

SECTION: PC-3

PROTOCOL TITLE: PEDIATRIC TACHYCARDIA

REVISED: October 15, 2014

BLS SPECIFIC CARE: See General Pediatric Care Protocol PM-1

- Determine patient's color category on length based resuscitation tape (Broselow Tape if available)

ILS SPECIFIC CARE: See General Pediatric Care Protocol PM-1

ALS SPECIFIC CARE: See General Pediatric Care Protocol PM-1

- Support airway/breathing and apply oxygen as needed
- Apply monitor and assess rhythm/rate (Normal rate <180 children; <220 infant)
- Obtain 12- Lead EKG if possible
- Consider underlying causes and treat as well
- See Protocol M-15 for sedation prior to cardioversion

Narrow Complex Tachycardia (Supraventricular, QRS \leq 0.09 sec, and regular):

If **UNSTABLE** (poor perfusion, AMS, CHF): Obtain vascular access and plan for synchronized cardioversion:

- Synchronized cardioversion:
 - Initial energy setting of 0.5 - 1J/kg or as per manufacturer's recommendations
 - Deliver subsequent shocks, as needed, at 2 J/kg or as per manufacturer's recommendations
- Repeat 12-Lead EKG after successful cardioversion

If **STABLE**:

- Vagal Maneuvers
- Adenosine
 - IV or IO: First dose: 0.1 mg/kg (max: 6 mg)
 - Subsequent doses: 0.2 mg/kg, (max: 12 mg). Repeat x1
- If unsuccessful, yet stable:
- Amiodarone
 - IV or IO: 5 mg/kg over 20-60 min (max 150mg)
- If still unsuccessful, yet stable, contact medical control for further instructions. If unstable, proceed to synchronized cardioversion
- Repeat 12-Lead EKG if rhythm converts

Wide Complex Tachycardia (QRS \geq 0.09sec, Variable R-R)

If **UNSTABLE** (*poor perfusion, AMS, CHF*): Obtain vascular access and plan for synchronized cardioversion:

- *Synchronized* cardioversion:
 - Initial energy setting of 0.5 – 1 J/kg or as per manufacturer's recommendations
 - Deliver subsequent shocks, as needed, at 2 J/kg or as per manufacturer's recommendations
 - If unable to obtain synchronization with QRS complexes, (as with torsades de pointes) proceed with **unsynchronized** cardioversion as detailed below
 -
- *Unsynchronized* cardioversion
 - For unstable polymorphic VT
 - Initial energy setting of 2 J/kg or as per manufacturer's recommendations
 - Deliver subsequent shocks, as needed, at 4 J/kg or as per manufacturer's recommendations

If **STABLE**:

- Amiodarone
 - IV or IO: 5 mg/kg over 20-60 min (max 150mg)
- OR
- Lidocaine
 - IV or IO: 1 mg/kg slow IV
 - Repeat 10-15 minutes x2 to a max dose of 3 mg/kg
- Magnesium sulfate (polymorphic ventricular tachycardia)
 - IV or IO: 25-50mg/kg (max 2g) over 10 minutes
 - Rapid administration can cause hypotension and respiratory compromise; monitor carefully
 - First line agent for hemodynamically STABLE polymorphic VT (torsades de pointes)
- Repeat 12-Lead EKG if rhythm converts.
- If unsuccessful, yet stable, contact medical control for further instructions. If unstable, proceed to synchronized cardioversion.

PHYSICIAN PEARLS:

- **Amiodarone is contraindicated if the patient is suspected of a TCA overdose.** This also applies to other drugs that widen the QRS

Use of a vagal maneuver may be useful in determining type of rhythm.

QRS Width:

≤ 0.09 seconds –probable Sinus Tachycardia or Supraventricular Tachycardia

≥ 0.09 seconds –probable Ventricular Tachycardia

Rate: (rates less than 180 BPM in a child, or 220 infant are usually secondary to other non-cardiac causes)

Probable Sinus Tach:

< 180 in Children or < 220 BPM in Infants

P-waves present and regular

Constant PR interval

Variability of R-R

Probable SVT:

> 180 in Children or > 220 BPM in Infants

P-waves absent/abnormal

Regular R-R and HR doesn't vary

Probable VT:

> 180 in Children or > 220 BPM in Infants

Wide QRS

Regular HR

Protocol
PC-3

PED TACHYCARDIA