

**SECTION: C-08**

**TITLE: Congestive Heart Failure/Pulmonary Edema**

**REVISED: November 1, 2017**

**GENERAL COMMENTS:** This protocol is intended for CHF/Pulmonary edema in the normotensive or hypertensive patient. For CHF with Hypotension, see Protocol M-3, "Adult Hypotension and Shock"

**BLS SPECIFIC CARE: See Adult General Cardiac Care/ACS Protocol C-3**

- Titrate oxygenation and ventilation to 94-98% SPO2
- Follow up vitals every 5 minutes or sooner.
- Obtain 12 lead (if feasible/Available) . STEMI patients should be transported to appropriate PCI capable facilities.
- Consider assisted Positive Pressure Ventilation with a BVM for severe distress until CPAP is available.

**AEMT/O.M. SPECIFIC CARE: See Adult General Cardiac Care/ACS Protocol C-3**

*Respiratory Support (if appropriate and available)*

- Consider Assisted/Intermittent Positive Pressure Ventilation
- CPAP: See also Appendix 6
  - Medical Control Required if BP less than 90 systolic.
  - Initial setting at 5 cmH2O, MAX: 10 cmH2O

**ALS SPECIFIC CARE: See Adult General Cardiac Care/ACS Protocol C-3**

CPAP: See also Appendix 6

- Medical Control Required if BP less than 90 systolic.
- Initial setting at 5 cmH2O, MAX: 10 cmH2O
- Coaching will be required to reduce anxiety
- If coaching is unsuccessful, then consider low dose sedation. See the Sedation for Painful Procedures protocol M-15 for medication and doses.

Nitrates (\*\* See physician PEARLS):

- **NTG Spray:** For patients in respiratory distress, signs of severe pulmonary edema,
  - SL: 0.4 mg SL spray/tab every 3-5 minutes PRN
  - Hold for B/P <100, or Viagra use (or similar drug) within previous 24 hours.
  - Use with caution in suspected right-sided MI
- **HIGH DOSE NTG SPRAY:** For patients in extreme respiratory distress, signs of severe pulmonary edema, with associated HTN (SYSTOLIC B/P > 200 mm HG).
  - SL: 0.8 mg SL (0.4 mg spray/tab x2) every 5 minutes PRN
  - Hold for Viagra use (or similar drug) within previous 24 hours.
  - Return to normal dosing when B/P drops below 200 mm Hg.

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- **NTG Paste:** Initiate if NTG is successful in reducing discomfort
  - TD: 0.5-1.5 inches applied topically (TD) to non-hairy area of trunk.
  - Hold for B/P <100, or Viagra use (or similar drug) within previous 24 hours. Use with caution in suspected right-sided MI
  - Wipe off if hypotension develops

## **PHYSICIAN PEARLS:**

The primary concern with nitroglycerine use is iatrogenic hypotension relative to the myocardial demand, which may increase mortality and morbidity. If precipitous drop is noted, use subsequent doses judiciously.