


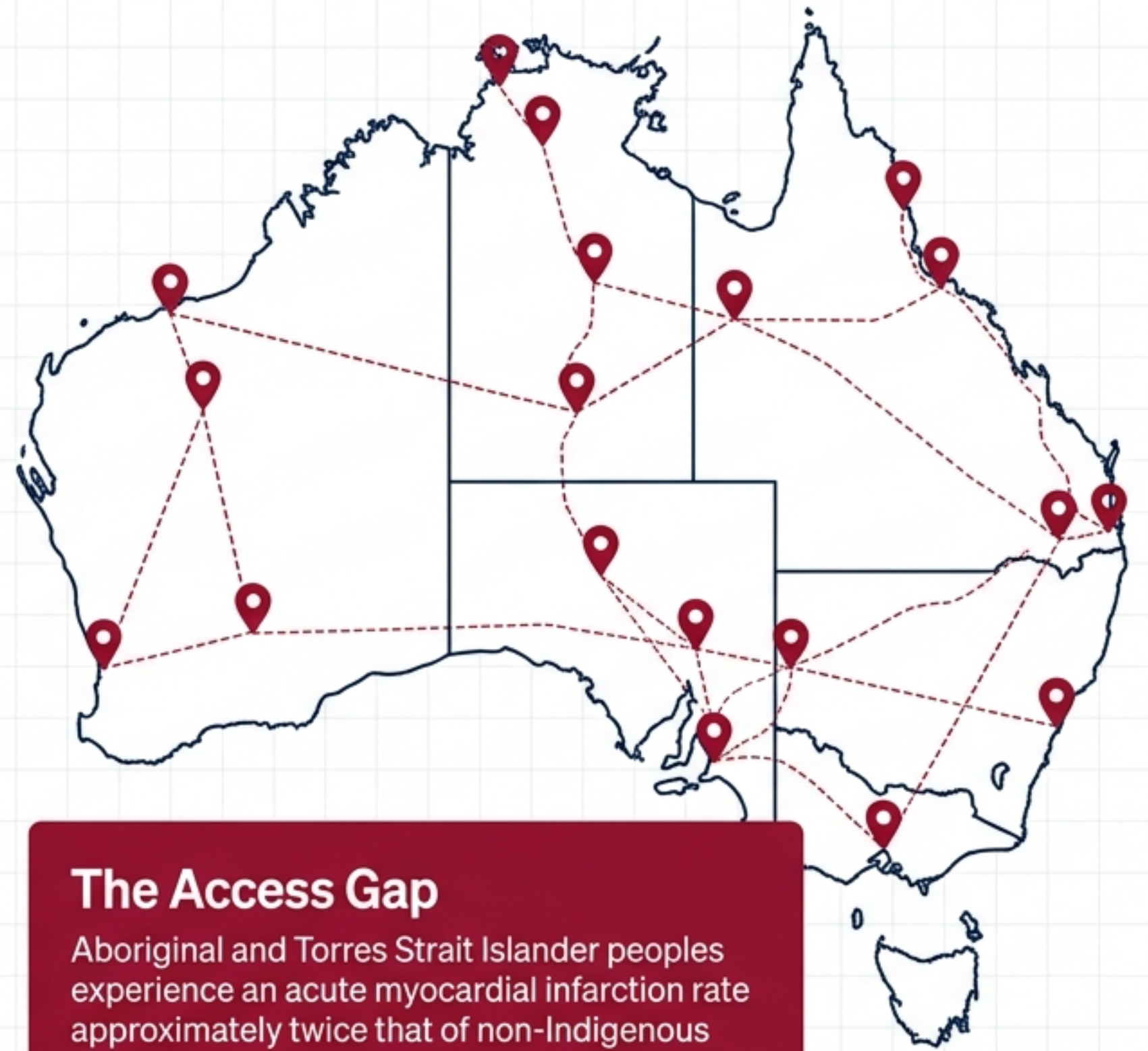
# Acute Coronary Syndromes (ACS)

## Clinical Triage & Management Protocol

 Based on Med2Date Australian Guidelines

# 10%

Ischaemic Heart Disease:  
The leading cause of death in Australia  
(approx. 10% of all deaths in 2022).



