Dinoprostone and Misoprostol

These two medications are prostaglandin medications that both act to ripen the cervix. Dinoprostone (Prepidil, Cervidil) is only used topically as a gel or vaginal insert but Misoprostol (Cytotec) is also used as emergency contraception and to prevent GI ulcers. These medications are utilized to induce abortion or ripen the cervix to induce labor.



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Mechanism

Prostaglandins
P-rasta
Prostaglandins stimulate the contraction and ripening of the cervix to stimulate induction of labor or the induction of abortion. Drugs under this class of medications increase uterine contraction force, frequency, and duration. Dinoprostone is also known as prostaglandin E2 (PGE2), while misoprostol is prostaglandin E1 (PGE1).

Indications

Promote Cervical Ripening
Ripened Cervix Fruit
Cervical ripening and softening is produced by prostaglandins as a result of the breakdown of collagen. Although both dinoprostone and misoprostol are used for cervical ripening, this is an off-label indication for misoprostol.

Prevent GI Ulcers
Extinguishing GI Ulcer-volcano
Misoprostol stimulates the secretion of mucus and bicarbonate, maintains submucosal gastric perfusion (vasodilation), and suppresses the secretion of gastric acid, which protects against NSAID-induced ulcers resulting from long term therapy with the medication. The preventive action of misoprostol is because it serves as a replacement for endogenous prostaglandins.

Medical Abortion
Aborting Fetus
Prostaglandin medications may induce abortion by slowly stimulating uterine contractions to expel the fetus. Misoprostol is often a component of emergency contraception and is usually used in early pregnancy. Generally, it takes 18 hours for the fetus to be expelled after the medication is taken. It is important to note that these medications are not feticidal, and therefore the fetus may emit signs of life following passage.

Side Effects

Fetal Distress
Fetus shooting Flare-gun
When these medications are utilized, it is important to monitor fetal activity and fetal heart rate as the increased intensity in contractions may lead to fetal distress.

Hyperstimulation of Uterus
Hiker-stimulating Uterus
Use of prostaglandins may result in increased stimulation of the uterus, also known as uterine tachysystole. This can result in intense contractions that could cause cervical lacerations.

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Considerations

Vaginal Insertion

Inserting into Vagina-violet

PGE2 medications may be used as a gel or insert. The insert is placed high in the vagina and is usually maintained in the vagina for 12 hours or until the start of active labor. Gels are inserted using a syringe and may be repeated up to 3 times.

Give Before Induction of Labor

Labor Induction-duck

Prostaglandins should be utilized before the induction of labor or initiation of oxytocin. PGE2’s stimulate the softening and ripening of the cervix, which should occur before the induction of labor or use of oxytocin.

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