

# AHA ACLS Acute Coronary Syndrome Algorithm

Symptoms Indicate possible Ischemia or infarction

## EMS and Prehospital Care

- ✓ Monitor support ABC's. Readiness for CPR and/or defibrillation
- ✓ Obtain 12-Lead ECG; (STEMI) ST elevation should be reported to the receiving facility
- ✓ Medications to give: Aspirin, Oxygen, SL Nitroglycerine and Morphine
  - ✓ Hospital should prepare to respond to STEMI

● Must be performed immediately

● Must be performed in less than 10 minutes

### Immediate ED Assessment & Treatment:

- 12 Lead ECG (if not done pre-hospital)
- Obtain vital signs; O2 sat
- Oxygen if O2 sat < 90%; 4L then titrate
- Provide Aspirin 160-325 mg
- Provide nitroglycerine sublingual or spray
- Establish IV & give Morphine if needed
- Provide nitroglycerine sublingual or spray
- Perform brief, targeted hx. & physical exam obtain
- Review fibrinolytic checklist. Check contraindications
- Obtain cardiac marker levels, electrolyte, and coagulation tests.
- Portable chest x-ray (<30 min.)

## Read ECG

**ST Elevation (STEMI)**

**ST depression (NSTEMI)**

**Normal ST segment**

- **Start appropriate therapies:** Heparin, NTG, β-blockers
- **Reperfusion Therapy STAT**

Symptoms ≤ 12 hrs

NO

YES

- ❑ Goal for stent placement or balloon inflation should be within 90 minutes
- ❑ Goal for fibrinolysis should be 30 minutes

### Elevated Troponin or high-risk patient

Signs for invasive therapy:  
Continued chest discomfort  
Continued ST deviation  
Unstable hemodynamics  
Heart Failure  
Ventricular Tachycardia

### Adjunctive Therapies

Nitroglycerine (IV/PO)  
Heparin (IM/IV)  
Possibly: β-blockers  
Possibly: Clopidogrel  
Possibly: Glycoprotein IIB/IIIa inhibitor

- **Admit to monitored bed**
- **Continue ASA, heparin, and other indicated therapies.**
- ACE Inhibitors/ARB
- Statin Therapy
- Expert consultation to assess cardiac risk factors

- Possible admission: monitor serial ECG and cardiac markers.
- Consider non-invasive testing like treadmill or thallium stress test.

YES

- Develops 1 or more:
- ECG changes (ST elevation/depression)
  - **Troponin Elevated**
  - Worsening chest discomfort or arrhythmias

NO

YES

- Abnormal results from non-invasive diagnostic tests mentioned above
- Abnormal results from ECG or troponin

NO

**Discharge and schedule Follow-up**