## The Access Gap

Aboriginal and Torres Strait Islander peoples experience an acute myocardial infarction rate approximately twice that of non-Indigenous Australians, at a younger age of first event, with significant barriers to timely reperfusion in remote areas.

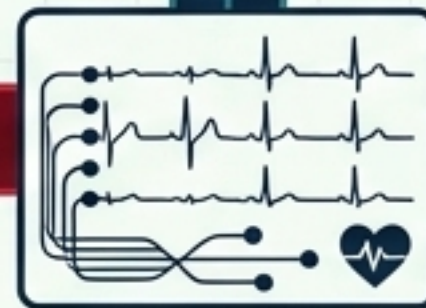
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**The 10-Minute Mandate:** 12-lead ECG must be performed within 10 minutes of arrival.

### Clinical Presentation:

Acute chest pain (crushing, heaviness), radiating to jaw/neck/arm/epigastrium. Dyspnoea, diaphoresis.

Atypical presentations common in elderly, women, and diabetics



### STEMI Pathway

ST-elevation in  $\geq 2$  contiguous leads

### NSTEACS Pathway

ST-depression, T-wave inversion,  
or transient ST-elevation

## STEMI

## NSTEMI/ACS



**ECG Findings**

Persistent ST-elevation in  $\geq 2$  contiguous leads

ST-depression, T-wave inversion, or normal



**Troponin (hs-cTn)**

Elevated, but do not delay treatment for results

Rise and/or fall pattern above 99th percentile upper reference limit confirms myocardial injury

