

Chest Pain: Cardiac and STEMI



History

- Age
- Medications (Viagra / sildenafil, Levitra / vardenafil, Cialis / tadalafil)
- Past medical history (MI, Angina, Diabetes, post menopausal)
- Allergies
- Recent physical exertion
- Palliation / Provocation
- Quality (crampy, constant, sharp, dull, etc.)
- Region / Radiation / Referred
- Severity (1-10)
- Time (onset/duration / repetition)

Signs and Symptoms

- CP (pain, pressure, aching, vice-like tightness)
- Location (substernal, epigastric, arm, jaw, neck, shoulder)
- Radiation of pain
- Pale, diaphoresis
- Shortness of breath
- Nausea, vomiting, dizziness
- **Time of Onset**
- Women:
 - More likely to have dyspnea, N/V, weakness, back or jaw pain

Differential

- Trauma vs. Medical
- Angina vs. Myocardial infarction
- Pericarditis
- Pulmonary embolism
- Asthma / COPD
- Pneumothorax
- Aortic dissection or aneurysm
- GE reflux or Hiatal hernia
- Esophageal spasm
- Chest wall injury or pain
- Pleural pain
- Overdose: Cocaine or Methamphetamine

	12 Lead ECG Procedure
B	Aspirin 81 mg x 4 PO (chewed) Or 325 mg PO
	Nitroglycerin 0.3 / 0.4 mg Sublingual Repeat every 5 minutes x 3 <i>if prescribed to patient and (BP ≥ 100)</i>
P	Cardiac Monitor

Acute MI / STEMI
(STEMI = 1 mm ST Segment Elevation ≥ 2 Contiguous Leads)

Transport based on:
STEMI
EMS Triage and Destination Plan
Immediate Notification of Facility
Immediate Transmission of ECG
if capable
Keep Scene Time to ≤ 10 Minutes

B *If transporting to Non PCI Center*
Reperfusion Checklist

A	IV / IO Procedure
A	Nitroglycerin 0.3 / 0.4 mg SL Repeat every 5 minutes as needed
	Nitroglycerin Paste 1 inch
P	Morphine 2 – 4 mg IV / IO / IM (Drug of choice for cardiac patients) Repeat 2 mg every 5 minutes as needed (Maximum 10 mg) Or Fentanyl 50 – 100 mcg IV / IO (Utilize if Morphine is contraindicated) Repeat 25 mcg every 20 minutes as needed (Maximum 200 mcg)
	Hypotension / Shock Protocol AM 5 <i>if indicated</i>
	CHF / Pulmonary Edema Protocol AC 5 <i>if indicated</i>

 **Notify Destination or Contact Medical Control** 

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Withhold aspirin therapy after verifying patient has taken correct dose of non coated aspirin.

Only administer Aspirin to patients age 21 or greater.

12 lead ECG should be obtained within 5 min of initial patient contact on any patient with chest pain or who meets the rapid ECG criteria:

- >30 years old with non-traumatic chest pain
- >45 years old with:
 - Syncope
 - Significant Weakness
 - Rapid Heart Rate/Palpitations
 - Difficulty Breathing/Shortness of Breath

Any patient requiring an ALS assessment, which includes cardiac monitor or 12 lead ECG, should be attended by a paramedic.

Any deviation from the established guidelines or dosing requires orders from Medical Control .

Pearls

- **Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Back, Extremities, Neuro**
- **Items in Red Text are the key performance indicators for the EMS Acute Cardiac (STEMI) Care Toolkit**
- **Avoid Nitroglycerin in any patient who has used Viagra (sildenafil) or Levitra (vardenafil) in the past 24 hours or Cialis (tadalafil) in the past 36 hours due to potential severe hypotension.**
- **STEMI (ST-Elevation Myocardial Infarction)**
 - **Positive Reperfusion Checklist should be transported to the appropriate facility based on STEMI EMS Triage and Destination Plan.**
 - **Consider placing 2 IV sites in the left arm: Many PTCL centers use the right radial vein for intervention.**
 - **Consider placing defibrillator pads on patient as a precaution.**
 - **Consider Normal Saline bolus of 250 – 500 mL as pre-cath hydration.**
- **If CHF / Cardiogenic shock resulting from inferior MI (II, III, aVF), consider Right Sided ECG (V3 or V4). If ST elevation noted Nitroglycerin and / or opioids may cause hypotension requiring normal saline boluses.**
- **If patient has taken nitroglycerin without relief, consider potency of the medication.**
- **Monitor for hypotension after administration of nitroglycerin and narcotics (Morphine, Fentanyl, or Dilaudid).**
- **Diabetic, geriatric and female patients often have atypical pain, or only generalized complaints.**
- **Document the time of the 12-Lead ECG in the PCR as a Procedure along with the interpretation (Paramedic).**
- **EMT may administer Nitroglycerin to patients already prescribed medication. May give from EMS supply.**
- **Agency medical director may require Contact of Medical Control prior to administration.**