Canadian Family Medicine Clinical Card

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Chest Pain – ER Care

Vitals requiring emergent care & transfer to ER

- Airway obstruction
- RR <10 or > 29
- O2 sats <92%
- Pulse <50 or >120
- Systolic BP<90mmHg
- GCS <12

Symptoms (Danger signs in red)

Symptom \ Diagnosis	MI	Ischemia	PE	Pneumothorax	Arrythmia	Aortic Dissection	Pneumonia	Myopathy	COPD/Asthma[1]	Pericarditis	Myocarditis	Costochondritis
Fatigue	In women or the elderly, treat as a surrogate symptom of chest pain											
Abrupt onset	×		×	×	×	×						
Crescendo symptoms	×[2]							×[3]	×[4]			
Constant pain	×		×			×[5]	×					
Dyspnea	×[6]		×	×	×[6]		×					
Pain < 30 s.	Not a concern unless has DM (neuropathy can mask signs/symptoms)											
With exercise		×			×			×	×			×
Pleuritic pain			×	×						×[7]		
Cocaine use	×				×	×					×	
Anxiety/panic	Can be secondary to the Dx or the cause of the chest pain itself											

[1] Especially relevant in children. [2]Impending MI. [3] Worsening myopathy.
[4] Worsening COPD or asthma. [5]Radiating to back is classic.
[6]Dyspnea due to 2° heart failure. [7]With pleural inflammation

MYO. INFARCT

Inv: Serial ECGs, troponin, imaging

Tx: ASA, oxygen, nitro, morphine, ß-blocker, heparin, consider PCI. For STEMI: thrombolysis/PCI.

CARD. ISCHEMIA

Inv: ECG, troponin

Tx: If crescendo or new onset- ASA, oxygen, nitro, anticoag; if known and stable, ensure ASA; see ischemia card.

ARRYTHMIA

Inv: ECG, echo, rhythm strip, electrophysiology studies.

Tx: Dependent on rhythm; look for underlying cause.

MYOCARDITIS

Inv: CXR, ECG, bloodwork (CBC, ESR, troponin), echo.

Tx: Supportive care, anticoag, restrict physical activity, look for underlying cause

PNEUMOTHORAX

Inv: CXR (inc. expir.)

Tx: Heimlich valve; chest tube if 1° PTX with sx and/or >20% collapse.

COSTOCHONDRITIS

Inv: Diagnosis of exclusion.

Tx: Acetaminophen or NSAIDs

AORTIC DISSECTION

Inv: CXR, ECG, TEE/CT/MRI.

Tx: Urgent surgical consultation & control BP.

PE: WELLS CRITERIA

	Points
Clinical signs/sx of DVT	3
Other dx less likely than PE	3
Heart rate > 100/minute	1.5
Immob. or surgery in past 4 wks	1.5
Previous DVT or PE	1.5
Hemoptysis	1
Malignancy	1

Total points: >6 points = high risk; 2 to 6 points = mod. risk; <2 points = low risk

Inv: Very low risk: Patient <50 y.o., Wells scores = 0, oxygen sat >94%, and no hormone use → do not invest. for PE.
Low/Moderate Risk: ELISA D-Dimer → If -ve, no PE. If +, proceed as for high risk.
High risk: CXR → If -, VQ scan or CT arteriography. → If VQ or CT -, no PE. If CXR or VQ or CT +, treat. If nondiagnostic or still high suspicion, additional testing required.

Tx: Anticoagulation

PERICARDITIS

Inv: ECG. If low BP: TEE or CT or MRI. Pericardiocentesis (for dx or tx).

Tx: ASA. 2nd line: NSAIDs or glucocorticoid (prednisone).

Key References: Laird C, Driscoll P, Wardrope J. The ABC of community emergency care: chest pain. *Emerg Med J*. 2004; 21(2):226-32. Tapson V. Acute Pulmonary Embolism. *NEJM*. 2008;358:1037-52. Lee T, Goldman L. Evaluation of the patient with acute chest pain, *NEJM*. 2000;342:1187-95. Kline JA, Mitchell AM, Kabrhel C, Richman PB, Courtney DM. Clinical criteria to prevent unnecessary diagnostic testing in emergency department patients with suspected pulmonary embolism. *J Thromb Haemost*.2004;2(8):1247-55.