

**REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMT - Paramedic**

SMO: Ventricular Fibrillation/ Pulseless Ventricular Tachycardia

Overview: Pulseless Ventricular Tachycardia is characterized by the presence of wide complexes of ventricular origin without the presence of a pulse. It is treated in the same manner as Ventricular Fibrillation.

Torsades de Pointes is an Atypical Ventricular tachycardia (torsades de pointes, or twisting of the points) is where the QRS axis swings from a positive to a negative direction in a single lead. This rhythm is responsive to Magnesium Sulfate.

Ventricular Fibrillation is the totally disorganized depolarization and contraction of small areas of ventricular myocardium – there is no effective ventricular pumping activity. The ECG of ventricular fibrillation shows a fine to coarse zigzag pattern without discernible P waves or QRS complexes. V-Fib is never accompanied by a pulse or a blood pressure.

INFORMATION NEEDED

- History of arrest:
- Witnessed collapse: time down and preceding symptoms
- Unwitnessed collapse: time down and preceding symptoms if known
- Bystander CPR and treatments, including First Responder, AED or PAD defibrillation, given prior to arrival
- Past medical history: diagnosis, medications
- Scene: evidence of drug ingestion, hypothermia, trauma, Valid DNR form or medallion, nursing home or hospice patient

OBJECTIVE FINDINGS:

- Confirm apnea, pulselessness
- Confirm V-Fib or V-Tach on monitor

TREATMENT

- Assess ABC's
- Start CPR, assure adequacy of ventilations and compressions
- Ensure adequacy of CPR for 5 Cycles (2 minutes)
- Defibrillate at 360J for monophasic; OR equivalent biphasic; see PRECAUTIONS AND COMMENTS)
- Resume CPR immediately
- Continue with sequences of 5 Cycles (2 minutes) of CPR and one defibrillate at 360J for monophasic; OR equivalent biphasic. CPR and defibrillation is the primary treatment, the following should be added as soon possible however **prevent and minimize CPR interruptions.**

TREATMENT (cont)

7/04
Reviewed:
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EMS/ Region1 SMOs

- ___ Advanced Airway Management; confirm tube placement
- ___ IV or IO of NS
- ___ **Epinephrine 1 mg IVP**, repeat q 3 to 5 min.
- ___ **Lidocaine 1.5 mg/kg IVP**, may repeat if dysrhythmia persists at 0.75 mg/kg in 3 to 5 min. to max of 3 mg/kg or the dysrhythmia resolves
- ___ **Sodium Bicarbonate 1mEq/kg IVP**.for suspected hyperkalemia (renal failure, dialysis, potassium ingestion), DKA, or tricyclic or phenobarbital overdose;
- ___ If patient is restored to a perfusing rhythm, consult Medical Control to give **Lidocaine** 0.5-0.75 mg/kg bolus to reduce the likelihood of ventricular fibrillation recurring [see PRECAUTIONS and COMMENTS]
- ___ If patient is restored to an organized rhythm but remains hypotensive (SBP < 90), administer fluid boluses of 500cc each, and/ or administer **Dopamine** titrated to SBP>90 mm Hg. Start at 10mcg/kg/minute and titrate up in increments of 5mcg/kg/minute until SBP >90 or maximum of 20 mcg/kg/minute reached.

Documentation for Adherence to Protocol:

- ___ Proper defibrillation (stacked shocks, etc. as appropriate)
- ___ Intubation with confirmation of proper placement
- ___ IV placement
- ___ Proper drug sequence and dosage
- ___ ECG strip attached to patient record

PRECAUTIONS AND COMMENTS

- Defibrillation energy levels vary according to the type of waveform, monophasic or biphasic. Many devices used for public access defibrillation programs have a single energy setting.
- For equivalent biphasic energy level use manufactures recommendations, typically 120 to 200 J, if unknown select 200 J.
- **Epinephrine, Atropine, Lidocaine and Naloxone** may be administered via ETT. ET drug doses are double the standard IV dose. Maximum total doses of drugs are also doubled for ETT administration. Relative effectiveness of ET drug administration is in question.
- Patients should be observed closely for signs of side effects of **Lidocaine** toxicity (slurred speech, altered mental status, seizures, bradycardia). If Seizure occurs or other signs of toxicity occur, contact medical control for orders regarding the continuation/discontinuation of lidocaine.
- Use lower doses and longer intervals of **Lidocaine** administration for patients who will not metabolize the drug well (i.e. elderly >70 years of age, liver failure or shock/CHF patients).