Protocol
PC-03

SECTION: PC-03

PROTOCOL TITLE: PEDIATRIC TACHYCARDIA

REVISED: November 1, 2017

PED TACHYCARDIA

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

- Determine patient's color category on length based resuscitation tape (ACCESS Pediatric Tape)

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 ≤ 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

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Wide Complex Tachycardia (QRS ≥ 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
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- *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.

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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

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