment for constipation

### Drug class: Surfactant laxatives (Stool softener)

- Drug:
  - Docusate sodium (Colace)
- MOA: Helps water enter the stool, softening the stool to reduce strain
- Indications: Treatment and prevention of constipation
- Onset is in 1+ days

### Drug class: Stimulant laxatives

- Drug:
  - Bisacodyl (Dulcolax)
  - Senna
- MOA: Stimulate peristalsis
- Indications: Constipation related to slow peristalsis (i.e., opioid induced constipation)
- Not recommended for long-term use due to risk of dependence or loss of bowel function

### Drug class: Osmotic laxatives

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- Drugs:
  - Magnesium hydroxide (Milk of Magnesia)
  - Polyethylene glycol (PEG)
  - Lactulose
- MOA: Retains water in the stool increasing softness and promoting peristalsis
- Indications: Constipation
- Assess for signs of dehydration
- High dose Polyethylene Glycol (PEG) is used as an evacuant and bowel prep
- Magnesium hydroxide can cause electrolyte imbalances (e.g., hypermagnesemia)
- Lactulose can also be used for treating hepatic encephalopathy due to reducing ammonia levels

## Drug class: Opioid antagonist

- Drug:
  - Methylnaltrexone
- MOA: Blocks GI opioid receptors that cause decreased GI motility (slowed peristalsis)
- Indications: Opioid induced constipation (OIC)
- SE/AE: GI effects

## Constipation notes:

- Mineral oil can be used orally for constipation and rectally for fecal impaction
- Laxatives may be abused for weight loss, can lead to dependency on them for BMs
- Laxatives all carry a risk of causing diarrhea
- Non-pharm interventions include increasing fiber, fluid intake, and increasing activity

## Drug class: Opioids

- Drugs:
  - Diphenoxylate with atropine (Lomotil)
  - Loperamide (Imodium)
- MOA: Slow down peristalsis
- Indications: Diarrhea
- Diphenoxylate is mixed with atropine to prevent abuse
- SE/AE: Neuro and GI symptoms, pancreatitis
- Controlled substance (Schedule V), loperamide is available OTC

## Drug name: Bismuth subsalicylate (Pepto-Bismol)

- MOA: Direct action against viral and bacterial GI pathogens
- Indications: Dyspepsia, treatment and prevention of diarrhea

*Dicyclomine (Bentyl) is an anticholinergic used for IBS*

*Assess for fluid and electrolyte imbalances especially with prolonged diarrhea, in children, and elderly*

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## **Nausea and vomiting notes:**

- Assess for causes such as bowel obstruction, myocardial infarction, pregnancy, or medications
- Assess for fluid and electrolyte imbalances especially with prolonged vomiting in children, pregnancy, and the elderly
- Pyridoxine (B6) is recommended for nausea relief in pregnancy
- Anti-nausea medications are often administered prophylactically before chemotherapy or other emetogenic treatments.

## **Drug class: Serotonin receptor antagonist**

- Drug:
  - Ondansetron (Zofran)
- MOA: Blocks 5-HT<sub>3</sub>-receptors in the chemoreceptor trigger zone
- Indications: Nausea
- First line agent for nausea
- SE/AE: Headache and QT prolongation
- Available PO, IV, IM, ODT
  - Often given ODT (oral disintegrating tablet)
    - Place on the tongue and allow to dissolve

## **Drug class: Phenothiazines**

- Drug:
  - Prochlorperazine (Compazine)
  - Promethazine (Phenergan)
- MOA: Blocking dopamine in the chemoreceptor trigger zone
- Indications: Nausea
- SE/AE: EPS, anticholinergic effects, hypotension, and sedation
- Black Box warning: Extrapyramidal effects (EPS), severe tissue injury, cannot be used in children under 2

## **Drug name: Metoclopramide (Reglan)**

- MOA: Blocking dopamine in the chemoreceptor trigger zone, also increases peristalsis
- Indications: Gastroparesis, GERD, chemotherapy induced nausea
- Off-label use include other causes of nausea, migraines, tension headaches
- SE/AE: EPS, sedation, diarrhea

## **Drug class: Anticholinergics**

- Drug:
  - Scopolamine (Transderm scop)
- MOA: Anticholinergic action
- Indications: Motion sickness and nausea
- SE/AE: Dry mouth

## **Drug class: Histamine one receptor antagonist (Antihistamine)**

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- Drug:
  - Doxylamine (Unisom)
  - Hydroxyzine (Vistaril)
- MOA: Histamine one receptor antagonist, decreases histamine which results in sedation
- Indications: Insomnia, nausea in pregnancy, anxiety, allergies
- Doxylamine is available over the counter

## Notes:

- Alosetron is uncommonly used to treat females with refractory IBS-D
- Lubiprostone is used to treat constipation and females with IBS-C
- Inflammatory bowel disease includes Crohn's disease and ulcerative colitis
  - Managed with DMARDs and symptomatic treatments.

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## References

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