

## A. Adenosine (Adenocard®)

- I. Classification
  - Antidysrhythmic agent
- II. Actions
  - Depresses automaticity in the sinus node
  - Suppresses AV conduction
- III. Indications
  - Perfusing PSVT unresponsive to Valsalva
  - Poorly perfusing PSVT in a conscious patient
- IV. Contraindications
  - A. History of Sick Sinus Syndrome
  - B. Second degree type II or third degree heart block
  - C. Asthma patients
- V. Adverse Effects
  - A. Cardiovascular
    - Bradycardia/asystole**
    - Second/third degree blocks**
    - Chest pain/pressure*
    - Hypotension*
    - PACs/PVCs*
  - B. Neurological
    - Seizures**
    - Headache
    - Blurred vision
    - Tingling/numbness
    - Light-headedness
    - Dizziness
  - C. Respiratory
    - Dyspnea/shortness of breath
    - Bronchoconstriction in asthmatic patients**
  - D. Gastrointestinal
    - Nausea*
    - Metallic taste
  - E. General
    - Flushed skin
    - Throat tightness
- VI. Administration
  - A. Adult:
    - 6 or 12 mg **rapid IVP**, within 1-3 seconds, followed by rapid flush of 10-20 ml NS.
    - Patients known to be taking Persantine® (dipyridamole) or Tegretol® (carbamazepine) receive half of the normal dose (3 or 6 mg).

- B. Pediatric [by on-line MD order only]:  
0.1 mg/kg **rapid IVP** within 1-3 seconds, followed by rapid flush of 10 ml NS. May repeat  
0.2 mg/kg IVP in 1-2 minutes one time.

VII. Onset

- Immediate

VIII. Duration

- Less than 10 seconds

IX. Precautions

Adenosine is metabolized in less than 10 seconds. In order to ensure rapid administration into central circulation:

- A. Cannulate a large vein (antecubital fossa) using an 18g-20g catheter.
- B. Use the IV port closest to patient and immediately flush with 10-20 ml NS to ensure drug is administered as rapidly as possible.

X. Notes

- A. It is important to evaluate patient response and document rhythms for follow up care. Monitor patient and run a continuous strip before, during and after administration of adenosine to document the effect of the drug.
- B. Patients often have a 10 second period of escape beats or asystole before the sinus node starts up again.
- C. Adverse effects of chest pain, hypotension or shortness of breath will resolve spontaneously within 1-2 minutes.
- D. Adenosine will not convert sinus tachycardia, atrial flutter or atrial fibrillation to a normal sinus rhythm, but may cause a transient slowing of the heart rate in atrial fibrillation with a rapid ventricular response.
- E. Persantine and Tegretol potentiate the actions of adenosine, which may result in second/third degree blocks.
- F. Theophylline and xanthine preparations as well as caffeine, may render adenosine ineffective.
- G. Signs/symptoms of poor perfusion includes: chest pain, shortness of breath, altered level of consciousness, and hypotension.
- H. Definition of paroxysmal supraventricular tachycardia (PSVT): A supraventricular rhythm caused by rapid atrial depolarization, which overrides the SA node. Characterized by a sudden onset and abrupt termination, which is determined by the patient's history. The rhythm is regular with narrow complexes and a rate > 150 beats/minute (pediatric patients >220 beats/minute) and may last from minutes to hours.