



# **SNS COLLEGE OF ALLIED HEALTH SCIENCES**

SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai



**DEPARTMENT : PHYSICIAN ASSISTANT**

**COURSE NAME : PHARMACOLOGY**

**UNIT : DRUGS ACTING ON GASTROINTESTINAL SYSTEM**

**TOPIC : ANTIEMETICS**



# ANTIEMETICS



- Antiemetics are medications or substances that are used to prevent or treat nausea and vomiting.
- Nausea and vomiting can be caused by various factors, including motion sickness, chemotherapy, surgery, pregnancy (morning sickness), infections, and certain medical conditions.



# METOCLOPRAMIDE



## **Class:**

Dopamine receptor antagonist and prokinetic agent.

## **Mechanism of Action:**

Blocks dopamine receptors in the chemoreceptor trigger zone (CTZ) of the central nervous system, reducing nausea and vomiting. It also enhances gastric emptying.



## **Pharmacodynamics:**

Increases lower esophageal sphincter tone, enhances gastric emptying, and increases peristalsis in the small intestine.

## **Pharmacokinetics:**

Well-absorbed orally, undergoes significant first-pass metabolism, and is excreted in urine.



## **Indications:**

Gastroesophageal reflux disease (GERD), diabetic gastroparesis, prevention of chemotherapy-induced nausea and vomiting (CINV).

## **Contraindications:**

Pheochromocytoma, history of tardive dyskinesia, bowel obstruction or perforation.



## **Side Effects:**

Extrapyramidal symptoms (especially with prolonged use), sedation, diarrhea, hyperprolactinemia.



# ONDANSETRON



## **Class:**

Serotonin (5-HT<sub>3</sub>) receptor antagonist.

## **Mechanism of Action:**

Blocks serotonin receptors in the central nervous system and gastrointestinal tract, preventing nausea and vomiting.



## **Pharmacodynamics:**

Selectively inhibits serotonin type 3 receptors, particularly in the chemoreceptor trigger zone.

## **Pharmacokinetics:**

Well-absorbed orally, metabolized by the liver, and excreted in the urine.





## **Indications:**

Prevention and treatment of nausea and vomiting associated with chemotherapy, radiation therapy, and surgery.

## **Contraindications:**

Hypersensitivity to ondansetron.



## **Side Effects:**

Headache, constipation, QT interval prolongation (rare).



# DEXAMETHASONE



## **Class:**

Corticosteroid.

## **Mechanism of Action:**

Exerts anti-inflammatory and immunosuppressive effects, reducing the sensitivity of the vomiting center to emetogenic stimuli.



## **Pharmacodynamics:**

Modulation of gene expression, inhibiting multiple inflammatory pathways.

## **Pharmacokinetics:**

Well-absorbed orally, metabolized by the liver, and excreted in the urine.



## **Indications:**

CINV, postoperative nausea and vomiting (PONV).

## **Contraindications:**

Systemic fungal infections, known hypersensitivity to dexamethasone.



## **Side Effects:**

Increased risk of infections, hyperglycemia, fluid retention, psychiatric effects.



## TECHNICIAN ROLE



- Assess for signs of tardive dyskinesia, monitor liver function in long-term use.
- Monitor ECG in patients with risk factors for QT prolongation.
- Monitor blood glucose, blood pressure, and for signs of infection.



# ASSESSMENT



- What is the Pharmacokinetics of Dexamethasone ?
- What all are the Contraindications of Metoclopramide?