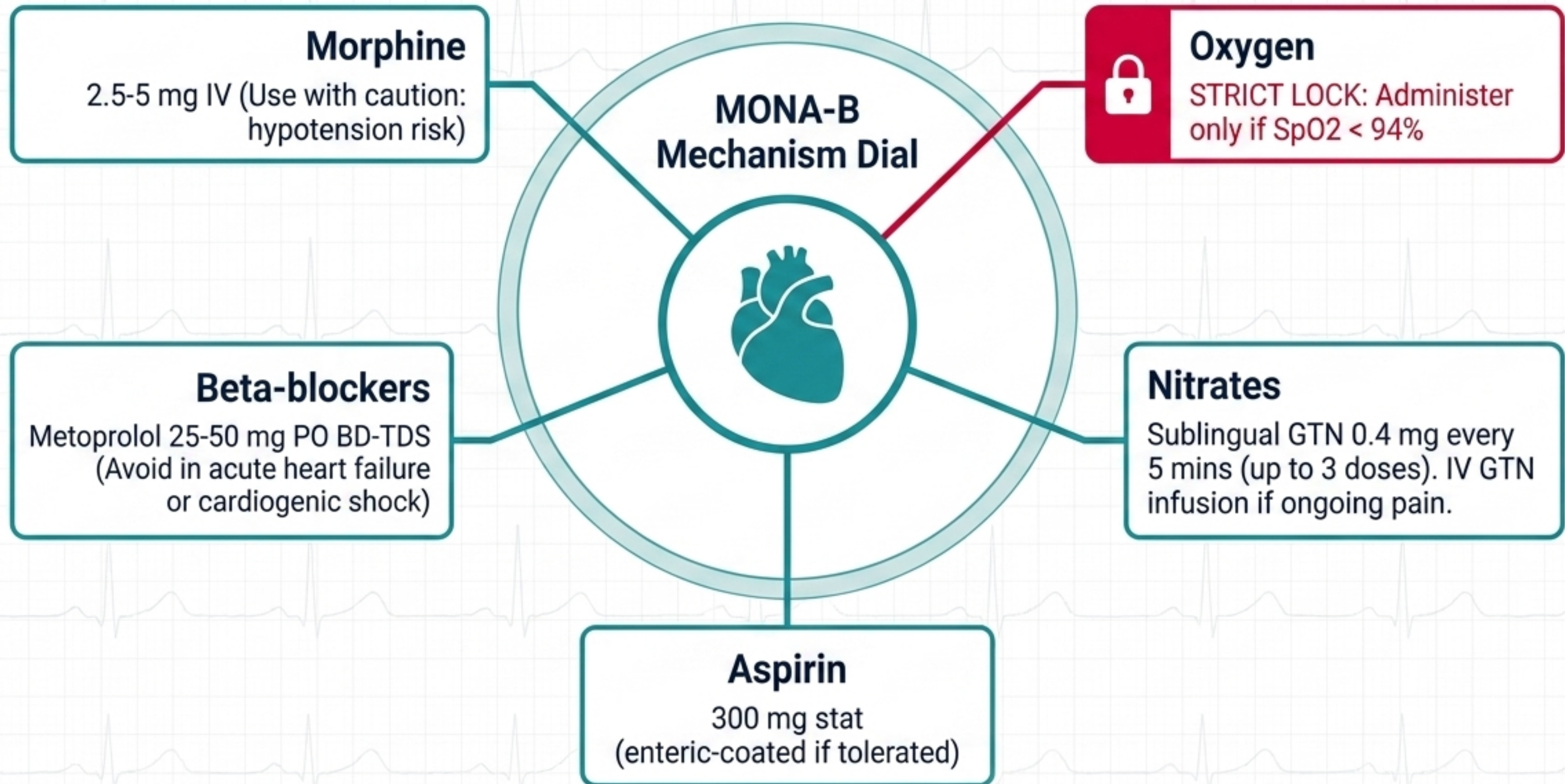


**Primary Goal**

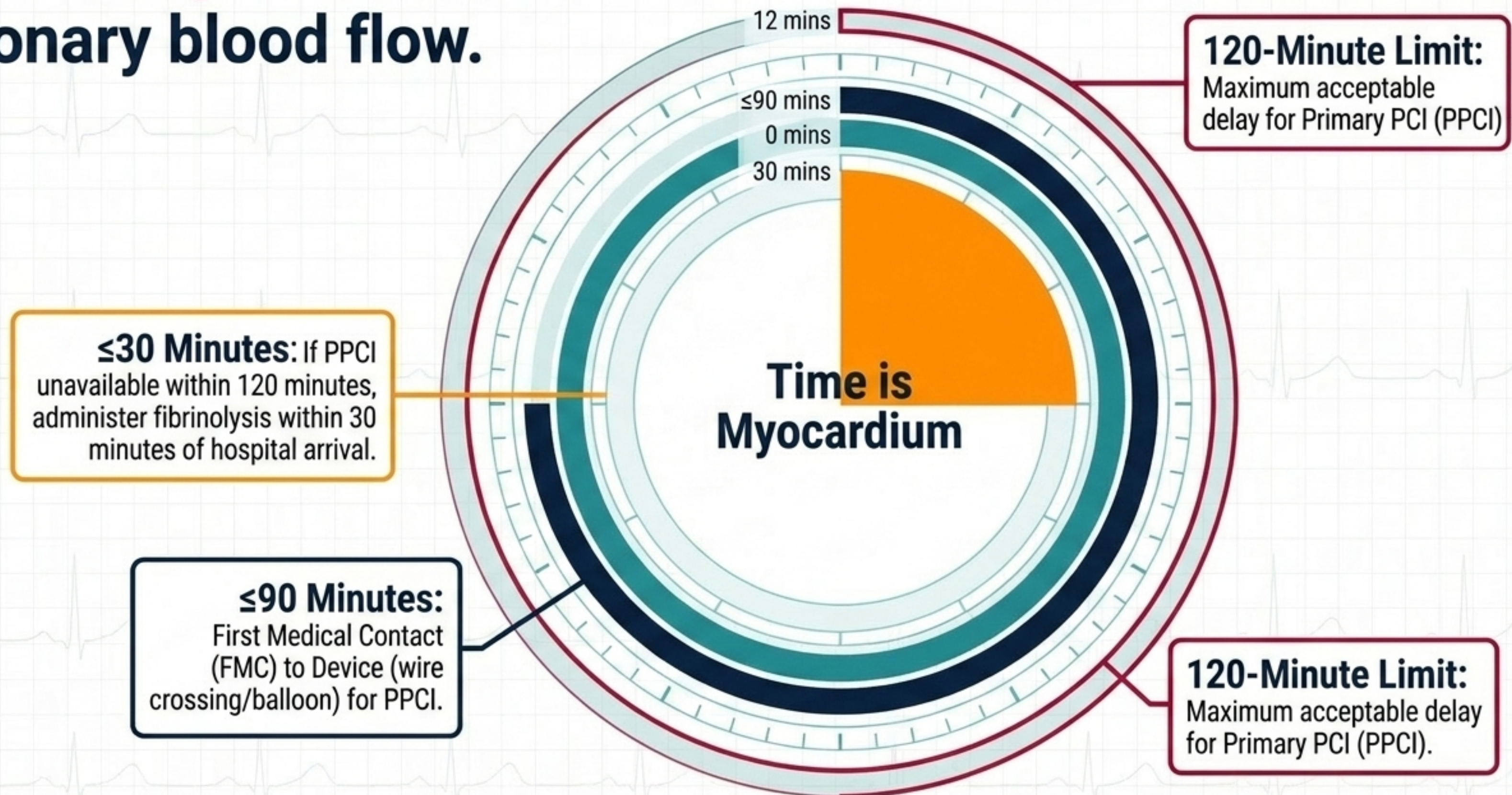
Immediate reperfusion

Risk stratification & timed angiography

# Initial Anti-Ischaemic Therapy (MONA-B)



# STEMI Target: Restore coronary blood flow.



## Tenecteplase (Metalyse®) - Fibrinolytic IV Bolus (PBS General Benefit)



<60 kg: 30 mg



60-69 kg: 35 mg



70-79 kg: 40 mg



80-89 kg: 45 mg



≥90 kg: 50 mg



Contraindications: Active bleeding, prior intracranial haemorrhage, ischaemic stroke <3 months, suspected aortic dissection.

