Acute Coronary Syndrome/Chest Pain/STEMI

Signs and Symptoms

- Chest pain, tightness, pressure, aching
- Location of discomfort (substernal, epigastric, arm, jaw, neck, back)
- Pain may radiate
- Pale and/or diaphoretic skin
- Shortness of breath
- Nausea, vomiting
  Dizziness/weakness/syncope

History

- Past medical history
- ACS Risk Factors:
  - Age
  - History of coronary artery disease
  - Hypertension
  - Diabetes
  - Smoking
  - High cholesterol
  - Cocaine use
  - Strong family history
- Medications/allergies
- OPQRST

Differentials

- Trauma vs. medical
- Angina vs. acute MI
- STEMI
- Pulmonary embolus
- Aortic dissection or aneurysm
- Spontaneous pneumothorax
- Pericarditis
- Cocaine use
- Acid reflux/esophageal spasm
- Chest wall pain
- Pleurisy (lung pain)

Pediatric Pearls

- Cardiac chest pain is very rare in children. Provide supportive care, consider other causes and consult medical control as needed for treatment.

WARNINGS

- **Do not administer** aspirin if full dose is already taken within 24 hrs, allergy, or evidence of active cerebral or GI/GU bleed.
- **Do not use** 12 lead to "rule out" cardiac pain. Many patients with acute coronary syndrome may have normal or non-diagnostic 12 lead.
- **Do not administer** Nitroglycerin (Nitrostat®) if patient has taken any sexual enhancement drugs (Viagra, Levitra, Cialis) in last 48 hours or has taken Revatio® (Sildenafil) for Pulmonary Hypertension.

Care: Adults Only

B E I P

Follow General Directive #3, Orders for all Patients.
! Administer **324 mg Low Dose Aspirin**

I P

! Acquire **12 lead EKG** and continue **3 lead** monitoring.

E I P

Establish IV access

Is pain suggestive of cardiac origin?

No → Consider the causes and manage accordingly. Consult Medical Control as necessary.

Yes → Determine if SBP >100 mmHg

Yes →

B

Assist patient with prescribed **Nitroglycerin**

OR

E I P

! **Nitroglycerin** 0.4mg SL q 5 min. until pain free, SBP < 100 mmHg, or 3 doses are given.

I P

Morphine Sulfate 2 mg slow IVP over 2 min., repeat every 5 min. to maximum of 10 mg or pain free or SBP < 100 mmHg.

I P

Consider repeat 12 lead en route as STEMI may evolve even if not shown on initial 12 lead. If chest pain is not resolved after above measures consult Medical Control for additional doses of **Nitroglycerin** or **Morphine**.

No →

E I P

Deliver 250 cc **Saline bolus**. Repeat one time PRN.

Once the SBP is > 100 mmHg → ! **Nitroglycerin** 0.4mg SL q 5 min. until pain free, SBP < 100 mmHg, or 3 doses are given.

Pearls

- 12 Lead transmission must be done if provider suspects STEMI or if provider needs medical control physician consult on EKG findings (e.g. possible STEMI, uncertain rhythm). Routine transmission of other 12 leads is not necessary.
- Consider all causes of chest pain.
- Monitor patient for hypotension after drug therapies.
- When possible, 1st dose of **Nitroglycerin** should be given within 10 min. of arriving to patient.
- If there is difficulty establishing an IV, 1st dose of **Nitroglycerin** may be given if SBP is 100 mmHg or greater.
- Diabetics, women and elderly with ACS may have atypical pain or generalized complaint of not feeling well.
- Patients with STEMI need to be transported expeditiously to the destination directed by Medical Control.
- If a STEMI is suspected, a 2nd IV line should be established when able.
- If an inferior wall or right-sided MI is suspected, consult with medical control and insure IV access is established prior to the administration of **Nitroglycerin.**
- **Fentanyl (Sublimaze©)** 50-100 mcg may be administered on standing order as an alternative if allergic to **Morphine**.
- **Fentanyl** (**Sublimaze®**) or **Morphine Sulfate** may be administered IM if unable to establish IV access.

Performance Indicators

- Patient's chest pain is resolved.
- Minimal delay initiating treatment.
- Prompt transport. **Goal:** On scene time less than 15 minutes when reasonable.
- 12 lead ECG acquired on all patients with suspected pain/discomfort of cardiac origin.