

Cardiovascular Q3 Acute Coronary Syndrome

GUIDELINE: NICE NG185

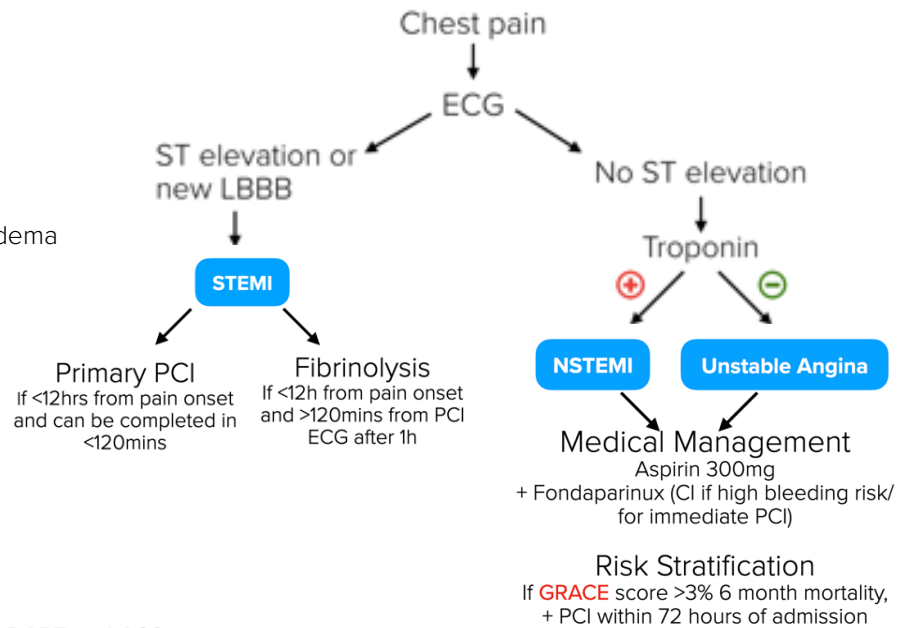
Guideline Explained

Initial management of all ACS:

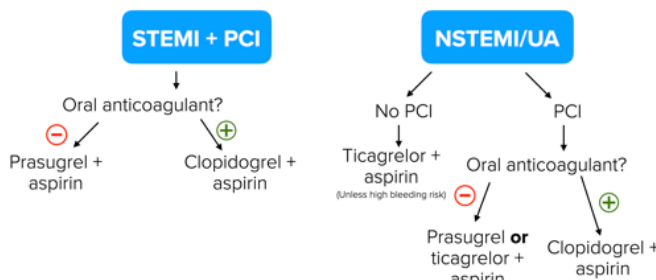
- IV opiate analgesia
- Antiemetics
- Aspirin [300mg]
- O2 only if hypoxic (SaO2 <94%)
- (+) GTN infusion for uncontrolled pain/ severe HTN/ pulmonary oedema

Post ACS management:

- Cardiac rehabilitation
- Lifestyle changes
 - Diet
 - Exercise
 - Smoking cessation
 - Weight management
- Medication
 - Dual antiplatelet therapy (DAPT):
 - B-blocker
 - ACEi
 - Statin



DAPT and ACS



Type 1 MI = acute plaque rupture
Type 2 MI = Supply over demand mismatch

ST elevation ECG criteria:

- >1mm ST rise @ J-point in two continuous leads Or
- In leads V2-3:
 - >2mm ST rise in men >40yrs
 - >2.5mm ST rise in men <40years
 - >1.5mm ST rise in women of any age

Answer Explained

- Why Dressler's syndrome? Autoimmune pericarditis, weeks to months after acute MI. Pleuritic chest pain and fever.
 - ECG: global ST elevation and PR depression
- Why not LV aneurysm? Presents with heart failure or arrhythmia after acute MI.
 - ECG: persisting ST elevation
- Why not Brugada syndrome? Sodium channelopathy → arrhythmias and sudden cardiac death.
 - ECG: ST elevation + TWI in V1-3
- Why not stent thrombosis? Presents like acute MI: chest pain +/- ECG changes and troponin rise.

Complications post acute MI:

Death	VSD
Arrhythmia/ heart block	Another MI
Ruptured aneurysm	Dresslers syndrome
Thrombus	Embolus
Heart failure	Regurgitant valve

SBA Exam Tips

- Cold peripheries and poor urine output → Cardiogenic shock
- PCI with stents → Dual anti platelet therapy (DAPT) for at least 12 months
- Bradycardia & AV nodal block → Inferior MI

1st line Ix

ECG + Troponin

Key Message

- Initial treatment ACS = Aspirin, Analgesia and Antiemetics
- Risk stratification (GRACE score) is essential to guide treatment for non-ST elevation ACS
- Consider all STEMI patients who present <12 hours from pain onset for immediate reperfusion unless CI

Cardiovascular Q4 Hypertension

GUIDELINE: NICE NG136

Diagnosis:

- Clinic BP >140/90mmHg → ABPM monitoring
- Clinic BP >180/120mmHg consider same day assessment and treatment
- ABPM <135/85mmHg → recheck 5 yrs
- ABPM >135/85mmHg - <150/95mmHg → treat if:
 - 10 yr CVD risk >10%
 - End-organ damage
 - Diabetes/ CVD/ CKD
- ABPM >150/95mmHg → treat + assess for secondary causes if <40yrs

Symptoms include: Headache, dizziness, visual disturbance, chest pain

Secondary Hypertension

When to consider?

