

Methylergonovine (Methergine) and Ergotamine (Ergot Alkaloids)

Ergot alkaloids, such as methylergonovine, ergotamine, and dihydroergotamine (D.H.E 45) all produce strong-powerful contractions and are used to control postpartum hemorrhage and treat migraines. These medications are generally used as a second line of treatment after the use of oxytocin. Ergotamine and methylergonovine stimulate uterine contractions by exciting adrenergic, dopaminergic, and serotonergic receptors.



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Mechanism

Smooth Muscle Contraction

Smoothie Muscle Contracted

Methylergonovine and ergotamine function by stimulating smooth muscle contraction; therefore, the smooth muscle within the uterus is stimulated causing uterine contraction.

Vasoconstriction

Vase-constrictor

In addition to smooth muscle contraction, methylergonovine and ergotamine produce vasoconstriction. This effect is useful in the treatment of migraines, but may cause severe hypertension.

Indications

Migraine

Mind-rain

Methylergonovine and ergotamine constrict cerebral blood vessels to prevent and treat migraine headaches. This helps decrease migraines because when migraines occur, the cerebral blood vessels dilate.

Postpartum Hemorrhage

Post-baby with Hemorrhage-hammer

Methylergonovine and ergotamine produce powerful contractions and are used in the treatment of postpartum hemorrhage. In postpartum hemorrhage, the uterus usually becomes boggy and is not able to contract properly to stop bleeding. These medications aid in producing contractions to firm the uterus and stop bleeding.

Side Effects

Nausea and Vomiting

Vomiting

Methylergonovine and ergotamine stimulate the muscles within the stomach, resulting in increased gastrointestinal symptoms such as nausea, vomiting, and diarrhea. These side effects are very common.

Severe Hypertension

Severed Hiker-BP

Ergot alkaloids may cause severe hypertension due to the vasoconstrictor effects of these medications. This class of medication should be avoided for patients with preexisting hypertension. In addition, if blood increases too much, tissue perfusion may decrease resulting in ischemia. Be sure to assess for peripheral weakness, tingling of the toes and fingers, and angina.

Tachycardia

Tac-heart-card

Because these medications stimulate adrenergic receptors, the heart rate is likely to increase. Patients administered ergot alkaloids or methylergonovine should be assessed for increased heart rate and cardiac rhythm.

Considerations

2nd Line Agent

2nd-place-tutu Agent

Methylergonovine and ergotamine are used as second line agents because their effects are often delayed. These medications are not recommended for inducing labor due to the delayed onset of contractions and should only be used for postpartum hemorrhage after the use of oxytocin. They are also indicated for only severe migraine headaches as they constrict dilated blood vessels.