Pediatric Tachycardia

This protocol is for paramedic use only

Aliases: Supraventricular tachycardia (SVT), atrial fibrillation (a-fib), atrial flutter, ventricular tachycardia (V-tach)

This protocol is intended for symptomatic pediatric patients with elevated heart rate, relative to their age. Refer to MI-MEDIC for appropriate vital signs and medication doses.

I. General Treatment
- A. Pediatric patients (≤ 14 years of age) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
- B. Follow **1.1 General Pre-Hospital Care-Treatment Protocol.**
- C. Determine if patient is stable or unstable.
- D. Manage airway as necessary.
- E. Provide supplemental oxygen as needed to maintain O2 saturation > 94%.
- F. Initiate monitoring.
- G. Perform 12-lead ECG but do not delay care for 12-lead ECG on unstable patients. Refer to **7.1 12 Lead ECG Protocol.**
- H. Establish vascular access, see **7.23 Vascular Access and IV Fluid Therapy.**
- I. Identify and treat underlying causes of tachycardia such as dehydration, fever, vomiting, sepsis and pain.
- J. Administer **NS** or **LR** bolus 20ml/kg with possible hypovolemia.
- K. Consider the following additional therapies if specific dysrhythmias are recognized:

II. **UNSTABLE**
- A. Regular Narrow Complex Tachycardia – Unstable
  - i. Prepare for immediate cardioversion. In conscious patients consider sedation prior to electrical cardioversion. Refer to **7.17 Patient Procedural Sedation-Procedure Protocol.**
  - ii. Deliver a synchronized shock; 1 J/kg for the first dose
  - iii. Repeat doses should be 2 J/kg
  - iv. DO NOT EXCEED ADULT DOSING.
- B. Regular, Wide Complex Tachycardia – Unstable
  - i. Prepare for immediate cardioversion. In conscious patients consider sedation prior to electrical cardioversion. Refer to **7.17 Patient Procedural Sedation-Procedure Protocol.**
  - ii. Synchronized cardioversion 1 J/kg
  - iii. For recurrent or refractory wide complex – unstable tachycardia, consult Medical Control prior to medication administration (medication per MCA selection)

Per MCA Selection

☐ Amiodarone 5 mg/kg (max single dose 300 mg) IV/IO (May repeat twice). Do not exceed 450 mg total IV/IO

or

☒ Lidocaine 1 mg/kg IV/IO (May repeat 0.5 mg/kg twice at 5-10 minute intervals). Maximum 3 doses total

C. Irregular, Wide Complex Tachycardia – Unstable
   i. Defibrillate according to **7.8 Electrical Therapy Procedure**
   ii. Refer to **6.1 Pediatric General Cardiac Arrest Protocol**

D. If able to convert tachycardia, maintain full cardiac monitoring including pulse oximetry and supportive care until transfer of care at the receiving facility.

III. **STABLE**

A. Regular Narrow Complex Tachycardia – Stable (SVT)
   i. Perform vagal maneuvers
      1. Ensure the patient is on oxygen and on a cardiac monitor.
      2. Run ECG strip during the procedure.
      3. If child is able to follow instructions:
         a. Blow into a into a 10 mL syringe for 15 seconds
         b. Squat and bear down
      4. If child is not able to follow instructions:
         a. While supine elevate the patient's legs to the knee chest position for 60 seconds.
         b. If available consider quickly placing a bag of ice on the eyes and forehead. Do NOT occlude the nose or place below the bridge of the nose.
            i. Results are generally seen within 15 seconds.
            ii. This is not an ongoing intervention, it is an abrubt maneuver not be maintained for more than 15 seconds.
      5. DO NOT USE CAROTID MASSAGE.

   ii. Contact Medical Control prior to administration. Administer **adenosine** according to MI MEDIC cards if vagal maneuvers are ineffective**.**
      1. If MI MEDIC cards are not available administer **adenosine**
         a. 0.1 mg/kg (max of 6 mg) rapid IV push through the most proximal injection site, immediately followed by a 10 mL flush.
         b. May repeat once with 0.2 mg/kg (max of 12 mg) administered as above.

B. Regular, Wide Complex Monomorphic QRS Tachycardia – Stable
   i. Contact Medical Control
   ii. Consider **adenosine** per MI MEDIC cards.
      1. If MI MEDIC cards are not available administer **adenosine**
         a. 0.1 mg/kg (max of 6 mg) rapid IV push through the most proximal injection site, immediately followed by a 10 mL flush.
         b. May repeat once with 0.2 mg/kg (max of 12 mg) administered as above.

Medication References
Adensoine
Amiodarone
Lidocaine

Protocol Source/Reference: Michigan 6.3 Pediatric Tachycardia; Version 1/27/23