

HEALTHEAST MEDICAL TRANSPORTATION MEDICAL OPERATIONS MANUAL

2A CHEST PAIN/ACUTE CORONARY SYNDROME

PATIENT CARE GOALS

- Identify and treat or rule out potential life threats involving chest discomfort and other signs or symptoms that may resemble ACS.¹
- Recognize and appropriately manage suspected acute coronary syndromes.^{2,3}
- Eliminate or reduce cardiac-related discomfort, and stress while maintaining adequate oxygenation, ventilation, and perfusion.
- Obtain 12-lead ECG within minutes of patient contact. Activate Cath Lab within minutes of acquiring diagnostic 12-lead indicating presence of STEMI.

EMT

1. Assess the patient and provide initial care, including oxygen and vascular access, if needed, per **1A General Assessment and Care**.
- Do not administer oxygen if SpO₂ >93% and there is no evidence of respiratory distress.
- If SpO₂ <94% apply oxygen 1-4 LPM nasal cannula titrated to SpO₂ 94-96%. Avoid SpO₂ >96%.
2. Administer **aspirin 324 mg PO** ASAP (chewable), even if **aspirin** was previously taken and/or patient is on coumadin or other anticoagulant medication.⁴
3. Administer **sublingual nitroglycerin 0.4 mg**, if the systolic blood pressure is greater than 100 mmHg. Repeat every 5 minutes if chest discomfort persists and blood pressure remains greater than 100 mmHg⁵.
4. Establish vascular access. Saline lock is appropriate for patients not requiring immediate volume resuscitation.

PARAMEDIC

5. If possible, obtain a 12-lead ECG within 5 minutes of patient contact and before additional nitroglycerin is administered (other simultaneous interventions are acceptable).⁶
6. If ECG demonstrates STEMI, activate Cath Lab per **7H 12-Lead ECG and Cath Lab Activation**.
7. If ECG demonstrates STEMI or patient exhibits signs and symptoms that are consistent with Acute Coronary Syndrome with a non-diagnostic ECG⁷:
 - a. Treat dysrhythmias with appropriate algorithm.
 - b. If discomfort continues after 3 or more doses of **sublingual nitroglycerin**, start **nitroglycerin infusion at 0.1 mcg/kg/min**. Titrate in increments of **0.1 mcg/kg/min every 5 minutes** to reduce symptoms while maintaining systolic blood pressure greater than 100 mmHg. Do not exceed **maximum dose of 0.5 mcg/kg/min**.
 - Establish 2nd IV, preferably in the same arm⁸.
 - If hypotension occurs without pulmonary edema, discontinue nitroglycerin infusion and administer 200 to 500 ml normal saline bolus.
 - If hypotension occurs with pulmonary edema, discontinue nitroglycerin infusion and initiate **dopamine (Intropin) infusion at 2 to 10 mcg/kg/min**. Titrate to a blood pressure

HEALTHEAST MEDICAL TRANSPORTATION MEDICAL OPERATIONS MANUAL

greater than 90 mmHg.

- c. In addition to nitroglycerin or if nitroglycerin is contraindicated, treat discomfort and nausea as outlined in **1C Pain and Nausea Management**.
 - d. Consider sedation as outlined in **1D Anxiety and Sedation Management**, after hypoxia and/or shock has been ruled out or corrected.
8. If patient exhibits signs and symptoms that are NOT consistent with Acute Coronary Syndrome:
- a. Treat discomfort, nausea and anxiety as outlined in **1C Pain and Nausea Management** and **1D Anxiety and Sedation Management**.

DOCUMENTATION KEY POINTS

- History of the event, including time and setting of onset, quality, radiation, and severity of symptoms on a 0 to 10 scale; associated symptoms; and aggravation or alleviation of symptoms.
- Physical signs and symptom that are and/or are not consistent with Acute Coronary Syndrome².
- List of patient risk factors for coronary artery disease².
- Patient response to treatments, including changes in the patient's perception of discomfort on a 0 to 10 pain scale.
- Cath lab activation in the appropriate intervention.
- Initial and ongoing assessments, monitoring, interventions, patient response, and complications (if any) encountered.

NOTES

¹ Potential life threats that may involve chest discomfort include:

- ACS/AMI
- Aortic dissection
- Tension pneumothorax
- Pulmonary embolus
- Pericardial tamponade
- Esophageal rupture

² The classic signs and symptoms of an acute coronary syndrome are any of the following:

- Chest discomfort, pressure, fullness, or a squeezing sensation that can be constant or intermittent.
- Discomfort in one or both arms, the back, neck, jaw or stomach.
- Shortness of breath with or without discomfort
- Cool clammy skin, diaphoresis, nausea/vomiting, and/or lightheadedness.

³ Risk factors for coronary heart disease include any of the following:

- Age > 35
- Family history of heart disease
- Smoking
- Elevated cholesterol (total greater than 180 mg/dl)
- Hypertension
- Sedentary lifestyle

HEALTHEAST MEDICAL TRANSPORTATION MEDICAL OPERATIONS MANUAL

- Obesity
- Diabetes

⁴ The only contraindications to aspirin administration are a history of anaphylactic reaction to aspirin or active gastrointestinal bleeding.

⁵ **Nitroglycerin:** Use of phosphodiesterase inhibitors – sildenafil (Viagra or Revatio) or vardenafil (Levitra) within the past 24 hours or tadalafil (Cialis) within the past 48 hours – is a contraindication for administration of nitroglycerin, due to risk of severe hypotension.

⁶ **12-Lead ECG:** If possible, obtain a 12-lead ECG whenever a potential cardiac event is suspected. Acquisition should not delay or interfere with emergent or life-saving care. Repeat the 12-lead ECG every 5-10 minutes during transport, if appropriate.

⁷ STEMI is a clear indication for the initiation of a NTG infusion. The patient with a non-diagnostic 12-lead ECG must be interpreted in the context of the patient's symptoms and risk factors for coronary artery disease.

⁸ If transporting the patient to a facility that accepts pre-hospital blood draws, obtain and appropriately label blood specimens.