- <40 years without clear FHx or risk factors
- Severe/ resistant HTN
- Malignant HTN with evidence of end-organ damage
- HTN associated with electrolyte disorders

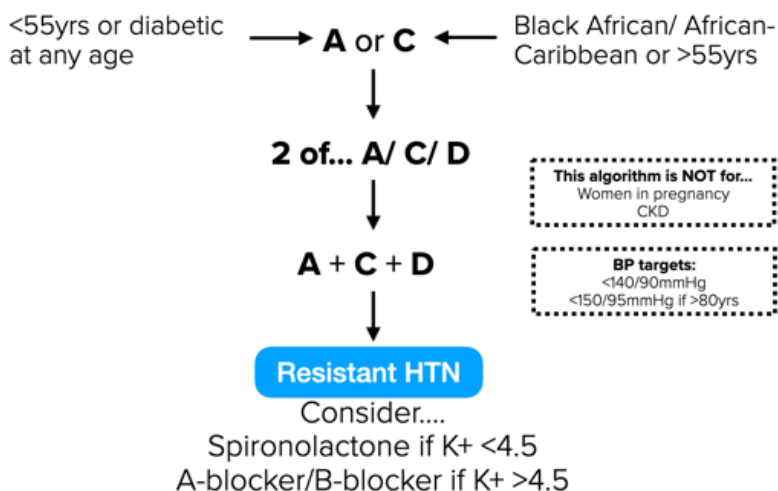
Causes of secondary hypertension:

- Renovascular (renal artery stenosis)
- Primary kidney disease
- Sleep apnoea syndrome
- Endocrine
 - Primary hyperaldosteronism
 - Cushing's syndrome
 - Hypothyroidism
 - Pheochromocytoma

Answer Explained

- Why answer C, **renal artery duplex scan**? A dramatic rise in creatinine on starting ACEi is seen with renal artery stenosis which is diagnosed via renal artery doppler US.
- Why not **24hr urinary catecholamines**? For pheochromocytoma: episodic severe HTN with headache, palpitations and sweating.
- Why not **plasma aldosterone:renin ratio**? For hyperaldosteronism.. low K⁺ with high Na⁺
- Why not thyroid function tests? For hypothyroidism
- Why not urinary cortisol? For cushing's disease

Management:



[A = ACEi or ARB; C = calcium channel blocker; D = thiazide diuretic]

“Accelerated” or “Malignant” HTN = BP >180/120mmHg with signs of retinal haemorrhage or papilloedema

- Hypertensive urgency = BP >180/120mmHg but no end organ damage

Management:

- Reduce BP slowly, aiming <160/120mmHg over hrs to days
- Drugs
- IV nitroglycerin (GTN)
 - IV nitroprusside
 - IV beta-blocker eg. Labetolol/ Esmolol
 - Oral agents eg. Amlodipine can be given if no end-organ damage and patient is asymptomatic

Other relevant topic:

Common side effects of antihypertensive drugs

ACEi	Dry cough, angioedema, AKI, hyperkalaemia
CCB	Pedal oedema, flushing, headaches
Diuretics (thiazide)	Hypokalaemia, hyponatraemia
Aldosterone antagonists	Hyperkalaemia, gynaecomastia

SBA Exam Tips

- Headache, sweating & palpitations with severe hypertension → Pheochromocytoma
- Pedal oedema resistant to diuretics → Calcium channel blocker S/E
- A-V nipping on fundoscopy → Hypertensive retinopathy

1st line Ix

Ambulatory Blood Pressure Monitoring (ABPM) or Home blood pressure monitoring (HBPM)

