Cardiogenic Shock

Note:
- Shock is defined as inadequate perfusion of vital organs, not merely hypotension.
- Circulatory failure is due to inadequate cardiac function.
- Be aware of patients with congenital defects.
- Cardiogenic shock exists in the pre-hospital setting when heart malfunction (such as an MI) is suspected and there is no specific indication of volume related shock.
- Pulmonary Edema or CHF may cause or be caused by cardiogenic shock (pediatrics with congenital heart defects may rarely have pulmonary edema).
- Marked, symptomatic tachycardia and bradycardia will also cause cardiogenic shock.

**EMERGENCY MEDICAL RESPONDER (EMR)/ EMERGENCY MEDICAL TECHNICIAN (EMT)/ ADVANCED EMT (AEMT) / INTERMEDIATE/ PARAMEDIC**

1. Initial Medical Care.
   a. Maintain airway.
   b. Titrate supplemental oxygen to lowest level to maintain pulse ox greater than 93% (if severe underlying lung disease goal is 88-92%). Do not withhold oxygen if you do not have ability to assess O2 saturations.
2. Remove all transdermal patches with gloves.
3. Place in position of comfort.

**EMERGENCY MEDICAL TECHNICIAN (EMT)/ ADVANCED EMT (AEMT) / INTERMEDIATE/ PARAMEDIC**

4. Obtain 12 lead EKG within 5 minutes of patient contact. Interpret and/or transmit to receiving hospital for interpretation.
5. **Consider CPAP if patient is in severe respiratory distress.** Follow CPAP protocol.
6. **If SBP greater than 100 mm Hg, follow CHF/Pulmonary edema protocol.**

**ADVANCED EMT (AEMT) / INTERMEDIATE/ PARAMEDIC**

7. Establish IV/IO
8. If hypovolemic and/or dehydrated and lungs are clear: **Fluid bolus in 500 mL increments up to 2 liters.**

**Contact Medical Control for the following:**
- Additional orders

**PARAMEDIC**

9. For Patients with systolic BP less than 100 mmHg WITH evidence of poor tissue perfusion (cold periphery, altered mental status, etc.) DESPITE correction of non-cardiac factors (hypovolemia, hypoxia, acidosis, and dysrhythmias).

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20 Cyanotic Heart Disease pulse ox goal 75-85%
** 12 lead EKG is an additional skill at the EMT & AEMT level requiring additional training approved by the Medical Director and State Approval
** IO is an additional skill at the AEMT level requiring additional training approved by the Medical Director and State Approval.
a. If SBP 70-100 mmHg and signs of shock start Dopamine 5 mcg/kg/min. Titrate up to 20 mcg/kg/min or SBP greater than or equal to 100 mmHg
b. If SBP less than 70 mmHg give Dopamine at 20 mcg/kg/minute and when SBP greater than or equal to 100 mm Hg titrate down
10. For Patients with systolic BP less than 100 mmHg WITHOUT evidence of poor tissue perfusion (cold periphery, altered mental status, etc.).
   a. Correct non-cardiac factors (hypovolemia, hypoxia, acidosis, and dysrhythmias)
   b. Transport

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Notes: Always titrate to patient response. Individual dosage requirements vary widely by weight.