



ECG Interpretation for the WACHS Chest Pain Pathway

Re-perfusion Criteria

⇒ Symptoms of myocardial ischaemia

AND ST elevation of 1 mm or more in 2 or more adjacent leads except V2 and V3 which require ST elevation of:

- 2.5 mm or more in men under 40 years
- 2 mm or more in men aged over 40 years or
- 1.5 mm or more in women

OR LBBB and haemodynamically unstable

OR LBBB and haemodynamically stable with positive modified Sgarbossa criteria (see below)

OR Posterior infarct (ST depression V1-V3); do posterior ECG (see below)

Symptoms of Myocardial Ischaemia

Pain or tightness in chest, jaw, neck, left arm, right arm or epigastrium and / or symptoms of dyspnoea, diaphoresis, syncope or fatigue.

Groups associated with atypical presentation

Female, people with diabetes, elderly.

High risk conditions

Central obesity, diabetes, autoimmune conditions, chronic kidney disease, HIV, Aboriginal peoples and Torres Strait Islander peoples.

STEMI equivalents (reperfusion indicated)

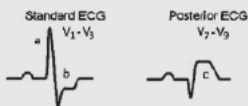
Diagnosis of STEMI in Left bundle branch block (LBBB) using modified Sgarbossa criteria:

1. Any lead with > 1 mm concordant ST elevation (QRS and ST in same direction) **OR**
2. Any lead in V₁-V₃ with > 1 mm concordant ST depression (QRS and ST in same direction) **OR**
3. Any lead with ST elevation more than 25% of a preceding S wave



Posterior Infarct

- a. R wave greater than S wave in V₁-V₂
- b. ST depression V₁-V₃ on standard ECG
- c. ST elevation V₇-V₉ on posterior ECG



Alternative causes of ST elevation

- Intracranial bleed
- Early repolarization
- Wellen's Syndrome
- Cardiomyopathy
- Brugada Syndrome
- Ventricular aneurysm
- Ventricular paced rhythm
- Coronary vasospasm
- LBBB
- Takotsubo cardiomyopathy
- Previous AMI
- Myocarditis
- Pericarditis
- Left ventricular hypertrophy
- hypokalaemia

ECG features considered ischaemic and high risk:

- Persistent or transient ST depression ≥ 0.5 mm ≥ 2 contiguous leads
- Transient ST elevation ≥ 0.5 mm in 2 contiguous leads
- New T wave inversion ≥ 2 mm ≥ 2 contiguous leads

References:

- ACSQHC Acute Coronary Syndrome Clinical Care Standard 2019
- Australian Clinical Guidelines for the Management of ACS 2016 (High Risk Features)
- NSW Government Pathway for Acute Coronary Syndrome Assessment (PACSA) 2021
- Sex specific cut-offs as provided by Ee Mun Lim – HOD Clinical Biochemistry Pharmacology and Toxicology, PathWest QEII

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