

# Protocol 8-4

**SECTION:** Pediatric Cardiovascular Emergencies

**PROTOCOL TITLE:** Medical – Supraventricular Tachycardia  
(including atrial fibrillation)  
Medical – Tachycardia  
Medical – Ventricular Tachycardia with a Pulse

**REVISED:** 06/2017

**OVERVIEW:**

Tachycardia is an abnormally fast rhythm of the heart. It is most commonly caused by a reentry mechanism that involves an accessory pathway or the AV conduction system. SVT is the most common tachyarrhythmia producing cardiovascular compromise during infancy.

HPI	Signs and Symptoms	Considerations
<ul style="list-style-type: none"> <li>Past medical history</li> <li>Medications, toxin ingestion (aminophylline, diet pills, thyroid supplements, decongestants, digoxin)</li> <li>Drugs (nicotine, cocaine)</li> <li>Respiratory distress</li> <li>Congenital heart disease</li> <li>Syncope, near syncope</li> </ul>	<ul style="list-style-type: none"> <li>Heart rate:               <ul style="list-style-type: none"> <li>Child &gt; 180 / min</li> <li>Infant &gt; 220 / min</li> </ul> </li> <li>QRS &lt; 0.08 seconds</li> <li>Pale or cyanosis</li> <li>Diaphoresis</li> <li>Tachypnea</li> <li>Vomiting</li> <li>Hypotension</li> <li>Altered mental status</li> <li>Pulmonary congestion</li> <li>Syncope</li> </ul>	<ul style="list-style-type: none"> <li>Heart disease (congenital)</li> <li>Hypo / hyperthermia</li> <li>Hypovolemia</li> <li>Anemia</li> <li>Electrolyte imbalance</li> <li>Anxiety, pain, emotional stress</li> <li>Fever, infection, sepsis</li> <li>Hypoxia</li> <li>Hypoglycemia</li> <li>Medication, toxin, drugs</li> <li>Pulmonary embolus</li> <li>Trauma</li> </ul>

**Infant Dosing Chart:**

Age	Term	6 months
<b>Weight (lb / kg)</b>	6.6 lb 3 kg	17.6 lb 8 kg
<b>Defibrillation 2 joules / kg</b>	6 joules	16 joules
<b>Defibrillation 4 joules / kg</b>	12 joules	32 joules
<b>Epinephrine 1:10,000 (1 mg / 10 ml) 0.01 mg / kg</b>	0.03 mg	0.08mg
<b>Amiodarone 5 mg / kg</b>	15 mg	40 mg
<b>Magnesium Sulfate 25 - 50 mg / kg</b>	75 mg	200 mg

**TACHYCARDIA WITH A PULSE**

# TACHYCARDIA WITH A PULSE

Age	1 years	3 years	6 years	8 years	10 years	12 years	14 years
Weight (lb / kg)	22 lb 10 kg	30.8 lb 14 kg	44 lb 20 kg	55 lb 25 kg	75 lb 34 kg	88 lb 40 kg	110 lb 50 kg
Defibrillation 2 joules / kg	20 joules	28 joules	40 joules	50 joules	68 joules	80 joules	100 joules
Defibrillation 4 joules / kg	40 joules	56 joules	80 joules	100 joules	136 joules	160 joules	200 joules
Epinephrine 1:10,000 (1 mg / 10 ml) 0.01 mg / kg	0.1 mg	0.14 mg	0.2 mg	0.25 mg	0.34 mg	0.4 mg	0.5 mg
Amiodarone 5 mg / kg	50 mg	70 mg	100 mg	125 mg	170 mg	200 mg	250 mg
Magnesium Sulfate 25 - 50 mg / kg	250 mg	350 mg	500 mg	625 mg	850 mg	1 gm	1.25 gm

### Amiodarone Drip

(5 mg / kg over 40 minutes)

