



# Approach To The Patient With Chest Pain

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# Outline

- Aetiology of chest pain
- Chest pain history
- Physical examination
- Basic investigations
- Further investigations

# Chest Pain Aetiology

In the primary care setting, common aetiologies include:

- musculoskeletal (36%)
- gastrointestinal (19%)
- stable angina (10.5%)
- unstable angina or MI (1.5%)
- other cardiac (3.8%)
- psychiatric (8%)
- pulmonary (5%)

In 16% of cases the cause is not established

# Chest Pain Aetiology

Common causes of hospital admission for non-traumatic chest pain:

- acute myocardial infarction (10.7%)
- angina/coronary artery disease (22.5%)
- atypical chest pain (29.4%)
- aortic dissection (0.3%)
- other cardiac causes, primarily CHF and atrial fibrillation, (13.8%)
- pulmonary embolus (0.4%)
- non-PE pulmonary causes, primarily bacterial pneumonia, (11.2%) but also spontaneous pneumothoraces (0.6%)
- abdominal causes (1.6%)
- other (10.2%).

# Differential Diagnosis of Chest Pain

## ■ Cardiovascular

- Acute coronary syndrome
- Stable angina
- Pericarditis
- Cardiac tamponade
- Aortic dissection
- Aortic stenosis
- Mitral valve prolapse
- Pulmonary hypertension

## ■ Respiratory

- Pulmonary embolism
- Pneumonia
- Pneumothorax
- Viral pleuritis

## • Gastrointestinal


- GORD
- Peptic ulcer disease
- Oesophageal spasm
- Acute cholecystitis
- Pancreatitis
- Gastritis

## • Musculoskeletal

- Costochondritis
- Herpes zoster

## • Psychiatric

- Anxiety or panic disorder



# Life-threatening causes of chest pain

- Acute Coronary Syndrome
- Aortic Dissection
- Tension Pneumothorax
- Pulmonary Embolism
- Cardiac Tamponade

# Diagnostic Approach

- Continuous monitoring of pulse, BP and oxygen saturation.
- High-flow oxygen
- Morphine

## *History*

Rapid recognition of acute coronary syndrome and other life-threatening causes of chest pain!

- Character of chest pain- SOCRATES
- Cardiac risk factors- hypertension, diabetes, hyperlipidaemia, tobacco use, family history
- Past medical history
- Medication history



# Physical Examination

- General appearance!
- Vital signs
- Complete cardiac examination with auscultation and palpation
- Breath sounds
- Abdominal examination



# Basic Investigations

## ■ ECG

- ST changes
- QRS abnormalities
- Arrhythmia
- Tachycardia/ bradycardia

## ■ CXR

- Pneumothorax
- Pneumonia
- Cardiac heart failure
- Pleural effusion
- Widened mediastinum

## • Blood Tests

- Cardiac biomarkers
- FBC
- Renal profile



# Further Investigations

- Coronary angiography
- Transthoracic echocardiography
- V/Q scan, CT angiography, pulmonary angiogram
- H. pylori breath test, oesophagogastroduodenoscopy, barium swallow.



# Summary

- Think cardiac first!
- History!
- Basic and further investigations