Cardiac Dysrhythmias (Tachycardia) – 10.061

Treat per Universal Patient Care

Are signs or symptoms of poor perfusion caused by the dysrhythmia present? (Altered mental status, ischemic chest discomfort, acute heart failure, hypotension or other signs of shock)
Rate related symptoms uncommon if HR<150 bpm. Consider other causes.

No – Pt Stable. Obtain 12-lead ECG

Narrow regular QRS (< 0.12 sec)
- Attempt vagal maneuvers
- **Adenosine** 6 mg rapid IV
- **Adenosine** 12 mg rapid IV

Irregular
- Consider:
  - Atrial fibrillation/flutter
  - Multifocal atrial tachycardia
  - **Diltiazem** 0.25 mg/kg IV over 2 minutes. Repeat prn with 0.35 mg/kg IV over 2 minutes.

Wide regular QRS (> 0.12 sec)
- **Amiodarone** 150 mg IV over 10 min or **Lidocaine** 1-1.5 mg/kg IV
- **Amiodarone** 150 mg IV over 10 min OR **Lidocaine** 0.5 - 0.75 mg/kg IV every 5 min to max of 3 mg/kg.
- If Torsades
  - **Magnesium Sulfate** 1-2 grams in 10 ml NS IV over 5 minutes

Yes – Pt Unstable

- **Immediate synchronized cardioversion**
- If pt is conscious consider sedation with **Midazolam** 2.5 mg IV/IO/IN, may repeat once. Do not delay cardioversion.
- Repeat synchronized cardioversions x 3 if no change in rhythm

Obtain post treatment 12-lead ECG
- Contact OLMC for advice
- Consider contributing factors and other treatments
Cardiac Dysrhythmias (Tachycardia)

**PEDIATRIC PATIENTS:**

Treat per Universal Patient Care

Are signs or symptoms of poor perfusion caused by the dysrhythmia present?

No – Pt Stable. Obtain 12-lead ECG

- Narrow regular QRS (< 0.12 sec) HR > 220 child < 2
- HR > 180 child 2-10
- Probable SVT

- Attempt vagal maneuvers
  - Ice water to face children <6 y.o.
  - Valsalva in older children

- Adenosine 0.1 mg/kg rapid IV

- Adenosine 0.2 mg/kg rapid IV

- Consider:
  - Atrial fib
  - Atrial flutter
  - Multifocal atrial tachycardia

- Wide regular QRS (> 0.12 sec) HR > 150

- Amiodarone 5 mg/kg IV over 10 min

- Amiodarone may repeat x 2 prn to max adult dose. OR

- Lidocaine 1 mg/kg IV. May repeat once after 15 minutes.

- May consider Lidocaine infusion at 20-50 mcg/kg/min during EMS transport.

Yes – Pt Unstable

- Immediate synchronized cardioversion 1 joule/kg.
- If pt is conscious consider sedation with Midazolam 0.1 mg/kg IV, or 0.2 mg/kg IM. Do not exceed adult dosing. Do not delay cardioversion for sedation.
- If no response repeat synchronized cardioversion at 2 joules/kg.

If patient is not symptomatic with a narrow regular QRS (< 0.12 sec) and has a HR < 220 (child less than 2) or HR < 180 (child 2-10) consider Sinus Tachycardia and treat possible causes (see Notes & Precautions below).
NOTES & PRECAUTIONS:
A. In stable narrow complex irregular tachycardia, consider Calcium Chloride 500 mg slow IV before Diltiazem if systolic BP < 90 mmHg. If patient is unstable at any time, perform synchronized cardioversion.
B. In stable wide complex tachycardia which is monomorphic, consider Adenosine if SVT with aberrancy is suspected.
C. If the patient is asymptomatic, tachycardia may not require treatment in the field. Continue to monitor the patient for changes during transport. The acceptable upper limit for heart rate for sinus tachycardia is 220 minus the patient’s age.
D. Other possible causes of tachycardia include:
   1. Acidosis
   2. Hypovolemia
   3. Hyperthermia/fever
   4. Hypoxia
   5. Hypo/Hyperkalemia
   6. Hypoglycemia
   7. Infection
   8. Pulmonary embolus
   9. Tamponade
   10. Toxic exposure
   11. Tension pneumothorax
E. If pulseless arrest develops, follow Cardiac Arrest protocol.
F. All doses of Adenosine should be reduced to one-half (50%) in the following clinical settings:
   1. History of cardiac transplantation.
   2. Patients who are on Carbamazepine (Tegretol) and Dipyridamole (Persantine, Aggrenox).
   3. Administration through any central line.
G. Adenosine should be given with caution to patients with asthma.
H. Patients with Atrial fibrillation duration of >48 hours are at increased risk for cardioembolic events. Electric or pharmacologic cardioversion should not be attempted unless patient is unstable. Contact OLMC.

KEY CONSIDERATIONS:
Medical history, medications, shortness of breath, angina or chest pain, palpitations, speed of onset

HEART MONITOR ADULT SYNCHRONOUS CARDIOVERSION SETTINGS
- Medtronics Lifepak® – 100j, 200j, 300j, 360j
- Philips MRX® – 100j, 120J, 150J, 150J
- Zoll E-Series® – 70j, 120j, 150j, 200j