Supraventricular Tachycardia (SVT)

Signs and Symptoms

- Heart rate: Adult > 150bpm
  Child > 180bpm
  Infant > 220bpm
- QRS < 0.12 sec
- Dizziness/syncope
- Chest pain
- Shortness of breath
- Palpitations
- Altered mental status

History

- Medications:
  - Diet pills
  - Thyroid medication
  - Decongestants
  - Digoxin
- Stimulant use
  - Caffeine
  - Cocaine
  - Amphetamine
- Recent exertion
- History of SVT or other dysrhythmia
- History of palpitations

Differential

- Sinus tachycardia
- Atrial fibrillation/flutter
- Multifocal atrial tachycardia
- WPW
- Vtach
- Sick sinus syndrome
- Myocardial infarction
- Electrolyte imbalance
- Fever, pain, anxiety
- Hypovelemia
- Drug effect/overdose
- Hyperthyroidism
- Pulmonary Embolus

WARNINGS

! *Do not administer* **Metoprolol (Lopressor®)** if SBP is less than 90 mmHg, heart rate less than 60 bpm, rales, presence of 2nd or 3rd degree heart block. Use caution if history of Asthma or COPD.

Care: Adults and Pediatrics

I P

Follow general directive #3, Orders for all Patients.

I P

Establish an IV of **Normal Saline** and infuse at a rate of KVO. Initiate cardiac monitoring and acquire 12 lead EKG.

Is patient unstable? ("Pre-arrest" with Decreased level of consciousness or hypotension/poor perfusion)

No

Is A-Fib/ A-Flutter suspected?

No

I P

Have the patient attempt Valsalva maneuver.

Adenosine (Adenocard®) 0.1mg/kg up to 6 mg fast IV immediately followed by a 10 to 20 ml bolus.

If the SVT rhythm does not convert in 1 min, administer **Adenosine (Adenocard®)** 0.2mg/kg up to 12 mg FAST IV.

If there is still no conversion in 1 min., repeat previous dose **Adenosine (Adenocard®)** FAST IV one time.

Yes

Adults only

I P

Control rate administering **Metoprolol (Lopressor®)** 5 mg slow IVP over 2 min. **Goal:** heart rate < 100 and maintain SBP > 90 (Consult Medical Control for additional doses or for pediatrics).

Yes

I P

Consider (if not A-Fib or AFlutter) **Adenosine (Adenocard®)** treatment while preparing for synchronized cardioversion.

(I) (P)

Administer **Midazolam (Versed®)** 0.05mg/kg up to 2.5mg IV if the patient is conscious.

(I) (P)

Deliver synchronized cardioversion 0.5J/kg then 1-2J/kg PRN Adults use 100J, 200J, 300J then 360J PRN.

Perform 12 Lead ECG after conversion.

Pearls

- Monitor for respiratory depression and hypotension associated with **Midazolam (Versed®)**.
- Continuous pulse oximetry and cardiac monitoring is required when available for all SVT patients.
- Record a rhythm strip during administration of **Adenosine (Adenocard®)** when practical.
- With markedly elevated heart rates, it may be difficult to distinguish SVT from a-fib/flutter.
- **Adenosine (Adenocard®)** may briefly slow afib or a-flutter to allow rhythm recognition.
- Patients with sinus tachycardia may benefit from a fluid bolus or pain management as indicated.
- Consult medical control ***prior to*** sedation or cardioversion for Afib/SVT to verify appropriateness (note this is different from approach to unstable VTach)
- Immediate administration of a 10 to 20 ml fluid bolus following each dose of **Adenosine (Adenocard®)** is key to ensuring the medication's effectiveness.

Performance Indicators

- Document all rhythm changes with monitor strips and obtain monitor strips with each therapy.
- Goal is normalization of HR while maintaining adequate BP.