

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
- * Onset / Palliation / Provocation
- Quality (crampy, constant, sharp, dull, etc.)
- * Region / Radiation / Referred
- * Severity (1-10)
- * Time (onset /duration / repetition)

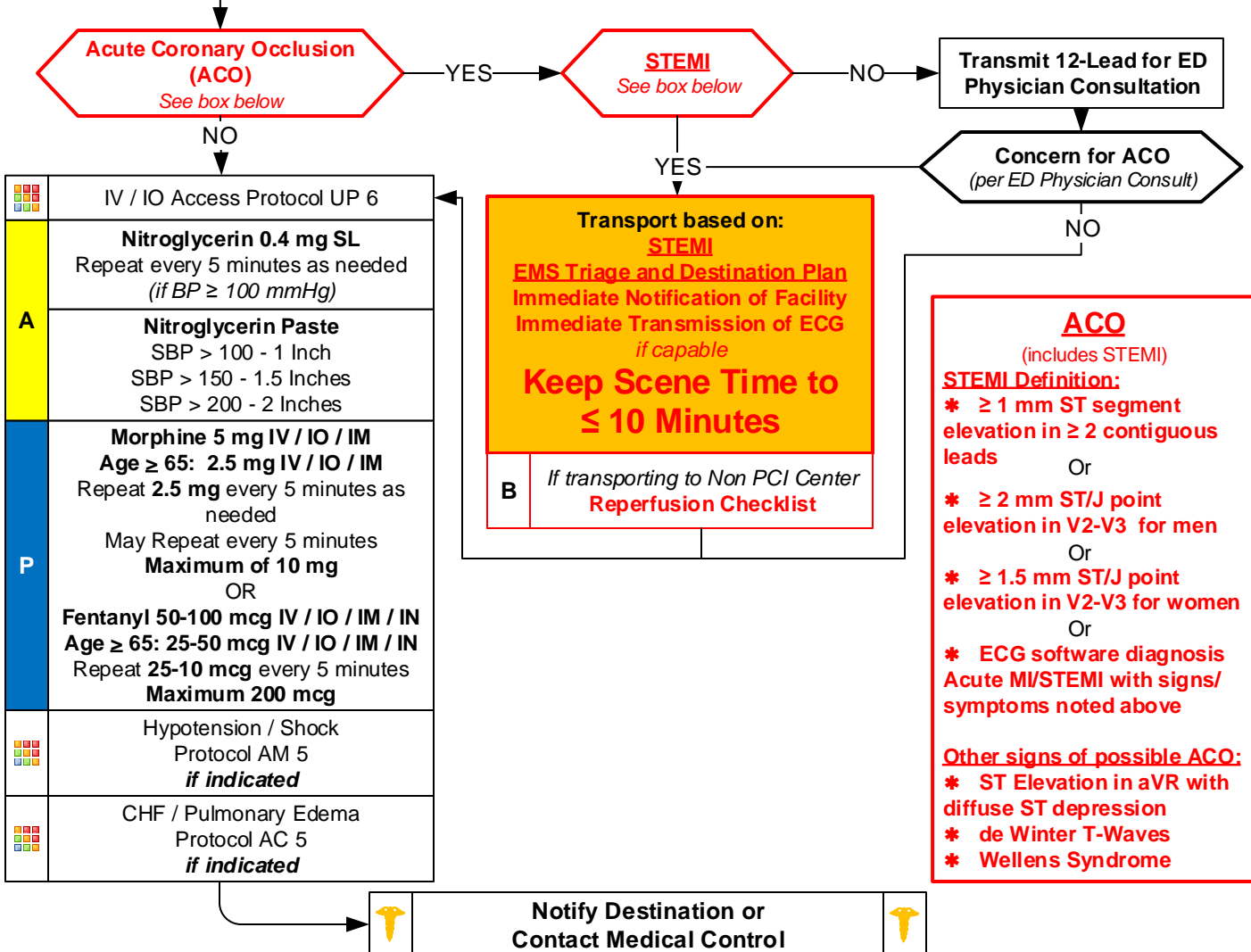
Signs and Symptoms

- * 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

B	12 Lead ECG Procedure CSP 1
	Aspirin 81 mg x 4 PO (chewed) Or 325 mg PO
P	Nitroglycerin 0.4 mg Sublingual Repeat every 5 minutes x 3 (if BP \geq 120 mmHg)
	Cardiac Monitor

