Medical Control Guideline: DRUG REFERENCE – ADENOSINE

Classification
Antidysrhythmic

Prehospital Indications
Cardiac Dysrhythmia:
   SVT - Narrow Complex: HR ≥ 150 for adults; ≥180 for a child; and ≥220 for infants
     Perfusing unresponsive to Valsalva
     Alert patients with poor perfusion
   Regular/Monomorphic Wide Complex Tachycardia
     Adequate perfusion
     Alert patients with poor perfusion

Other Common Indications
   Used in hospital setting as part of drug combination for cardiac “stress testing” and diagnosis of pulmonary hypertension

Adult Dose
   6 or 12mg rapid IVP (per protocol), within 1-3 seconds, followed by a rapid flush of 10mL of NS
   If no conversion after 1-2 minutes, may repeat 12mg rapid IVP followed by rapid flush of 10mL of NS.

Pediatric Dose
   0.1mg/kg (3mg/mL) rapid IVP, dose per MCG 1309, maximum 6mg, followed by a rapid flush of 10mL NS
   If no conversion after 1-2 minutes, may repeat one time 0.2mg/kg (3mg/mL) followed by a rapid flush of 10mL NS, dose per MCG 1309, maximum 12mg

Mechanism of Action
   Slows conduction through the AV node and interrupts AV reentry pathways as well as conduction through the sinoatrial (SA) nodes

Pharmacokinetics
   Onset immediate, Duration < 10 secs

Contraindications
   Should not be used for sinus tachycardia, despite rate >150
   2nd and 3rd degree heart block without pacemaker
   Sinus Node Disease ( Sick Sinus Syndrome)
   Wolff-Parkinson-White (WPW) Syndrome or ECG consistent with WPW
   Atrial flutter or fibrillation
   Heart transplant – Base contact required, as noted “super-sensitivity” of transplanted heart to adenosine

Interactions
   Potentiated by blocker of nucleoside transport [e.g., carbamazepine (Tegretol)]
   Antagonized by methylxanthines such as caffeine and theophylline

Adverse Effects
   Blurred vision
   Bradycardia / Asystole
   Chest pain / Chest pressure
   Dyspnea
   Head pressure
   Hypotension
   Lightheadedness / Dizziness
   Metallic taste / Throat tightness
   Numbness / Tingling
   Palpitations
Prehospital Considerations

- Cannulate a large proximal vein with an 18-20g catheter. Use IV port closest to patient and immediately flush with 10mL Normal Saline to ensure rapid administration of drug.
- Run a 6 second ECG strip before, during and after drug administration.
- Patients usually have a 10 second period of escape beats or asystole before the sinus node starts up again. This is perceived as a feeling of impending death and can be extremely frightening for patients.
- If the wide-complex tachycardia is ventricular in origin, Adenosine is highly unlikely to cause successful cardioversion.