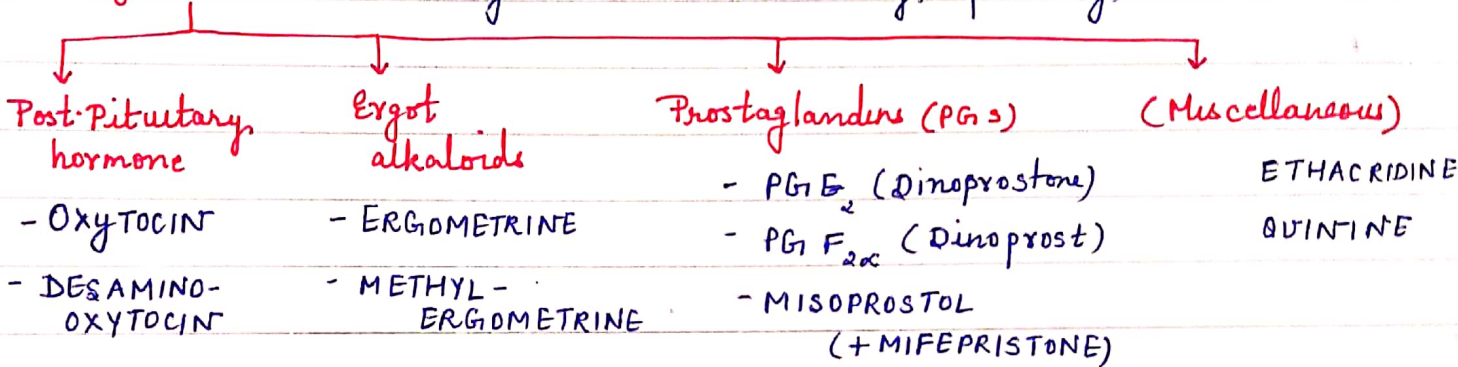


**OXYTOCICS**  
(Uterine Stimulants)  
(Abortifacients)

Drugs acting on uterus primarily affects the endometrium / myometrium. The imp. ones are estrogen, progestins & their antagonist.

Myometrium receives both sympathetic & parasympathetic innervation, as such autonomic drug affects its motility. However, directly acting drugs r more imp. & have more selective action.

**Oxytocics** - are the drugs which ↑ uterine motility, especially, at term.



1 - **OXYTOCIN**

- It's a hormone secreted by post-pituitary (along w/ AVP & ADH)
- Pituitary extract was first used in labour in 1909
- It is released by stimuli; for oxytocin - coitus / parturition / suckling  
for ADH - hypertonic saline infusion / water / haemorrhage etc.

**Action on uterus** → Oxytocin ↑ force & frequency of uterine contraction  
Estrogen sensitise the uterus to oxytocin, while progesterone decreases the sensitivity & so the non pregnant uterus or early pregnancy is rather resistant to oxytocin

No. of oxytocin receptors ↑ markedly during later part of pregnancy.

Oxytocin also ↑ PG synthesis & release by endometrium which may contribute contractile response.

M/O - There r specific G<sub>i</sub>-protein coupled oxytocin receptor on myometrium

(Ca<sup>2+</sup> cause contractn AP)

which mediate the response mainly by depolarizat<sup>n</sup> of muscle fibre & influx of Ca<sup>2+</sup>

- **CVS** - Conventional doses of oxytocin have no effect on BP but higher dose cause vasodilation producing brief fall in BP; reflex tachycardia & flushing. Umbilical vessels are markedly constricted, oxytocin may help in their closure at birth.
- **Kidney** - In higher doses exert ADH like action. Pulmonary oedema can occur if large amount of IV fluids & oxytocin are infused together.

**P/K** → Being a peptide, oxytocin is inactive orally & is generally given IM/IV. Rapidly degraded in liver & kidney, plasma  $t_{1/2}$  6-12 min  
 [1 IU of oxytocin = 2 µg of pure hormone]

BRANDS → OXYTOCIN

SYNTOCINON (2 IU/2ml & 5 IU/ml inj)

PITOCIN (5 IU/.5 ml inj)

### USES -

- 1) **Induction of labour** - in postmaturity or even prematurely in toxæmia of pregnancy ruptured mem. or placental insufficiency.  
 For this, oxytocin is given by slow IV infusion - 5 IU in 500 ml glucose or saline. Usually a dose 2-4 IU is needed.
- 2) **uterine inertia** - When contract<sup>n</sup> is feeble & labour is not progressing satisfactorily.
- 3) **Postpartum haemorrhage / Caesarean section** -  
 Oxytocin 5 IU may be injected IM/IV for immediate response especially in hypertensive women where ERGOMETRINE is contraindicated. It acts by forcefully contracting the uterine muscle, compressing blood vessels passing through its mesh work to arrest haemorrhage from inner surface exposed by placental separation.
- 4) **Breast engorgement** - It occurs due to inefficient 'milk ejection' reflex. Oxytocin is helpful here (but not ↑ milk product<sup>n</sup>). An intranasal spray may be given few minutes before suckling.