Oxytocin (Pitocin)

Oxytocin is a synthetic analog of the hormone produced in the hypothalamus that is stored and released in the posterior pituitary gland. The main functions of this hormone are to stimulate uterine contractions and to initiate milk ejection from the nipple during breastfeeding. It is given to induce labor as well as to control hemorrhage after delivery. This medication should be given in the lowest possible dose due to the increased risk of side effects. This medication should never be administered alone or without confirming cervical ripening in a pregnant patient.



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Mechanism of Action

Increase Uterine Contractions
Up-arrow Uterus Flexing
This medication both begins and increases the strength of uterine contractions by stimulating receptors on the uterine muscle wall. In addition, it also stimulates milk ejection from nipple.

Indications

Labor Induction
Labor Induction-duck
This medication is given in conjunction with cervical ripening medications or after the cervix is ripened to increase and strengthen contractions.

Control Postpartum Hemorrhage
Post-baby with Hemorrhage-hammer
After separation of the placenta, this medication may be indicated to control uterine bleeding as it causes contraction of the uterine wall decreasing blood flow to tissues.

Side Effects

Uterine Rupture
Uterus Rupturing
This medication’s function is to cause uterine contractions, therefore risk of rupturing the uterine wall is possible. uterine rupture happens when the uterus tears open while pregnancy or labor. The muscle contractions this medication causes are very strong. Women with multiparity >5 (more than 5 pregnancies) or any previous uterine scarring are at higher risk due to weakened uterine walls.

Water Intoxication
Water with Toxic-barrels
This medication causes antidiuretic effects on the body and prevents the formation of urine. It is important to continuously monitor urine output while administering this medication.

Contraindications

Fetal Lung Immaturity
Fetus Missing Lungs
This medication should never be given to any patient whose fetus is immature. This would be before 20 weeks of gestation or the determination of fetal lung immaturity via lab tests.

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Cervix Not Ripened

Unripened Cervix fruit

Giving this medication and inducing contractions before cervical ripening may cause fetal or maternal injuries.

Active Genital Herpes Infection

Herpes-harp with Active Infection

Patients with an active genital herpes infection should never be administered this medication. These patients require cesarean delivery due to the high risk of vertical transmission of this TORCH infection.

Considerations

Use Lowest Dose

Using Smallest Needle

Using the lowest dose of this medication prevents many of the side effects. As higher doses are used the strength of contractions are also increased which may cause placental insufficiency. It also increases the risk of water intoxication and uterine rupture.

IV Pump

IV Pump

This medication is destroyed by the gastrointestinal system and must be given IV or IM route. It has a relatively short half life that, when coupled with the potency, requires the use of an IV pump at all times when this medication is administered intravenously.

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