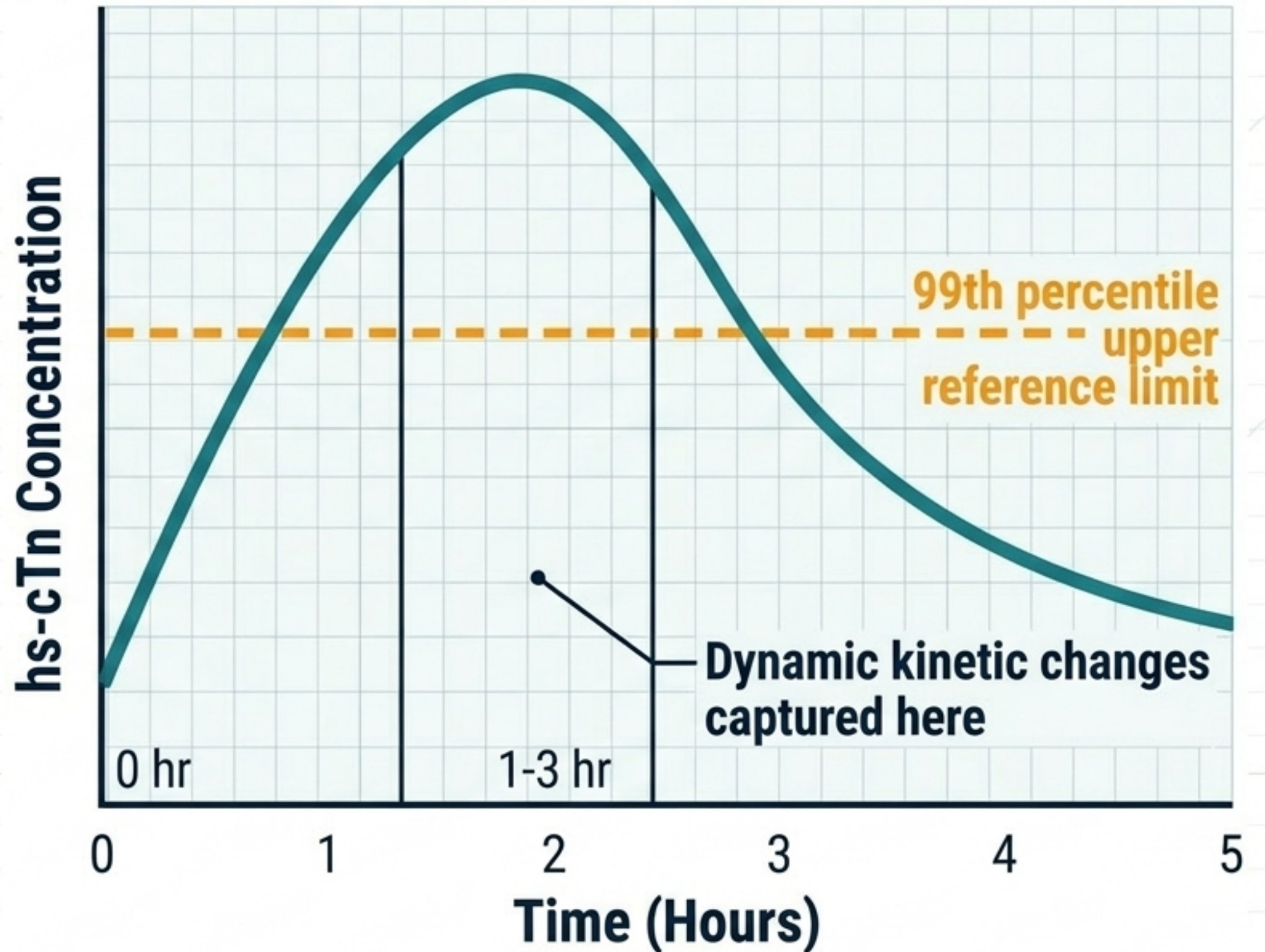
# Confirming Myocardial Injury

**Biomarker:** High-sensitivity cardiac troponin (hs-cTn).

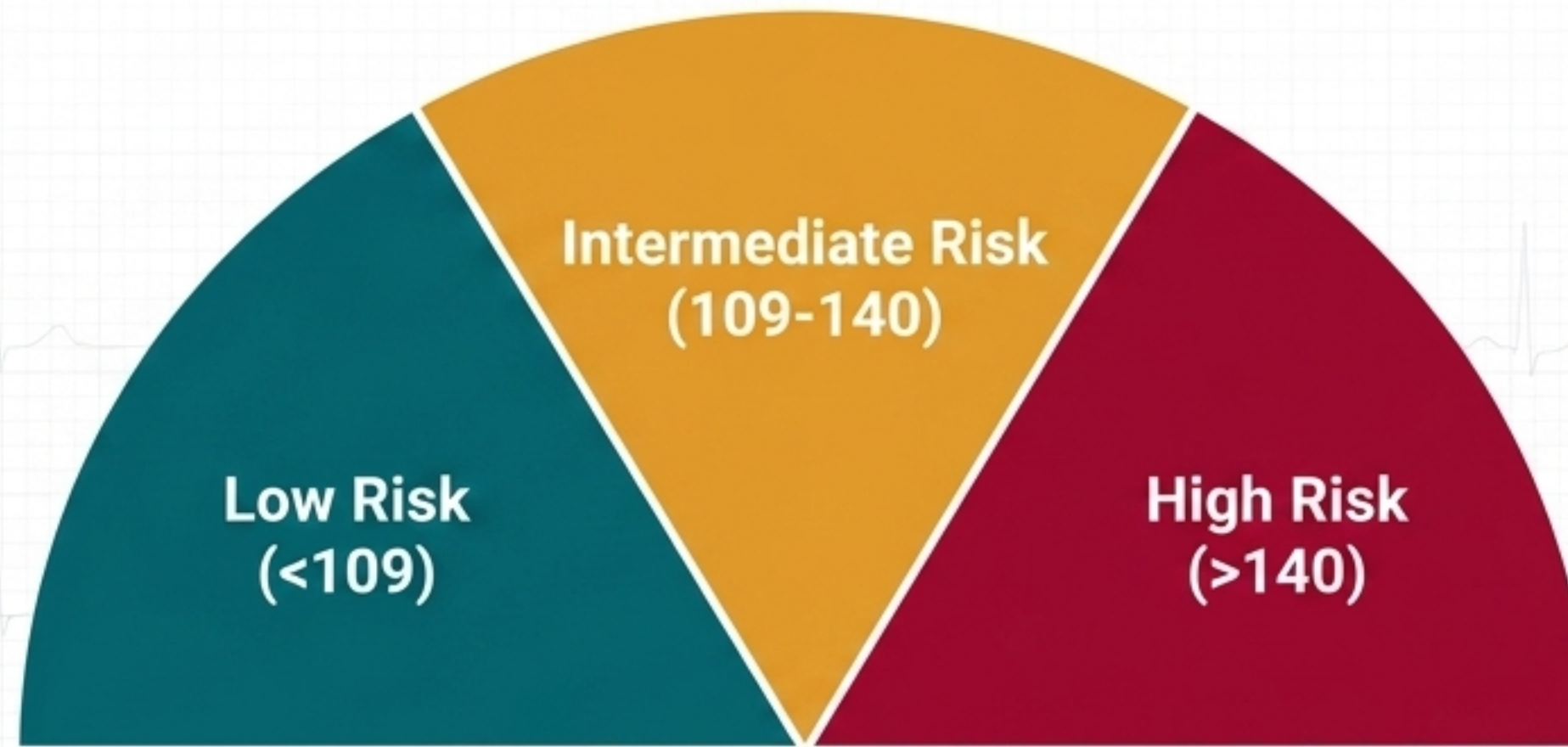
**The Pattern:** A clear rise and/or fall trajectory.

