ACLS

Adult Acute Coronary Syndromes Algorithm

PATIENT PRESENTATION SUGGESTIVE OF ISCHEMIA OR INFARCTION

- Chest discomfort or pressure, dyspnea, diaphoresis, nausea
- May include discomfort in the arm, jaw, back, or upper abdomen
- Some patients present with less obvious symptoms

EMS ASSESSMENT, CARE, AND HOSPITAL PREPARATION

- Assess ABCs, vital signs, mental status, SpO_2, and perfusion
- Cardiac monitor
- Obtain and interpret a 12-lead ECG within 10 minutes of first medical contact
- Repeat the ECG if nondiagnostic and symptoms persist or the condition changes
- Give aspirin 162–325 mg chewable if no contraindication
- Notify receiving facility / PCI-capable center as indicated
- Be prepared to treat arrhythmia, shock, or cardiac arrest

CONCURRENT ED ASSESSMENT AND IMMEDIATE TREATMENT

- Focused history and physical exam; establish IV access
- Obtain cardiac troponin promptly; repeat testing as needed
- Confirm aspirin was given; give if not already administered
- Oxygen only if hypoxic (e.g., SpO_2 <90%)
- Nitroglycerin for ongoing ischemic discomfort if blood pressure and contraindication screen allow
- Avoid nitrates with hypotension, suspected RV infarction, or recent PDE5 inhibitor use

STEMI or other ECG pattern concerning for acute coronary occlusion?

Yes

IMMEDIATE REPERFUSION EVALUATION

- Notify STEMI / reperfusion team immediately
- Do not wait for troponin
- PCI preferred when available in time
- First-medical-contact-to-device goal:
  ≤90 min at a PCI-capable facility
  ≤120 min if transfer is required
- If the ECG pattern is not straightforward, obtain immediate expert ECG review
- Do not delay reperfusion for symptom treatment
- If anticipated first-medical-contact-to-device time is >120 min, evaluate eligible STEMI for fibrinolysis
- Use symptom onset, diagnostic ECG findings, and the fibrinolytic contraindication checklist
- Fibrinolysis is generally used when symptom onset is <12 h
- After fibrinolysis, transfer promptly to a PCI-capable center
- If reperfusion fails, perform immediate angiography and rescue PCI
- If reperfusion succeeds, perform angiography within 2–24 hours, with PCI as indicated

No

CONTINUE EVALUATION FOR POSSIBLE NSTE-ACS

- Serial ECGs, serial troponins, symptoms, hemodynamic status, and overall clinical picture guide the next step
- Absence of STEMI does not mean absence of an emergency

Urgent escalation features present?

For example: ongoing or recurrent ischemic symptoms, hemodynamic instability or shock, acute heart failure, dynamic ischemic ECG changes, life-threatening arrhythmias

Yes

NSTE-ACS REQUIRING URGENT ESCALATION

- Urgently involve cardiology
- Determine timing of invasive evaluation
- Immediate invasive strategy for refractory angina or hemodynamic or electrical instability
- Continue serial ECGs, troponins, symptom treatment, and monitored care

No

NO IMMEDIATE ESCALATION FEATURES

- Continue monitored evaluation
- Serial ECGs and serial troponins
- Clinical reassessment and symptom treatment
- Further risk assessment, cardiology input, and disposition per ACS pathway

FROM ANY POINT

If cardiac arrest, a serious arrhythmia, shock, or respiratory compromise develops:

- Stabilize the patient
- Follow the matching ACLS or emergency-care pathway
- Continue ACS or reperfusion planning when feasible