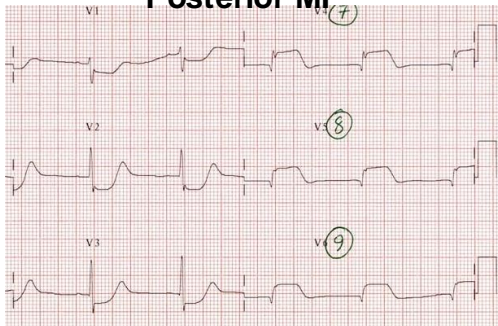


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I Lateral	aVR	V1 Septal	V4 Anterior
II Inferior	aVL Lateral	V2 Septal	V5 Lateral
III Inferior	aVF Inferior	V3 Anterior	V6 Lateral
SITE	FACING	RECIPROCAL	
SEPTAL	V1, V2	NONE	
ANTERIOR	V3, V4	NONE	
ANTEROSEPTAL	V1, V2, V3, V4	NONE	
LATERAL	I, aVL, V5, V6	II, III, aVF	
ANTEROLATERAL	I, aVL, V3, V4, V5, V6	II, III, aVF	
INFERIOR	II, III, aVF	I, aVL	
POSTERIOR	NONE	V1, V2, V3, V4	

Posterior MI



Wellens Syndrome



- Deeply inverted or biphasic T waves in V2-3 (may extend to V1-6)
- ECG pattern present in pain-free state
- Isoelectric or minimally-elevated ST segment (< 1mm)
- No precordial Q waves
- Preserved precordial R wave progression
- Recent history of angina

De Winter T-waves



- Tall, prominent, symmetrical T waves in the precordial leads
- Upsloping ST segment depression > 1mm at the J-point in the precordial leads
- Absence of ST elevation in the precordial leads
- Reciprocal ST segment elevation (0.5mm – 1mm) in aVR

Pearls

- * Patients with findings suggestive of MI are to have 12-lead EKG performed as soon as possible, ideally within the first 5 minutes of patient contact.
- * ASA and Nitro are contraindicated in patients ≤ 16 years of age.
- * **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**
- * **Nitroglycerin:**
 - 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.
 - Nitroglycerin may cause hypotension during any type myocardial infarction. It is NOT more likely to cause hypotension in an inferior MI and should NOT be avoided unless already hypotensive.
- * **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 PCI centers use the right radial artery for intervention.
 - Consider placing defibrillator pads on patient as a precaution.
 - Consider Normal Saline or Lactated Ringers bolus of 250 – 500 mL as pre-cath hydration.
 - Scene time goal is ≤ 10 minutes.
 - Document and time-stamp facility STEMI notification and make notification as soon as possible.
 - Document the time of the 12-Lead ECG in the PCR as a Procedure along with the interpretation (Paramedic).
- * **Cardiac related symptoms in men and women:**
 - Pressure, squeezing, fullness, or pain in the chest.
 - Pain or discomfort in one or both arms, the back, neck, jaw, or stomach.
 - Shortness of breath with or without chest pain.
 - Sweating, nausea, weakness, and/or lightheadedness.
 - Women, diabetic patients, and the elderly often experience only weakness, shortness of breath, nausea/vomiting, and back or jaw pain.**
- * If patient has taken nitroglycerin without relief, consider potency of the medication.
- * Monitor for hypotension after administration of nitroglycerin and opioids.
- * EMT may administer nitroglycerin to patients from EMS supply.