



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 : OBSTETRICS

TOPICS : OXYTOCIN, METHERGIN



OXYTOCIN



Class: Oxytocin is a hormone and a medication.

Mechanism of Action:

- Stimulates uterine contractions by binding to oxytocin receptors on uterine smooth muscle cells.
- Initiates milk ejection reflex (let-down) by contracting the myoepithelial cells surrounding the alveoli of the mammary glands.



Pharmacodynamics:

- Uterine contraction and milk ejection.

Pharmacokinetics:

- Oxytocin is usually administered by intravenous or intramuscular injection.
- Rapid onset of action.



Indications:

- Induction or augmentation of labor.
- Prevention or control of postpartum hemorrhage.
- Facilitation of milk ejection during breastfeeding.



Contraindications:

- Hypersensitivity to oxytocin.
- Fetal distress in a cephalic presentation.
- Severe preeclampsia or eclampsia.
- Unfavorable fetal positions or presentations.



Side Effects:

- Uterine hyperstimulation.
- Maternal water retention and hyponatremia.
- Hypertension.
- Nausea and vomiting.



Technician Role:

- Continuous monitoring of uterine contractions and fetal heart rate during administration.
- Monitoring for signs of water intoxication.



METHERGINE



Class: Methergine is an ergot alkaloid.

Mechanism of Action:

- Binds to alpha-adrenergic and serotonin receptors, leading to vasoconstriction.
- Stimulates uterine smooth muscle, causing sustained contractions.



Pharmacodynamics:

- Uterine contraction.

Pharmacokinetics:

- Well-absorbed after oral administration.
- Extensively metabolized in the liver.
- Excreted in bile.



Indications:

- Prevention and management of postpartum hemorrhage due to uterine atony or subinvolution.



Contraindications:

- Hypersensitivity to ergot alkaloids.
- Hypertension.
- Toxaemia of pregnancy.



Side Effects:

- Nausea and vomiting.
- Hypertension.
- Coronary artery vasoconstriction (rare).



Technician Role:

- Blood pressure monitoring due to the risk of hypertension.
- Monitoring for signs of ergotism (symptoms include numbness, tingling, pain, and cyanosis in the extremities).



ASSESSMENT



- What is the Pharmacokinetics of Oxytocin ?
- What is the Pharmacodynamics of Methergine ?