



SNS COLLEGE OF ALLIED HEALTH SCIENCES

SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai



**DEPARTMENT : OPERATION THEATRE AND ANAESTHESIA
TECHNOLOGY**

COURSE NAME : PHARMACOLOGY

UNIT : ANTIEMETICS

**TOPICS : METOCLOPRAMIDE, ONDANSETRON,
DEXAMETHASONE**



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-HT₃) 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?