**Protocol:** Serial testing required at 0 hours and 1-3 hours to capture dynamic kinetic changes.

## Troponin Kinetics Curve



# NSTEMI/UA Risk Stratification (GRACE Score)



- No recurrent symptoms, haemodynamically stable.

**Action:** Conservative/ischaemia-guided strategy.

Angiography only if stress test positive.

- Dynamic ECG changes, troponin rise, diabetes, eGFR <60.

**Action:** Early invasive strategy.

**Angiography countdown:** 24-72 hours.

- Refractory angina, haemodynamic instability, heart failure, arrhythmias.

**Action:** Urgent invasive strategy.

**Angiography countdown:** <2 hours.

# Dual Antiplatelet Therapy (DAPT) post-ACS

## Ticagrelor (Brilinta®)

180 mg loading dose, then 90 mg BD.

No renal dose adjustment (use caution in severe impairment).

**PBS Authority Required.**

## Clopidogrel (Plavix®)

300-600 mg loading dose, then 75 mg daily.

Preferred in high bleeding risk or if Ticagrelor is contraindicated.

**PBS General Benefit.**

**Base: Aspirin 100 mg daily indefinitely**  
(Typically 12 months duration for P2Y12 Inhibitor)

# Acute Phase Anticoagulation

(Continued for 48 hours or until PCI. Bivalirudin may also be utilized depending on planned reperfusion strategy).



## Enoxaparin

Standard dosing

**RENAL ALERT: eGFR <30 mL/min**

Dose adjustment required for CrCl <30 mL/min (1 mg/kg once daily).



