

WEST MICHIGAN REGIONAL PROTOCOL

VENTRICULAR TACHYCARDIA
PROTOCOL
(WIDE-COMPLEX TACHYCARDIA)

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- Purpose:** To provide a process for assessment and management of the patient in ventricular tachycardia (wide complex tachycardia) WITH PULSES.
- NOTE:** Patients in PULSELESS V-TACH must be treated according to the V-Fib/V-Tach Protocol.
- NOTE:** ALL WIDE COMPLEX RHYTHMS (QRS > 0.12 seconds in ADULTS, >0.08 sec in PEDIATRICS) ARE TO BE TREATED AS VENTRICULAR TACHYCARDIA UNLESS ASSOCIATED P- WAVES ARE CLEARLY VISIBLE.

- S P** **I. General Management**
- A. Assess ABC's
 - B. Apply oxygen as needed
 - C. Monitor EKG (identify rhythm), blood pressure, oximetry
 - P** D. Determine if the patient is **STABLE** or **UNSTABLE**
 - a. **STABLE** normal mentation for the patient, relatively normotensive, no significant chest pain*, no signs of shock
 - b. **UNSTABLE** altered mental status, significant chest pain*, significant shortness of breath, hypotension, or other signs of shock (any one or more of these)
- "Significant chest pain" is a judgment based on medic discretion and patient presentation.
- S P** **II. Specific Management**
- A. Obtain vascular access if quickly accessible or STABLE
 - P** B. **(ADULT ONLY) UNSTABLE:** treat with synchronous cardioversion.
 - 1. Consider sedation per procedure
 - 2. **Synchronous cardioversion for adult patient:**
 - a. 100 J
 - b. Repeat as necessary at 200 J, 300 J then 360 J
 - 1) **Biphasic equipment energy levels may be different but the cycle is the same. Follow the manufacturer's guidelines for the specific monitor/defibrillator.**
 - 3. If cardioversion is **unsuccessful**, consider:
 - a. Additional cardioversion(s)
 - b. Additional sedation
 - 4. **Administer an Antiarrhythmic**
 - a. **Lidocaine** **1mg/kg slow IV push (1-2 min)**
 - 1) Repeat (8 -10 min) **0.5mg/kg slow IV (max 3mg)**
 - b. **If Lidocaine is not approved by Medical Control or is not carried;**
 - 1) **Amiodarone** **150mg IV over 10 minutes**
 - 1) Repeat as needed to max dose of 450mg (all we carry)
 - 2) True max dose is 2.2g/24 hours
 - c. **If both Lidocaine and Amiodarone are approved and carried, use Lidocaine for pulsed patients. DO NOT USE BOTH!**
 - 5. **Magnesium Sulfate*** **1-2g slow IV push (5-60 min)**
(*Patients in "torsades de pointes")

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6. Contact Medical Control for additional orders
 - a. **Adenosine** **6 mg** rapid IV over 1 - 3 seconds
Repeat **12 mg** rapid IV if necessary
7. If cardioversion/medication is **successful**, reassess patient, repeat VS, record EKG and perform an initial or repeat 12 Lead, if available

C. (PEDIATRIC ONLY) UNSTABLE:

1. If IV/IO access is already established **MAY ATTEMPT:**
 - a. **Adenosine** **0.1mg/kg** max 6mg;
rapid IV/IO (1-3 sec)
 - 1) Repeat if needed **0.2mg/kg** max 12mg, rapid IV/IO
 - b. Consider Sedation
2. If IV/IO access is **not** established:
 - a. **Synchronous cardioversion:**
 - 1) 0.5 J/kg, check pulse and rhythm
 - a) Repeat at 1 J/kg; check pulse and rhythm
 - b) Repeat at 2 J/kg; check pulse and rhythm
3. If cardioversion/adenosine is **unsuccessful:**
 - a. Obtain IV/IO, if not already established
 - b. Consider Sedation
 - c. Additional cardioversion(s): use above energy settings
 - d. Consider fluid bolus in the absence of pulmonary edema
 - e. Administer **ANTIARRHYTHMIC**
 - 1) **Lidocaine** **1mg/kg** rapid IV/IO (max 100mg)
 - 2) **If Lidocaine is not approved by Medical Control or is not carried;**
 - a. **Amiodarone** **5 mg/kg** IV over 20-60 minutes
 - 3). **If both Lidocaine and Amiodarone are approved and carried, use Lidocaine for pulsed patients. DO NOT USE BOTH!**
 - f. **Magnesium Sulfate*** **25 to 50mg/kg** (10 – 20 min)
(*For "torsades de Pointes") (Max 2g)
4. If cardioversion/medication is **successful**, reassess patient, repeat VS, record EKG and perform an initial or repeat 12 Lead, if available

D. (ADULT ONLY) STABLE V-Tach:

1. Obtain 12 lead EKG, if available and not previously done
2. **Administer an Antiarrhythmic**
 - a. **Lidocaine** **1mg/kg slow** IV push (1-2 min)
 - 1) Repeat (8 -10 min) **0.5mg/kg slow** IV (max 3mg)
 - b. **If Lidocaine is not approved by Medical Control or is not carried;**
 - 1) **Amiodarone** **150mg** IV over 10 minutes
 - 1) Repeat as needed to max dose of 450mg (all we carry)
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c. **If both Lidocaine and Amiodarone are approved and carried, use Lidocaine for pulsed patients. DO NOT USE BOTH!**

3. **Magnesium Sulfate*** **1-2g slow IV push (5-60 min)**
(*Patients in "torsades de pointes")

4. Reassess patient, repeat VS, record EKG and perform an initial or repeat 12 Lead, if available

5. If at any point the patient becomes **UNSTABLE**, proceed to cardioversion.

E. (PEDIATRIC ONLY) STABLE V-Tach:

1. Obtain 12 lead EKG, if available and not previously done

2. Administer **ANTIARRHYTHMIC**

a. **Lidocaine** **1mg/kg rapid IV/IO (max 100mg)**

b. **If Lidocaine is not approved by Medical Control or is not carried;**
i. **Amiodarone** **5 mg/kg IV over 20-60 minutes**

c. **If both Lidocaine and Amiodarone are approved and carried, use Lidocaine for pulsed patients. DO NOT USE BOTH!**

3. **Magnesium Sulfate*** **25 to 50mg/kg (10 – 20 min)**
(*For "torsades de Pointes") (Max 2g)

4. Reassess patient, repeat VS, record EKG and perform an initial or repeat 12 Lead, if available

5. If at any point the patient becomes **UNSTABLE**, proceed to cardioversion.

F. Considerations – Treat possible contributing factors

• Hypoxia	• Tablets (drug overdose)
• Hypovolemia	• Tamponade (cardiac)
• Hydrogen ion (acidosis)	• Tension pneumothorax
• Hyperkalemia/Hypokalemia	• Thrombosis – heart (AMI)
• Hypothermia	• Thrombosis – lungs (PE)
• Hypoglycemia	• Trauma