


DYSRHYTHMIAS: TACHYCARDIA – PEDIATRIC

APPROVED:



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Information Needed:

- Onset and duration of symptoms, fluid loss, fever, nausea, vomiting, diaper changes, trauma, AMS, neurological baseline
- History of previous diagnosis, etiology, or cardiac disease; previous episodes, previous treatment required, medications currently prescribed
- Preceding symptoms, dizziness, syncope, chest pain, palpitations or other chief complaint
- Utilize the Broselow Tape to measure length and then SMC Pediatric Reference Card for determination of drug dosages, fluid volumes, defibrillation/cardioversion joules and appropriate equipment sizes.

Objective Findings:

- Assess rhythm as tachycardia and determine if any of the following signs of instability are present:
 - Hypoperfusion
 - Hypotension
 - Respiratory difficulty
 - Altered mental status

Sinus Tachycardia

Infants: rate usually less than 220 bpm

Children: rate usually less than 180 bpm

Heart rate often varies with activity. History is usually consistent with hypovolemia (eg. dehydration or hemorrhage) but may be associated with hyperthermia or pain.

Treatment:

- Routine medical care
- For unstable patients: deliver high flow O2 via non-rebreather mask. Consider BVM with 100% oxygen
- Regular assessment of vital signs and signs of perfusion
- Establish IV/IO

- Give IV/IO fluid bolus of NS. Reassess. May repeat two times as indicated
Contact Pediatric Base Hospital Physician for additional fluid orders
- Treat underlying cause as appropriate

Supraventricular Tachycardia (Narrow Complex)

Infants: rate usually greater than 220 bpm:

Children: rate usually greater than 180 bpm.

Heart rate is regular and does not vary with activity.

Treatment:

- High flow oxygen
- Regular assessment of vital signs and signs of perfusion
- Attempt vagal maneuvers without delay
- Reassess
- For stable patients:
 - Establish IV/IO (IV is preferred)
 - Repeat vagal maneuvers as indicated
 - Monitor closely for signs of hypoperfusion
- For patients with signs of hypoperfusion and IV access established:
 - Give adenosine rapid IV push and immediately flush with 5-10 ml NS
 - If dysrhythmia persists, repeat adenosine at double initial dosage rapid IV push and immediately flush with 5-10 ml NS
 - If dysrhythmia persists, immediate synchronized cardioversion.
- For patients with signs of hypoperfusion and IV access not established:
 - Immediate synchronized cardioversion. Reassess, may repeat cardioversion once at double initial joules if necessary
 - Do not delay cardioversion to establish venous access
 - Consider precardioversion administration of midazolam, but only if it does not delay cardioversion. Be prepared to support ventilations and oxygenation

Ventricular Tachycardia (Wide Complex with Pulses)

Heart rate usually greater than 120, regular, with wide QRS interval (>0.08 seconds)

Treatment:

- Routine medical care
- High flow oxygen
- Regular assessment of vital signs and signs of perfusion
- For stable patients:
 - Establish IV/IO
 - Monitor closely for signs of hypoperfusion
- For patients with signs of hypoperfusion whether IV/IO access no established:
 - Immediate synchronized cardioversion. Reassess, may repeat cardioversion once at double initial joules if necessary
 - Do not delay cardioversion to establish venous access

- Consider precardioversion administration of midazolam, but only if it does not delay cardioversion. Be prepared to support ventilations and oxygenation
- Establish IV/IO

Precautions and Comments:

- IO administration of adenosine has been shown to be ineffective in recent studies and cardioversion should not be delayed.
- When giving midazolam (Versed®) prior to cardioversion DO NOT USE THE DOSAGES LISTED ON THE BROSELOW TAPE as they are high doses indicated for induction. Use doses from the SMC Pediatric Reference Card.
- If available cardioversion/defibrillator will not dial down to appropriate energy setting, use lowest possible energy level on the defibrillator.
- When defibrillating/cardioverting patients ≤ 10 kg weight (GRAY, PINK, and RED color zones), use “pediatric” pads”. Optimal placement of pads in this age group is anterior-posterior placement (one pad over the heart, the other on the back).
- When defibrillating/cardioverting patients ≥ 10 kg weight (PURPLES through GREEN color zones), use “adult” pads with standard placement or follow manufacturers directions for hands free defibrillation.
- VAGAL MANUEVERS
 - Infants and small children: use ice/cold pack and applied to the entire face. Use care not to obstruct ventilation or apply ocular pressure.
 - Older children: use standard vagal maneuvers such as breath holding, coughing, or blowing into syringe