

3-12 Cardiac ischaemia v.1

If the patient is unconscious, signs of cardiac ischaemia primarily include:

- ST elevation or depression
- T wave flattening or inversion
- Arrhythmias, particularly ventricular
- Other haemodynamic abnormalities (hypo- or hypertension, tachy- or bradycardia)
- New or evolving regional wall motion abnormalities if echocardiography is used

If the patient is conscious, symptoms may include chest pain, breathlessness, dizziness, nausea and vomiting.

Have a high index of suspicion in patients with a pre-existing history or risk factors for cardiac ischaemia

START

- 1 Call for cardiac arrest trolley and 12-lead ECG machine.
- 2 Ensure adequate oxygenation and anaesthesia/analgesia.
- 3 Treat haemodynamic instability (Box A).
- 4 Apply CM5 continuous ECG monitoring (Box B). Obtain a 12-lead ECG as soon as possible.
- 5 If ischaemia does not resolve:
 - Call for help. Inform theatre team of problem. Stop or rapidly complete the surgery.
 - Start glyceryl trinitrate (GTN) (Box C).
 - EXTREME CAUTION with GTN if the patient is hypotensive.
- 6 Consider invasive arterial blood pressure monitoring.
- 7 Treat electrolyte abnormalities particularly potassium, magnesium and calcium.
- 8 Treat anaemia aiming for haematocrit >30%.
 - CAUTION – beware volume overload especially in heart failure.
- 9 If persistent ST elevation is present, consider need for anticoagulation, anti-platelet therapy and revascularisation in consultation with cardiology and surgical teams.

Box A: HAEMODYNAMIC INSTABILITY

- Cardiac arrest → 2-1
- Hypotension → 2-4
- Hypertension → 2-5
- Bradycardia → 2-6
- Tachycardia → 2-7

Box B: CM5 ECG CONFIGURATION

- Right arm (red) lead over upper right sternum.
- Left arm (yellow) lead 5th intercostal space under left nipple.
- Indifferent (green or black) lead on left shoulder.

Box C: GLYCERYL TRINITRATE (GTN) DOSE

- Consider sublingual administration.
- i.v.: 1% (1 mg.ml⁻¹) solution – start at 0.1ml.kg⁻¹.hr⁻¹, titrate against response.
- NOT RECOMMENDED IN CHILDREN.

Box D: AFTER THE EVENT

Admit to critical care environment and consult cardiology
Maintain head up position if practicable
Obtain serial 12-lead ECGs and cardiac enzymes