

**SECTION: C-05**

**TITLE: Adult Wide-Complex Tachycardia**

**REVISED: NOVEMBER 01, 2019**

This protocol includes ventricular tachycardia with a pulse, Torsades with a pulse, and wide-complex tachycardias of unclear origin. When possible, a 12-lead may be helpful in determining rhythm origin.

**BLS-Specific Care** See Adult General Cardiac Care and ACS Protocol C-3

**AEMT/O.M. SPECIFIC CARE:** See Adult General Cardiac Care/ACS Protocol C-3

**ALS-Specific Care** See Adult General Cardiac Care and ACS Protocol C-3

*Cardioversion for hemodynamically UNSTABLE patients*

- Settings for manual synchronized cardioversion :

Rhythm	ZOLL	Physio Control LP12/15	Philips MRx
Atrial Flutter	75j, 120j,150j,200j	100j, 200j, 300j, 360j	100j, 150j, 200j,
Atrial Fibrillation	75j, 120j,150j,200j	100j, 200j, 300j, 360j	100j, 150j, 200j,
V-Tach w/ pulse	75j, 120j,150j,200j	100j, 200j, 300j, 360j	100j, 150j, 200j
SVT	75j, 120j,150j,200j	100j, 200j, 300j, 360j	100j, 150j, 200j

- Ensure “**SYNC**” button is pressed between each desired synchronized shock
- If synchronization is not obtained, proceed with unsynchronized cardioversion at the same settings
- Sedation/Analgesia prior to cardioversion is highly desirable, but not mandatory. If IV access cannot be obtained for prompt sedation, then cardioversion may be performed without sedation
  - See *Sedation for Painful Procedures M-15* for medications and doses
  - Use Midazolam (Versed) for sedation in cardioversion.

*Antiarrhythmics:*

- Amiodarone
  - LOADING DOSE - IV/IO:150 mg IV infusion over 10 minutes.
    - May repeat **once** as needed. (max dose loading dose of 300 mg).
    - Convert to maintenance infusion once complete.
  - MAINTENANCE INFUSION: IV/IO: 1 mg/min
    - To Mix: 450 mg/250 cc, infuse via infusion pump.

- Lidocaine
  - 1.0-1.5 mg/kg slow IV bolus followed by additional doses of 0.5-0.75 mg/kg every 5 minutes **not to exceed 3 mg/kg or 300 mg in 30 minutes (not including infusion).**
  - If ectopy resolves, can set up a maintenance infusion.
    - (Be sure to rebolus @ 0.5-0.75 mg/kg in first 8-10 minutes of infusion to maintain therapeutic levels of lidocaine)
  - **Maintenance Infusion:** 2-4 mg/minute titrated for effect (Start @ 2 mg/min & add 1 mg/min for each additional 1 mg/kg IV bolus)
    - 1 mg/kg bolus = 2 mg/min.
    - 1.5-2 mg/kg total bolus = 3 mg/min.
    - 2.5-3 mg/kg total bolus = 4 mg/min.

Adenosine (Adenocard): Consider Adenosine for **suspected SVT with aberrancy**. Use Lidocaine or Amiodorone instead of Adenosine in cases of **known VT**

- IV: 6 mg **rapid IVP**
- Repeat at 12 mg in 3-5 minutes two times PRN (total 30 mg)
- Follow each dose with a flush of at least 20-60 ml
- For hemodynamically STABLE patients presenting with wide complex tachycardia, antidysrhythmic therapy is indicated.
- Magnesium sulfate IV/IO:
  - First line agent in treatment of hemodynamically stable polymorphic wide complex tachycardia (torsades de pointes.)
  - Also indicated in treatment of refractory VF/VT, wide complex tachycardia in the presence of suspected hypomagnesemia and life threatening ventricular dysrhythmias due to suspected digitalis toxicity
    - IV/IO: 2 g every 5 minutes, 1<sup>st</sup> line for Torsades or refractory V-Fib/Pulseless V-Tach.
    - Do not give faster than 1 g/minute
    - **Repeat PRN every 5 minutes to a max of 8 grams**

Consider sedation prior to cardioversion if it will not cause unnecessary delays.

- **DO NOT** administer sedation if:
  - Systolic BP < 90 mmHg
  - Low respiratory rate, SpO2 and/or diminished mental status