## Unfractionated Heparin

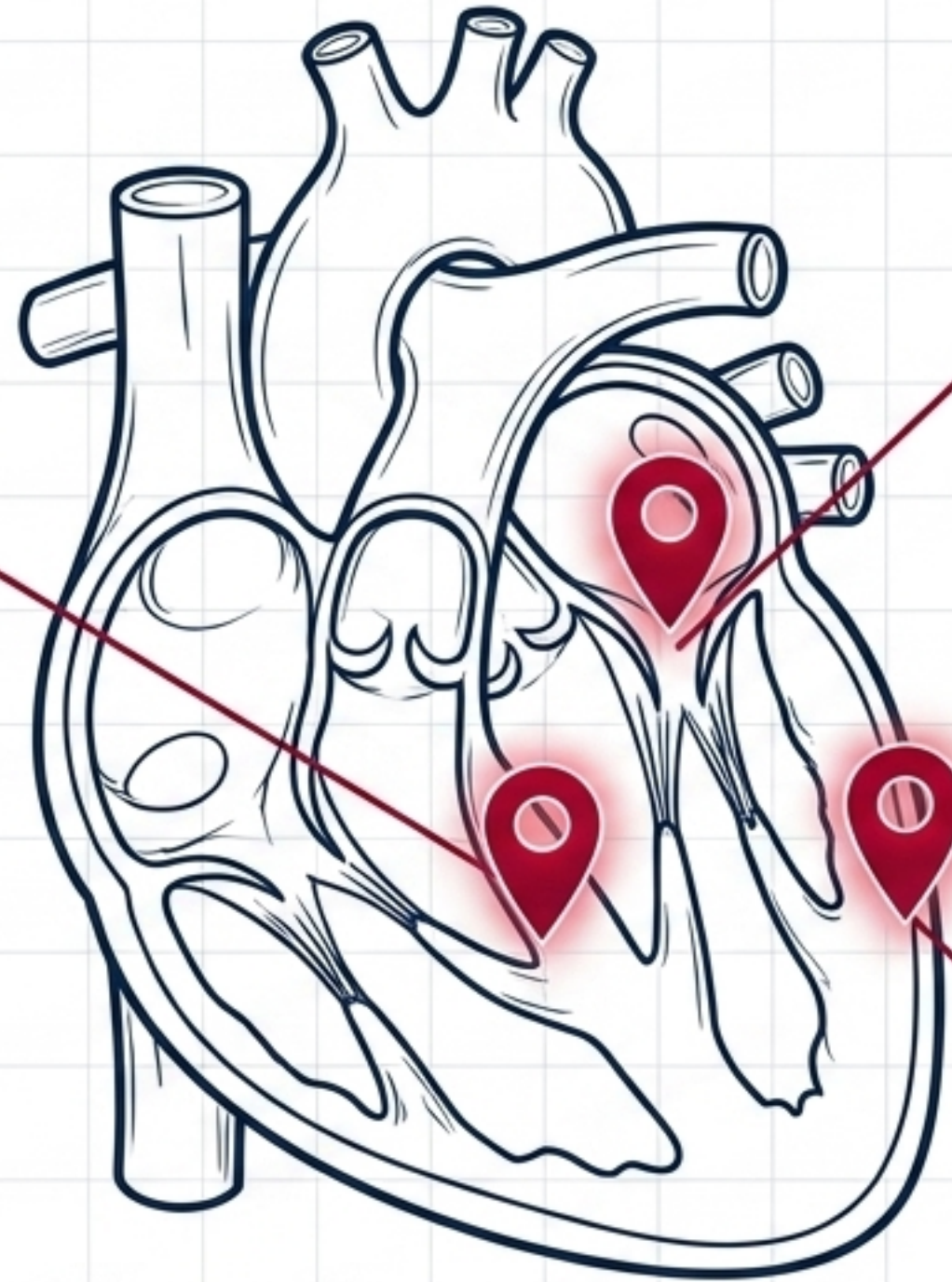
Preferred agent if patient has severe renal impairment or if urgent surgery is anticipated.

# High-Mortality Mechanical Emergencies

(Rare <1%, typically 3-7 days post-STEMI. Require immediate surgical consultation).

## Ventricular Septal Rupture (VSR)

New harsh pansystolic murmur, acute heart failure, shock.



## Papillary Muscle Rupture

Acute severe mitral regurgitation, pulmonary oedema.

