Syndromes Suggestive of Ischemia or Infarction

EMS assessment and care and hospital preparation*

Concurrent ED assessment (<10 minutes)
- Check Vital Signs
- IV Access
- Physical Exam
- Aspirin (160–325 mg)
- Oxygen (if O₂ sat < 94% or ≥ 91% with COPD)
- 12-Lead ECG
- Activate Cardiac Cath Lab
- Pain Control
- Cardiac Marker Levels
- Chest X-ray (<30 mins)

Immediate ED general treatment
- O₂ (if O₂ sat > 94%)
- Aspirin (160–325 mg)
- Pain Control
- Nitroglycerin Sublingual or spray

ST-elevation MI (STEMI)
- Start adjunctive therapies as indicated
- Do not delay reperfusion
- Time from onset of symptoms ≤ 12 hours?
- Reperfusion goals:
  - Door-to-balloon inflation (PCI)*** goal of 90 minutes
  - Door-to-needle (fibrinolysis) goal of 30 minutes

High-risk unstable angina/non-ST-elevation MI (UA/NSTEMI)
- Troponin elevated or high-risk patient
  - Consider early invasive strategy if:
    - Refractory ischemic chest discomfort
    - Recurrent/persistent ST deviation
    - Ventricular tachycardia
    - Hemodynamic instability
    - Signs of heart failure
- Start adjunctive treatments as indicated
  - Nitroglycerin
  - Heparin (UFH or LMWH)
  - Consider: PO β-blockers
  - Consider: Clopidogrel
  - Consider: Glycoprotein IIb/IIIa inhibitor
- Admit to monitored bed Assess risk status Continue ASA heparin, and other therapies as indicated
  - ACE inhibitor/ARB; HMG CoA reductase inhibitor (statin therapy)
  - Not at high risk: cardiology to risk stratify

Low-/Intermediate-risk ACS
- Consider admission to ED chest pain unit or to appropriate bed and follow:
  - Serial cardiac markers (including troponin)
  - Repeat ECG/continuous ST segment monitoring
  - Consider noninvasive diagnostic test

Develops 1 or more:
- Clinical high-risk features
- Dynamic ECG changes consistent with ischemia
- Troponin elevated

Abnormal diagnostic noninvasive imaging or physiologic testing?
- Y
  - If no evidence of ischemia or infarction by testing, can discharge with follow-up
- N

ST-elevation MI (STEMI)

High-risk unstable angina/non-ST-elevation MI (UA/NSTEMI)

Low-/Intermediate-risk ACS

** Afolabi BA, Novaro GM, Pinski SL, Fromkin KR, Bush HS. Use of the prehospital ECG improves door to balloon times in ST segment elevation myocardial infarction irrespective of time of day or day of week. Emerg Med J. 2007;24:588-591

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