Acute Coronary Syndromes Algorithm

Syndromes Suggestive of Ischemia or Infarction

EMS assessment and care and hospital preparation*

Aspirin 160–325 mg
Oxygen if O₂ 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
Cardiac Markers Complete Blood Count Complete Blood or Crystalline Studies
Chest X-ray (<30 mins)
12-lead ECG

Immediate ED general/Cath Lab treatment

O₂
Aspirin 160–325 mg (If not already taken)

Morphine for Pain Control
Consider Nitroglycerin Sublingual or spray if indicated
Consider P2Y12 inhibitors

ECG Interpretation**

ST-elevation MI (STEMI)
Start adjunctive therapies as indicated
Do not delay reperfusion

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

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

Oxygen
If 0₂ Sat <90%
OR if short of breath

Reperfusion goals:
First medical contact-to-balloon inflation (PCI)** goal of 90 minutes
Door-to-needle (fibrinolysis) goal of 30 minutes

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

Time from onset of symptoms
≤ 12 hours

>12 hours

≤12 hours

N

Y

N

Y

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

Abnormal diagnostic noninvasive imaging or physiologic testing?

** 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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