

Standard Operating Procedure

Approach to Chest Pain

Special Region (1)
Union of Myanmar

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1. PURPOSE

To provide a standardized clinical approach for evaluating patients presenting with chest pain, ensuring rapid identification of life-threatening causes and appropriate management while recognizing important non-critical causes that may mimic cardiac chest pain.

2. SCOPE

Applicable to Emergency Department, Outpatient Department, Medical Wards, ICU and HDU in all SR-1 hospitals.

3. INITIAL TRIAGE (FIRST 5 MINUTES)

Immediate assessment of airway, breathing, circulation and vital signs (BP, HR, RR, SpO₂, temperature). A 12-lead ECG should be obtained within 10 minutes in all patients with suspected cardiac chest pain.

4. LIFE-THREATENING CAUSES OF CHEST PAIN

Condition	Key Clinical Features
Acute Coronary Syndrome	Central pressure-like chest pain radiating to arm or jaw, diaphoresis
Aortic Dissection	Sudden tearing chest pain radiating to back, pulse/BP difference
Pulmonary Embolism	Dyspnea, pleuritic chest pain, tachycardia
Tension Pneumothorax	Sudden dyspnea, unilateral absent breath sounds
Esophageal Rupture	Severe chest pain after vomiting, subcutaneous emphysema

5. NON-CRITICAL CAUSES OF CHEST PAIN

Category	Condition	Typical Clinical Clues
Gastrointestinal	Gastroesophageal reflux disease (GERD)	Burning retrosternal pain, worse after meals, relief with antacids
Gastrointestinal	Esophageal spasm	Intermittent chest pain with swallowing
Musculoskeletal	Costochondritis	Localized chest wall tenderness reproducible on palpation

Musculoskeletal	Muscle strain	Pain aggravated by movement or coughing
Pulmonary	Pleuritis	Sharp pleuritic pain worse with deep inspiration
Pulmonary	Pneumonia	Fever, cough, pleuritic pain
Neurologic	Herpes zoster (pre-eruptive neuralgia)	Dermatomal burning pain preceding vesicular rash
Neurologic	Thoracic intervertebral disc prolapse	Band-like radicular chest pain worsened by spine movement
Psychological	Panic disorder	Chest tightness with anxiety, hyperventilation

6. HISTORY TAKING

Use SOCRATES approach: Site, Onset, Character, Radiation, Associated symptoms, Timing, Exacerbating factors, Severity.

7. PHYSICAL EXAMINATION

Perform general examination, cardiovascular examination (heart sounds, murmurs, signs of heart failure) and respiratory examination (breath sounds, crackles, pleural rub).

8. INITIAL INVESTIGATIONS

Investigations may include 12-lead ECG, cardiac troponin testing, full blood count, renal function tests, blood glucose, and chest X-ray when clinically indicated.

9. ECG-BASED TRIAGE

STEMI: ST elevation in ≥ 2 contiguous leads $\rightarrow$ urgent reperfusion.

NSTEMI/Unstable Angina: ST depression or T-wave inversion with positive troponin.

10. RISK STRATIFICATION

Clinical risk scores such as HEART score may assist in risk stratification of patients presenting with chest pain suspected to be cardiac, particularly possible Acute Coronary Syndrome in the Emergency Department.

Component	0 Points	1 Point	2 Points
H – History	Slightly suspicious	Moderately suspicious	Highly suspicious
E – ECG	Normal	Non-specific repolarization disturbance	Significant ST depression
A – Age	<45 years	45–64 years	≥65 years
R – Risk factors	No risk factors	1–2 risk factors	≥3 risk factors or known CAD
T – Troponin	≤ normal limit	1–3 × normal limit	>3 × normal limit

Cardiovascular Risk Factors Included

- Hypertension, Diabetes mellitus, Dyslipidemia, Smoking, Family history of coronary artery disease and Obesity

Total Score	Risk Level	Risk of MACE (≈6 weeks)	Suggested Management
0–3	Low risk	~1–2%	Early discharge ± outpatient testing
4–6	Moderate risk	~12–17%	Observation and further testing
7–10	High risk	~50–65%	Early invasive strategy / admission

11. INITIAL MEDICAL MANAGEMENT FOR SUSPECTED ACS

Aspirin 300 mg, clopidogrel 300 mg and atorvastatin 40–80 mg loading dose, nitrate if not contraindicated, oxygen if SpO₂ <90%, morphine for severe pain, and beta-blockers when appropriate.

Various forms of nitrate and its dosage

Drug	Dose	Route	Frequency / Titration	Clinical Use
Nitroglycerin	0.4 mg	Sublingual tablet	Every 5 min × up to 3 doses	First-line relief of ischemic chest pain
Nitroglycerin	0.4 mg per spray	Sublingual spray	1 spray every 5 min (max 3)	Alternative to SL tablet in ACS
Isosorbide dinitrate	5 mg	Sublingual	Repeat every 5–10 min if needed	Alternative nitrate for angina relief
Nitroglycerin	5–10 µg/min starting dose	Intravenous infusion	Increase by 5–10 µg/min every 5–10 min (usual range 10–200 µg/min)	Persistent chest pain, hypertension, pulmonary edema

12. ADMISSION CRITERIA

Patients with abnormal ECG findings, elevated troponin levels, persistent chest pain, or hemodynamic instability should be admitted for further evaluation.

13. REFERENCES

1. Gulati M, Levy PD, Mukherjee D, et al. 2021 AHA/ACC guideline for the evaluation and diagnosis of chest pain. Circulation. 2021.
2. Collet JP, Thiele H, Barbato E, et al. ESC Guidelines for the management of acute coronary syndromes. Eur Heart J. 2023.
3. National Institute for Health and Care Excellence. Chest pain of recent onset: assessment and diagnosis. NICE guideline CG95. Updated 2023.
4. Dworkin RH, Johnson RW, Breuer J, et al. Recommendations for the management of herpes zoster. Clin Infect Dis. 2007.
5. Johnson RW, Rice AS. Clinical practice: Postherpetic neuralgia. N Engl J Med. 2014.
6. Amini A, Schmidt MH. Thoracic disc herniation: diagnosis and management. Neurosurg Clin N Am. 2011.
7. Tintinalli JE, Stapczynski JS, Ma OJ, et al. Tintinalli's Emergency Medicine: A Comprehensive Study Guide. 9th ed. New York: McGraw-Hill; 2020.