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

Irregular

Wide regular QRS (> 0.12 sec)

Amiodarone 150 mg IV/IO over 10 min or Lidocaine 1-1.5 mg/kg IV/IO

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

Narrow regular QRS (< 0.12 sec)

Attempt vagal maneuvers

Adenosine 6 mg rapid IV

Adenosine 12 mg rapid IV

Irregular

Narrow QRS

Wide QRS

Amiodarone 150 mg IV/IO over 2 minutes. Repeat prn with 0.35 mg/kg IV/IO over 2 minutes.

Consider:
  • Atrial fib/flutter
  • Multifocal atrial tachycardia
  • Diltiazem 0.25 mg/kg IV/IO over 2 minutes.

Adenosine 12 mg rapid IV

Adenosine 12 mg rapid IV

Consider:
  • WPW
  • Afib w/aberrancy
  • Torsades

If Torsades

Magnesium Sulfate 1-2 grams in 10 ml NS IV/IO over 5 minutes

Obtain post treatment 12-lead ECG

Contact OLMC for advice

Consider contributing factors and other treatments

Torsades

Narrow regular QRS (< 0.12 sec)

May consider Lidocaine infusion at 1 - 4 mg/min prophylactically during EMS transport.

Amiodarone 150 mg IV/IO over 10 min OR Lidocaine 0.5 - 0.75 mg/kg IV/IO every 5 min to max of 3 mg/kg.
Cardiac Dysrhythmias (Tachycardia) – 10.061

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

Irregular

Wide regular QRS (> 0.12 sec) HR > 150

Wide QRS

Amiodarone
5 mg/kg IV/IO over 10 min

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

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).

Yes – Pt Unstable

• Immediate synchronized cardioversion 1 joule/kg.
• If pt is conscious consider sedation with Midazolam 0.1 mg/kg IV/IO, 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.

Narrow QRS

Adenosine
0.1 mg/kg rapid IV

Adenosine
0.2 mg/kg rapid IV

Consider:
• WPW
• Afib w/aberrancy
• Torsades

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

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

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

Magnesium Sulfate
25 mg/kg IV/IO over 1-2 min

• Obtain post treatment 12-lead ECG
• Contact OLMC for advice
NOTES & PRECAUTIONS:
A. In stable narrow complex irregular tachycardia, consider Calcium Chloride 500 mg slow IV/IO 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