REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMT – Intermediate

SMO: Pulseless Electrical Activity (PEA)

Overview: Pulseless Electrical Activity (PEA) refers to any semiorganized electrical activity that can be seen on the monitor screen although the patient lacks a palpable pulse. The definition specifically excludes Ventricular Fibrillation (VF), ventricular tachycardia (VT), and asystole. EARLY consideration and treatment of possible causes of PEA is essential (see treatment).

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, nursing home or hospice patient

OBJECTIVE FINDINGS
__Pulseless
__Apneic
__Organized Electrical Activity on the monitor (not VT, V-Fib or Asystole)

TREATMENT
__Start CPR if indicated (See Guidelines for Determining Death in the Field Policy)
__Ensure adequacy of CPR
__Advanced Airway Management; confirm tube placement
__Assess for possible causes of PEA and administer corresponding treatments:

5 Reversible Causes (“H”) and associated prehospital treatments
- Hypovolemia (give fluid bolus)
- Hypoxia (secure airway and ventilate patient)
- Hydrogen ion (acidosis) (secure airway, ventilate patient, consider sodium bicarbonate)
- Hyperkalemia/Hypokalemia (consider sodium bicarbonate)
- Hypothermia (warm patient)

5 Reversible Causes (“T”) and associated prehospital treatments
- Tablets (drug overdoses) (secure airway, ventilate; see Drug Overdose Protocol)
- Tamponade (cardiac) (secure airway, ventilate)
- Tension pneumothorax (secure airway, ventilate, needle decompression)
- Thrombosis-heart (AMI) (secure airway and ventilate)
- Thrombosis- lungs (pulmonary embolus) (secure airway and ventilate)
TREATMENT (cont)

- IV/ IO of NS;
- Epinephrine 1 mg IVP or IO, repeat q 3 to 5 min or Vasopressin 40 units IVP or IO for first or second dose of a vasopressor.
- Give 500cc fluid challenge, repeat if blood pressure not restored
- Assess for possible causes of PEA and administer corresponding treatments
- Sodium Bicarbonate 1mEq/kg IVP or IO for suspected hyperkalemia (history of renal failure, dialysis, or potassium ingestion), diabetic patient with possibility of DKA, or tricyclic or phenobarbital overdose
- If ROSC occurs refer to ROSC Induced Hypothermia Protocol.

Documentation for Adherence to Protocol:
- CPR performed
- Intubation or BLS airway management performed
- Epinephrine administered
- If a cause is documented, appropriate treatment is given, e.g. Hypovolemia-fluid bolus

PRECAUTIONS AND COMMENTS

- Epinephrine, Atropine, Lidocaine, Vasopressin and Naloxone may be administered via ETT. ET drug doses are double the standard IV dose. ET drugs should not exceed 10 ml for any single dose. Maximum total doses of drugs are also doubled for ETT administration. Relative effectiveness of ET drug administration is in question.
REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMT – Paramedic

SMO: Pulseless Electrical Activity (PEA)

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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, nursing home or hospice patient

OBJECTIVE FINDINGS

- Pulseless
- Apneic
- Organized Electrical Activity on the monitor (not VT, V-Fib or Asystole)

TREATMENT

- Start CPR if indicated (See Guidelines for Determining Death in the Field Policy)
- Ensure adequacy of CPR
- Advanced Airway Management; confirm tube placement
- Assess for possible causes of PEA and administer corresponding treatments:

5 Reversible Causes (“H”) and associated prehospital treatments

- Hypovolemia (give fluid bolus)
- Hypoxia (secure airway and ventilate patient)
- Hydrogen ion (acidosis) (secure airway, ventilate patient, consider sodium bicarbonate)
- Hyperkalemia/Hypokalemia (consider sodium bicarbonate)
- Hypothermia (warm patient)

5 Reversible Causes (“T”) and associated prehospital treatments

- Tablets (drug overdoses) (secure airway, ventilate; see Drug Overdose Protocol)
- Tamponade (cardiac) (secure airway, ventilate)
- Tension pneumothorax (secure airway, ventilate, needle decompression)
- Thrombosis-heart (AMI) (secure airway and ventilate)
- Thrombosis- lungs (pulmonary embolus) (secure airway and ventilate)

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EMS/ Region1 SMOs
TREATMENT (cont)
__IV/IO of NS;
__Give 500cc fluid challenge, repeat if blood pressure not restored
__Epinephrine 1 mg IVP or IO, repeat q 3 to 5 min or Vasopressin 40 units IVP or IO for first or second dose of a vasopressor.
__Assess for possible causes of PEA and administer corresponding treatments
__Sodium Bicarbonate 1mEq/kg IVP or IO for suspected hyperkalemia (history of renal failure, dialysis, or potassium ingestion), diabetic patient with possibility of DKA, or tricyclic or Phenobarbital overdose
__If ROSC occurs refer to ROSC Induced Hypothermia Protocol.

Documentation for Adherence to Protocol:
__CPR performed
__Intubation or BLS airway management performed
__Epinephrine administered
__If a cause is documented, appropriate treatment is given, e.g. Hypovolemia-fluid bolus

PRECAUTIONS AND COMMENTS
• Epinephrine, Atropine, Lidocaine, Vasopressin and Naloxone may be administered via ETT. ET drug doses are double the standard IV dose. ET drugs should not exceed 10 ml for any single dose. Maximum total doses of drugs are also doubled for ETT administration. Relative effectiveness of ET drug administration is in question.