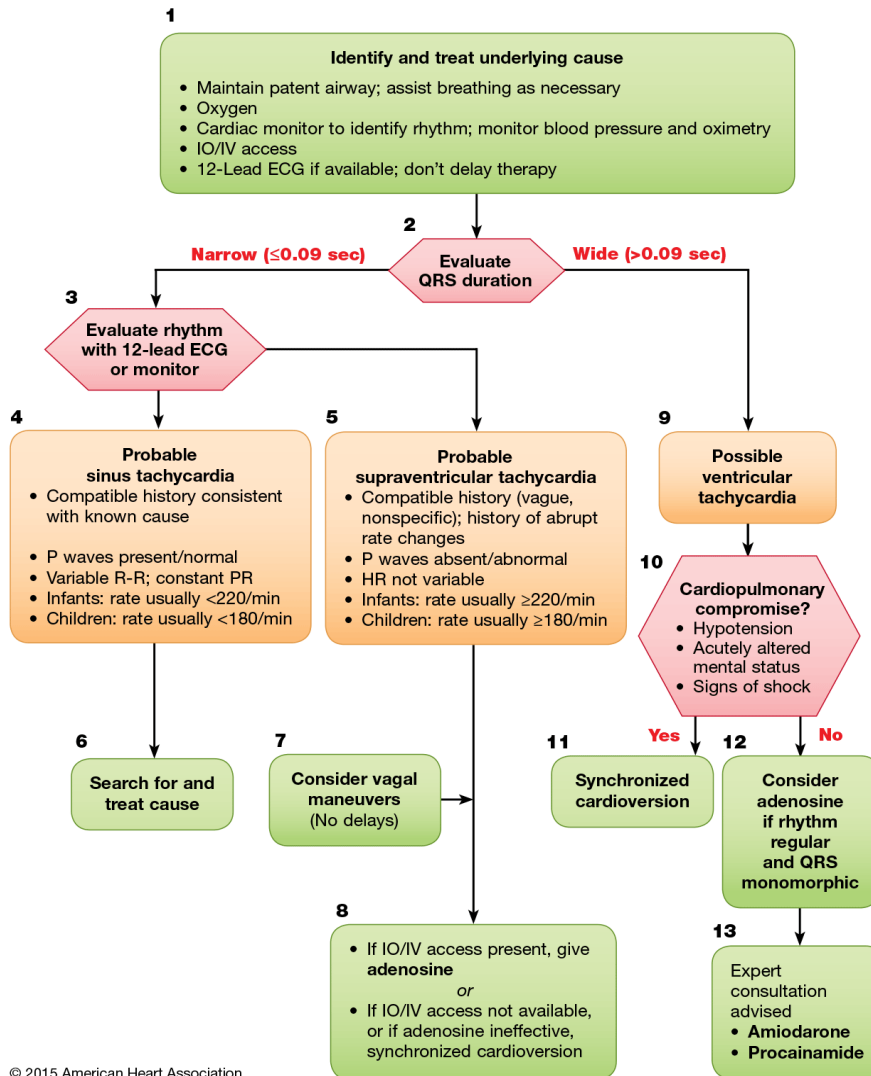
**Dilute** calculated volume of **Amiodarone in 50 ml D<sub>5</sub>W**

Using a 60 gtts / mL administration set, flow infusion at 60 gtts.  
(1 mL / min, 1 gtt / sec)

### PEARLS:

- SVT is often diagnosed in infants because of symptoms of congestive heart failure. SVT usually presents differently in older children. Common signs and symptoms of SVT in infants include: poor feeding, rapid breathing, irritability, unusual sleepiness, pale or blue skin color, and vomiting. SVT is initially well tolerated in most infants and older children. It can, however, lead to heart failure and clinical evidence of shock, particularly if baseline myocardial function is impaired by congenital heart disease or cardiomyopathy. It can ultimately cause cardiovascular collapse.
- Approved vagal maneuvers include coughing, bearing down as if attempting a bowel movement. **Carotid sinus massage and / or ocular massage is not approved.**

## Pediatric Tachycardia With a Pulse and Poor Perfusion Algorithm



Doses/Details
<b>Synchronized Cardioversion</b>
Begin with 0.5-1 J/kg; if not effective, increase to 2 J/kg. Sedate if needed, but don't delay cardioversion.
Drug Therapy
<b>Adenosine IO/IV dose:</b> First dose: 0.1 mg/kg rapid bolus (maximum: 6 mg). Second dose: 0.2 mg/kg rapid bolus (maximum second dose: 12 mg).
<b>Amiodarone IO/IV dose:</b> 5 mg/kg over 20-60 minutes or <b>Procainamide IO/IV dose:</b> 15 mg/kg over 30-60 minutes
Do not routinely administer amiodarone and procainamide together.

Protocol

8-4

Continued

**TACHYCARDIA WITH A PULSE**

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