Key Message

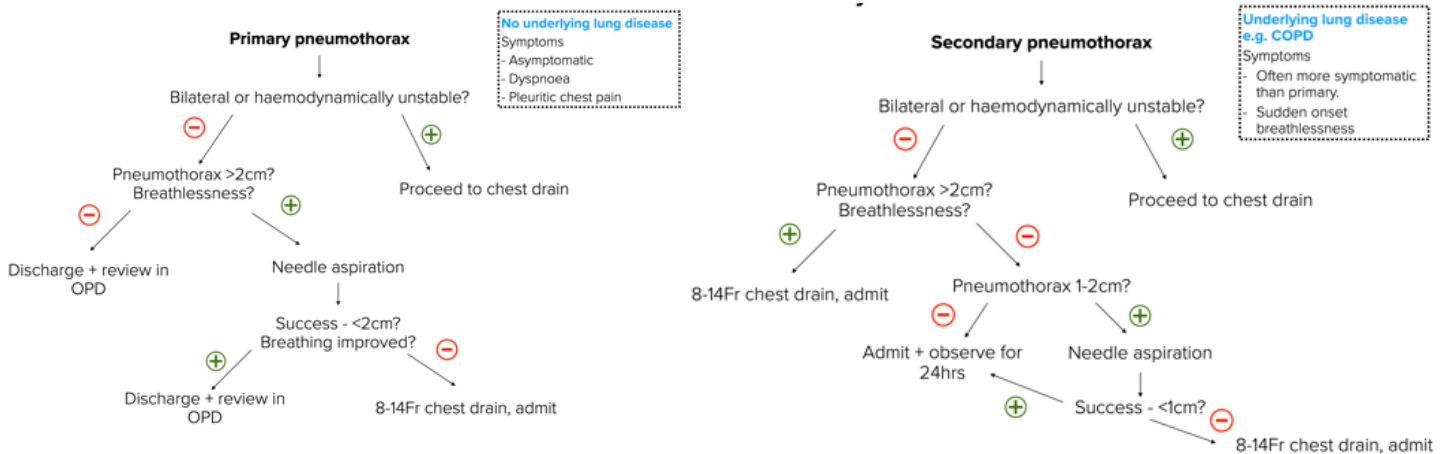
- Hypertension = clinic BP >140/90mmHg or ABPM >135/85mmHg
- Severe (>180/120mmHg) or symptomatic HTN should be referred for same day assessment and treatment
- Resistant or early-onset HTN should prompt investigation into possible secondary causes

Respiratory Q5 Pneumothorax

GUIDELINE: BTS: Pleural Disease

Guideline Explained

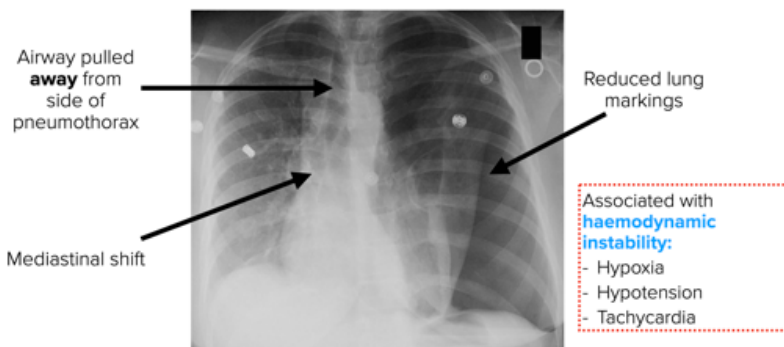
- Pneumothorax is split into **primary** (no underlying lung pathology) vs. **secondary** (lung disease e.g. COPD/ asthma).
- Primary pneumothorax tends to be asymptomatic, whereas secondary tends to have breathlessness out of proportion to size of pneumothorax.



Answer Explained

- Why C, needle aspiration and not A, chest drain? No history of underlying lung disease suggests primary pneumothorax. >2cm means needle aspiration should be tried before chest drain.
- Needle aspiration: routine treatment, typically with green needle and syringe into safe triangle.
- Needle decompression: emergency treatment, typically with grey cannula into 2nd intercostal space, mid-clavicular line.
- Why not E, discharge? All primary pneumothoraces >2cm require needle aspiration + repeat CXR before discharge.

Tension Pneumothorax: Radiological Features



Tension Pneumothorax

- **Medical emergency** - requires emergency decompression with **grey cannula into 2nd intercostal space, mid-clavicular line.**
- Trauma-related tension pneumothorax guidelines differ.
- One-way valve system -
 - Air in during inspiration, no air out in expiration.
 - Intrapleural pressure > atmosphere pressure → impaired venous return and reduced cardiac output.
- Associated with
 - Ventilated patients on ICU/ patients on NIV.
 - Trauma
 - Acute asthma/ COPD presentations
 - Blocked, clamped or displaced chest drains.

SBA Exam Tips

Increased compliance of the lung

FEV1/ FVC ratio <0.7

Type 2 respiratory failure with raised bicarbonate

→ Emphysema

→ Obstructive lung pathology

→ Chronic T2RF, aim sats 88-92%

1st line Ix

Chest x-ray

Key Message

Management of pneumothorax is dependent on primary vs. secondary and the size of pneumothorax.

All secondary pneumothoraces need admission.

Decompression of tension pneumothorax is with a wide-bore needle into 2nd intercostal space, mid-clavicular line.