REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMT – Intermediate

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)

__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, pottasium 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, titrate to SBP > 90 mmHg.

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).

REGION I EMERGENCY MEDICAL SERVICES
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EMT - Paramedic

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