

Uterine Drugs

Drugs	MOA	Pharmacokinetics	Uses	Side effect	Contraindication
1.Oxytocin Syntocinon Pitocin	Interaction of oxytocin with myometrial cell membrane receptor → influx of ca ++ from extra cellular fluid & from SER in to the cell → ↑ cytoplasmic calcium → uterine contraction.	Not effective orally. Administered by I.V infusion → labor. Also as a nasal spray → impaired milk ejection. Not bound to plasma proteins. Catabolized by liver & kidneys. Tl/2: 5 min.	Given only when uterine cervix is soft & dilated . 1.induction & augmentation of labor (slow I.V infusion) in: Mild preeclampsia. Uterine inertia. Incomplete abortion. Post maturity. Maternal diabetes. 2.Post partum uterine hemorrhage (I.V drip): (ergometrine is often used). 3.impaired milk ejection : one puff in each nostril 2-3 min before nursing.	Maternal death due to: Hypertension. Uterine rupture. Fetal death (ischaemia). Water intoxication. ✓ In oxytocine over dose we use → Atociban	Hypersensitivity. Prematurity. Abnormal fetal position . Evidence of fetal distress. Cephalopelvic disproportion. Incomplete dilated cervix. Precautions: Multiple pregnancies. Previous c- section. Hypertension.
2.Ergot alkaloids Ergometrine (ergonovine) Dihydroergotamine Methylegonovine	Longer duration of action than oxytocin. Absorbed orally from gut (tablets). Usually given I.M. Both ergonovine & methylegonovine can be given IM/ IV. "fast". Duration of action 24 hrs with half life: 2hrs. Extensively metabolized in liver. 90% of metabolites are excreted in bile.	Post partum hemorrhage (3 rd stage of labor). Syntometrine (ergometrine + oxytocin) I.M. Causes contractions of uterus as a whole.	N & V, diarrhea. Hypertension. Vasoconstriction of peripheral blood vessels (toes & fingers). Gangrene.	Induction of labour. 1st & 2nd stage of labor. Vascular disease. Severe hepatic & renal impairment. Severe hypertension.	
3.Prostaglandins Dinoprostone (PGE2) Carboprost (PGF2α)	They promote a series of coordinated contraction of body of organ along with relaxation of cervix. ↑ uterine tone. Can expel uterine content in early pregnancy.	Induction of abortion at any stage. Induction of labor when cervix is not soft (administered as vaginal gel in the cervix). Postpartum hemorrhage.	N & V, diarrhea Abdominal pain. Bronchospasm (PGF2α). Flushing (PGE2).	Mechanical obstruction of delivery. Fetal distress. Predisposition to uterine rupture. Precautions: Asthma. Multiple pregnancies. Glaucoma. Uterine rupture.	

UTERINE RELAXANTS (Tocolytic Drugs)

NOT be used in:

Intrauterine infection.

Fetal distress.

Severe preeclampsia.

Vaginal bleeding.

Maternal hemodynamic instability.

1. β-adrenoceptor agonist Ritodrine (Selective)	Bind to β -adrenoceptors, activate enzyme adenylate cyclase \rightarrow \uparrow lvl of camp reducing intracellular calcium level .	I.V. Drip.	Relax the uterus & arrest threatened abortion or delay premature labor.	Tremor. N & V, flushing, sweating, tachycardia (high dose), hypotension, hyperglycemia , hypokalaemia .	Heart disease. Diabetes mellitus.
2. Calcium channel blockers Nifedipine	Causes relaxation of myometrium. Markedly inhibits the amplitude of spontaneous & oxytocin-induced contractions .		Unwanted effect: Headache, dizziness, hypotension, flushing, constipation, ankle edema, coughing, wheezing, tachycardia.		
3. Prostaglandin synthetase inhibitors	The depletion of prostaglandins prevents stimulation of uterus NSAIDs: Indomethacin Aspirin Ibuprofen			Side effect: Ulceration. Premature closure of ductus arterious.	