Acute Coronary Syndromes Algorithm

Syndromes Suggestive of Ischemia or Infarction

EMS Assessment, Care and Hospital Preparation

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Healthcare Certifications

- Aspirin 160–325 mg
- Oxygen — If 0^2 Sat <90% or if short of breath
- 12-lead ECG
- Activate Cardiac Cath lab
- Morphine for Pain Control
- Consider Nitroglycerin Sublingual or spray if indicated

Concurrent ED/Cath Lab assessment (<10 minutes)

- Check VItal Signs
- IV Access
- Physical Exam
- Activate Cardiac Cath Lab
- Cardiac Markers complete blood count and Coagulation Studies
- Chest X-ray (<30 mins)
- 12-lead ECG

Immediate ED general/Cath Lab treatment

- Oxygen — If 0^2 Sat <90% or if short of breath
- Aspirin 160–325 mg if not already taken
- Morphine for Pain Control
- Consider Nitroglycerin Sublingual or spray if indicated
- Consider $P2Y_{12}$ Inhibitors

ECG Interpretation**

ST-ELEVATION MI (STEMI)

Start adjunctivetherapies as indicated
Do not delay reperfusion

Time from onset of symptoms ≤12 hours?

- >12 hours → TROPONIN ELEVATED OR HIGH-RISK PATIENT
- <12 hours

Reperfusion goals:
First medical contact-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)
- Angiotensin-converting enzyme inhibitors
- HMG-CoA reductase inhibitors
- Consider: PO β-blockers
- Consider: P2Y12 inhibitors
- Consider: Glycoprotein IIb/IIIa inhibitor

Admit to monitored bed. Assess risk status.
Continue ASA, heparin, and other therapies as indicated.

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

Y → TROPONIN ELEVATED OR HIGH-RISK PATIENT

N → Abnormal diagnostic noninvasive imaging or physiologic testing?

Y → TROPONIN ELEVATED OR HIGH-RISK PATIENT

N → If no evidence of ischemia or infarction by testing, can discharge with follow-up