Promethazine (Phenergan)

Promethazine (Phenergan) is an H1 receptor antagonist, and a weak dopamine antagonist that competes with histamine-1 and dopamine-2 receptors in the chemoreceptor trigger zone of the brain to decrease nausea, vomiting, and motion sickness. Side effects include respiratory depression, sedation, dry mouth, urinary retention, and extrapyramidal symptoms, such as dystonia, akathisia, and parkinsonism. This medication should not be given to children under the age of two, due to increased risk of death, related to severe respiratory depression. Keep in mind, if promethazine must be given intravenously, it should be administered through a large bore IV with a flow rate to prevent tissue necrosis. Extravasation can lead to serious complications, such as abscess formation and gangrene that requires amputation.



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Mechanism

Histamine H1 Receptor Antagonist

History-man with (1) Wand in Ant-toga

Promethazine competes with histamine at histamine-1 receptor sites throughout the body. The medication’s antiemetic property is likely related to its effect in the chemoreceptor trigger zone of the brain. Assess for orthostatic hypotension.

Weak Dopamine Antagonist

Weak Doberman in Ant-toga

Promethazine also functions as a weak dopamine antagonist, blocking dopamine-2 receptors in the chemoreceptor trigger zone, thus decreasing nausea and vomiting. Be sure to assess for neuroleptic malignant syndrome (NMS) due to this medication's dopamine antagonist properties.

Indications

Nausea and Vomiting

Vomiting

This medication is indicated in the treatment of nausea and vomiting related to chemotherapy and surgical procedures.

Motion Sickness

Sea-sick

Promethazine may also be prescribed to treat motion sickness.

Side Effects

Respiratory Depression

Deflated Lungs

This medication can cause severe respiratory depression and should not be used in children under the age of two.

Sedation

Sedation-dart

Sedation, CNS depression, and fatigue are side effects associated with promethazine. Patients should be advised to avoid hazardous activities, such as driving while taking this medication. Effects may be potentiated when used with other sedative drugs or ethanol. Use with caution in disorders where CNS depression is a feature

Anticholinergic Effects

Ant-tie-cola

Patients may also experience anticholinergic effects, such as constipation, xerostomia, blurred vision, urinary retention The patient should be encouraged to void before taking this medication. They should be used with caution in patients with decreased gastrointestinal motility, urinary retention, BPH, xerostomia, or visual problems.

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Extrapyramidal Symptoms

X-pyramid

Movement disorders or extrapyramidal effects can be induced by promethazine. Patients may develop muscle spasms or contractions, restlessness, bradykinesia, and tremor.

Considerations

Use Large Bore IV

Large Bore IV

If extravasation occurs during intravenous administration, promethazine can cause tissue death and abscess formation. To ensure patient safety, this medication should be administered through a large bore IV, at a rate of no more than 25 mg/min. Patients should be encouraged to report pain or burning during IV administration.

Monitor for Tissue Necrosis

Monitor Tissue-box Necrosis-crow

When given via IV push, patients receiving promethazine should be closely monitored for signs of tissue necrosis. This is because this medication is also toxic to the innermost coating of blood vessels and surrounding connective tissue.

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