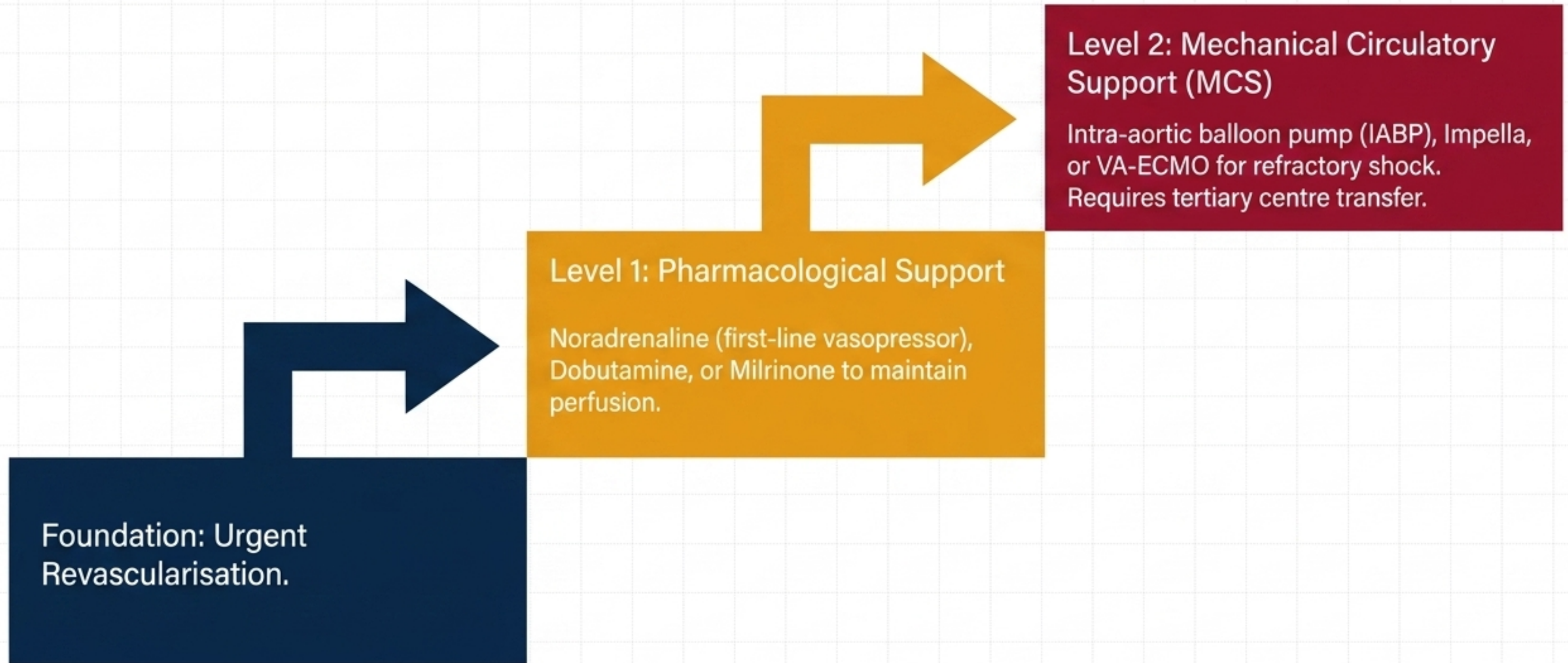
Characterized by a new apical systolic murmur.

## Free Wall Rupture

Cardiac tamponade and electromechanical dissociation.

Often fatal; requires emergent pericardiocentesis/surgery.

# Cardiogenic Shock Management



# Special Populations: Protocol Nuances



## Pregnancy

Diagnosis challenged by normal troponin changes.

Aspirin is safe. **AVOID** Statins and ACEi/ARB.

Low-radiation PCI preferred over fibrinolysis. Requires MDT.



## Paediatrics

Usually linked to congenital heart disease, Kawasaki, or anomalous arteries.

Use adult protocols with strict weight-based dosing.

Paediatric cardiology consult essential.



## Renal Impairment

High bleeding/thrombotic risk.

Ticagrelor preferred over clopidogrel.

Dose-adjust Enoxaparin/Eptifibatide. **AVOID** Fondaparinux if CrCl <30.

# Aboriginal and Torres Strait Islander Care Pathways

**Culturally Safe Care:** Actively involve Aboriginal Health Workers/Practitioners, ensure clear communication, and facilitate family involvement.

**Hospital**

**Patient**

**Community**

**System-Level Strategies:** Support regional PPCI networks, utilize patient-assisted travel schemes, and build strong referral links to Aboriginal Community Controlled Health Organisations (ACCHOs).

**Secondary Prevention:** Focus heavily on social determinants of health, adherence support, and community-based rehabilitation.

# Post-ACS Care & Secondary Prevention

## Lifelong Medications



**High-Intensity Statin:** Atorvastatin 80mg or Rosuvastatin 20-40mg. (Target LDL-C  $<1.8$  mmol/L or  $\geq 50\%$  reduction).



**ACEi/ARB:** Ramipril 2.5-10mg daily. (Crucial if LVEF  $\leq 40\%$ , hypertensive, diabetic, or CKD).



**Beta-Blocker:** Bisoprolol, Carvedilol, or Metoprolol succinate indefinitely (especially if LVEF  $\leq 40\%$ ).

## Lifestyle & Follow-Up



**Rehab & Review:** GP review 1-2 weeks. Cardiology review 6-12 weeks.



Accredited cardiac rehabilitation programme. **150 mins aerobic exercise/week.**

# The Chain of Survival: ACS Continuum

