Medical Control Guideline: DRUG REFERENCE – ADENOSINE **Ref. No. 1317.1**

Classification

Antidysrthythmic

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 first dose 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 second dose12mg

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

Sinus tachycardia or atrial fibrillation/flutter, despite rate >150

2nd and 3rd degree heart block without pacemaker

Wolff-Parkinson-White (WPW) Syndrome and atrial fibrillation (wide-complex, irregular rhythm)

Sinus Node Disease (Sick Sinus Syndrome)

Heart transplant

Use of carbamazepine (Tegretol) for seizure disorder

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.