Class

Antidysrhythmic

Pharmacologic properties

Adenosine is an endogenous purine nucleoside that slows conduction time through the AV node and interrupts AV reentry pathways which restores normal sinus rhythm in patients with paroxysmal supraventricular tachycardia (PSVT). The onset of action is 20-30 seconds and the duration of action is < 10 seconds.

Indications

- Symptomatic PSVT with ECG showing rates between 150-230 narrow QRS complexes.
  - Adult – Regular, narrow complex tachycardia ≥ 150 Protocol 9.
  - Child – Regular, narrow complex tachycardia ≥ 180 Protocol 9P.
  - Infant – Regular, narrow complex tachycardia ≥ 220 Protocol 9P.
- Used as a diagnostic tool for stable, regular, monomorphic QRS complex tachycardias Protocol 9, Protocol 9P.
- Halogenated/Aromatic Hydrocarbon & Gasoline Exposures causing sensitized myocardial tissue presenting with a regular, narrow complex tachycardia with a rate ≥ 150 Protocol 25.

Contraindications

- Known hypersensitivity
- 2nd or 3rd degree AV block
- Sick sinus syndrome

Precautions

- Effects of adenosine are antagonized by methylxanthine (theophylline and caffeine)
- Adenosine can provoke bronchospasm and should be used cautiously in patients with reactive airway disease
- Adenosine is not effective in converting atrial fibrillation or flutter
- The half-life of adenosine is < 5 seconds - the drug should be administered via a large bore IV in the upper extremity, and at the port closest to the IV hub
- Never administer doses greater than 6 mg via external jugular vein.

Side Effects/Adverse Reactions

- Cardiovascular- transient chest pain
- Facial flushing (transient)
- Respiratory- transient dyspnea
- Metallic taste

Dosage and Administration

Adult

- 6 mg rapid IVP (administered over a 1-2 second period) through a large-bore catheter (preferably in the antecubital) followed by a 20 mL rapid flush.
    - A second bolus of 12 mg rapid IVP may be administered after 1-2 minutes if the PSVT is not eliminated.
    - Never administer doses greater than 6 mg via external jugular vein.

Pediatric

- 0.1 mg/kg rapid IVP (MAX 6 mg) followed by a 5-10 mL rapid flush.
    - A second bolus of 0.2 mg/kg rapid IVP (MAX 12 mg) followed by a 5-10 mL rapid flush may be administered after 1-2 minutes if the PSVT is not eliminated.