



V-Fib / Pulseless V-Tach

Adult Medical

Austin County
EMS Protocol & Guideline

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Overview: Ventricular Fibrillation (V-fib) and pulseless ventricular Tachycardia (V-Tach) are rhythms typically generated by an irritated myocardium. Identifying, treating and ultimately stabilizing the myocardium is key to obtaining a sustained ROSC. Ensuring a good focus on 100% CPR while effectively incorporating analyzing rhythms/shocking and managing the patient's airway directly have an impact on the patient's ultimate outcome.

Definition: Erratic wide complex rhythm or regular wide complex (V-Tach) without a clear palpable pulse typically a rate no higher than 150 b/min.

EMT

- Place patient on the **Cardiac Monitor**
- Obtain **12 Lead EKG** – if applicable
- **CPR & AED** as appropriate to patient presentation
 - If witnessed arrest shock if indicated
 - Unwitnessed 2 minutes of uninterrupted CPR prior to AED analysis
- **Oxygen** administration as appropriate to the patient presentation
- **Airway Adjuncts** (Supraglottic Airway, OPA, NPA) EtCO₂ monitoring appropriate to patient presentation
- Obtain **BGL**
- **Identify** Source/Causes

AEMT

- **IV / IO** – Normal Saline
- **Airway** – ETT- with EtCO₂ monitoring
- **Vent** – if applicable
- **Epinephrine 1:10;000** - 1mg IV/IO every 3-5 mins for duration of arrest or until ROSC is achieved - Double the dose if given ETT

Paramedic

Infusions - ROSC

- **Epinephrine infusion:** 1 mg of 1:10;000 **Epinephrine** in 100 ml of NS (10 mcg/ml), titrate to maintain BP
- or
- **Dopamine 5 to 20 mcg/kg/min** titrated to maintain systolic BP of 90 mmHg

**** Infusion goal for Blood Pressure is 90-110 mmHg systolic and diastolic of 60 mmHg****

Anti-Arrhythmic

- **Amiodarone: 300 mg IV/IO**
 - May repeat in 5-10 min 150 mg IV/IO
 - If conversion: 150mg in 100ml over 10 min
- **Lidocaine: 1.5 mg/kg IV/IO**
 - Repeat at 0.5 – 0.75 mg/kg every 5-10 min PRN
 - Max total dose of 3 mg/kg
 - If conversion: 2-4 mg/min infusion

Metabolic

- **Calcium Chloride 500 – 1000mg IV/IO** _May repeated x1 in 10 min if known renal PT or if hyperkalemia is suspected.
- **Sodium Bicarbonate** 1mEq/kg IV/IO - Then 0.5 mEq/kg q 10 min
- **Magnesium Sulfate** 1-2 G IV/IO for refractory state and/or for **torsades-de-pointes** - May repeat once

PEARLS

- **Amiodarone**, when administered with Vaughan Williams Class I antiarrhythmic (i.e. **Lidocaine**) has been shown to precipitate torsades-de-pointes, and/or post-arrest hypotension. However, if the patient remains refractory to **Amiodarone**, **Lidocaine** should be administered.
- **Magnesium Sulfate** is the first-line antiarrhythmic medication for suspected torsades-de-pointes.
- If unable to determine if rhythm is **Ventricular Fibrillation** or **Asystole** – treat as **Asystole**.
- Initial airway management should be performed by the insertion of a King Tube during the initial stages of cardiac arrest resuscitation. EtCO₂ detection, bilateral breath sounds, and adequate chest rise are confirmation of proper placement. Once ROSC has been achieved the King Tube can be replaced with an ET tube unless contraindicated or difficult airway is anticipated.
- Anti-arrhythmic, vasopressors and when appropriate metabolic drug dosing may overlap in administering between shocks. Ensure the IV/IO line is flushed completely to ensure mixing of medications does not happen in the IV tubing.
- In cases where resuscitation is prolonged, prior to transporting to the ER, an ET tube can replace the King Tube unless contraindicated or difficult airway is anticipated.
- Treatable causes may include the 6 H's and 6 T's
 - Hypovolemia, hypoxia, hydrogen ion (acidosis), hypo-/hyper-electrolytes, hypo-/hyper-glycemia, hypo-/hyper-thermia
 - Tablets (overdose), trauma, tamponade (cardiac), tension pneumothorax, thrombosis (heart), thrombosis (lungs).