

iCCnet SA Management of Chest Pain/ Suspected Acute Coronary Syndrome



ACS Hospital Category 3

Patient presents to the Emergency Department with symptoms suggestive of Acute Coronary Syndrome

- Admit to an acute observation cubicle.
- Administer Oxygen 6-8 L/min, Aspirin 300mg and sublingual nitrates.
- Record and MO interpret 12 lead ECG within **10 mins of arrival** (if assistance required contact Cardiologist 08 8378 1133).
- Insert IV cannula.
- Obtain blood samples for: **RTropT, ELEC/CREAT, FBE, LFT, CK, CHOL, HDL, TRIG, GLU, APTT, INR.**
- Collect medical history, perform physical examination and record risk factors as per iCARnet Chest Pain Evaluation form.
- Continuous ECG monitoring, repeat 12 lead ECG at 15 minute intervals if ongoing chest pain.
- Administer morphine and anti-emetic if indicated.

- No ECG Changes AND
- Negative bedside Troponin T (RTropT)

- Angina at rest and prolonged > 20 mins **OR**
- New onset angina **OR**
- Recent acceleration of anginal pattern **OR**
- ECG changes-new ST ↓ or T ↓ **OR**
- Bedside Troponin T (RTropT) positive

- New or presumed new ST elevation ≥1 mm in 2 or more contiguous limb leads and 2 mm in ≥ 2 contiguous anterior chest leads
- New LBBB
- New ST ↓ in V1-V2 consistent with acute posterior MI

Low Risk Protocol

Unstable Angina/Non-ST Elevation Protocol

ST Elevation MI Protocol

Admit to Medical Ward

Admission Medications

- Aspirin 100-150 mg daily after a single loading dose of 300 mg
- If aspirin contraindicated consider clopidogrel
- Sublingual GTN PRN

BEWARE of hypotension with first ever use of GTN or if history of hypotension with GTN

Protocol MUST be completed unless a non-cardiac cause of symptoms is established

- For on-going or recurrent chest pain:
- Repeat ECG (up to 15 minutely until chest pain relieved)
 - Compare serial ECGs to identify potential ischaemic changes
 - If required, consult Cardiologist for assistance phone 8378 1133

Time 4 hr: ECG

- ECG for serial comparison
- Optional 4 hr bloods for RTropT

No ECG Changes
Neg RTropT

Time 8 hr: RTropT, ECG

- ECG for serial comparison

No ECG Changes
Neg RTropT

Refer for stress ECG. Discuss with iCARnet Cardiologist (08 8378 1133) regarding timing and type of stress test recommended

Neg ETT

Pos ETT

Change to NSTEMI/USAP Pathway
Admit to Monitored Bed
Consultation with Cardiologist required for consideration for immediate transfer

- If Patient Discharged Home Prior to Stress ECG PRE-DISCHARGE CHECK:**
- No on-going chest pain (if chest pain continues d/w cardiologist)
 - All ECG's and RTropT's are negative
 - Advice given regarding recurrent chest pain post discharge
 - Local Medical Officer follow up arranged

- Consult with Cardiologist (08 8378 1133) for consideration**
- Elective Coronary Angiography **OR**
 - Imaging Stress Test
 - Continue Aspirin, Statin, β Blocker and Anti-anginal medication as indicated

All patients should receive CVD risk management (5 or 10 yr) and advice/referred regarding cardiovascular risk reduction strategies

Admit to High Dependency Unit OR Medical Ward (on telemetry)

Admission Medications - Intermediate Risk ACS Patients

- Aspirin 150-300 mg daily
- Cleaxane: 1 mg/kg every 12 hrs by subcutaneous injection for 48 hrs in people with normal renal function
- +/- GTN - If BP > 100 mmHg commence infusion (via syringe driver) 5 µg/min increments, max 20 µg/min.
- **Beware of hypotension with first ever use of GTN**
- Statins: Recommended for all patients with a total cholesterol ≥ 4.0 mmol/L

- For on-going or recurrent chest pain:
- Repeat ECG (up to 15 minutely until chest pain relieved)
 - Compare serial ECGs to identify potential ischaemic changes.
 - If required, consult Cardiologist for assistance phone 08 8378 1133

Time 6 hr: RTropT, CK, ECG

NEG RTropT & no ECG changes

POS RTropT or new ECG changes

Time 12 hr: RTropT, CK, ECG

NEG RTropT & no ECG changes

POS RTropT or new ECG changes

Re-assess risk: based on clinical history, discussion with Cardiologist

LOW RISK

HIGH RISK

Refer to stress ECG. Discuss with Cardiologist (08 8378 1133) regarding timing and type of stress test recommended.

If Patient Discharged Home Prior to Stress ECG PRE-DISCHARGE CHECK:

- No on-going chest pain (if chest pain continues d/w cardiologist)
- All ECG's and RTropT's are negative
- Advice given regarding recurrent chest pain post discharge
- Local Medical Officer follow up arranged
- Primary risk factor reduction advised

Retrieval
MedSTAR (13 78 27)

All patients should have access to, and be actively referred to, comprehensive ongoing prevention and cardiac rehabilitation services

Admit to High Dependency Unit OR Medical Ward (on telemetry)

Troponin Positive or Otherwise High Risk

- Persistent or dynamic ECG changes of ST segment depression greater than or equal 0.5 mm in 2 or more contiguous leads
- Sustained ventricular tachycardia
- Syncope
- Haemodynamic compromise - systolic BP < 90 mmHg, cool peripheries, diaphoresis, Killip Class > 1, and/or new-onset mitral regurgitation
- Left ventricular dysfunction (EF < 0.40)
- Prior PCI within 6 months or prior CABG
- Diabetic
- Chronic kidney disease (GFR < 60 mL/min)

Admission Medications - High Risk ACS Patients

- Aspirin 150-300 mg daily
- GTN if BP > 100 mmHg commence infusion (via syringe driver) 5 µg/min increments, max 20 µg/min

BEWARE of hypotension with first ever use of GTN or if history of hypotension with GTN

- Cleaxane: 1 mg/kg every 12 hrs by SC injection for 48 hrs in people < 75 yr old with creatinine clearance > 30mL/min or 1 mg/kg every 24 hours for people > 75 yr or creatinine clearance less than 30mL/min
- Clopidogrel 300 mg loading dose then 75mg daily unless contraindicated
- Consider other antiplatelet therapy after discussion with Cardiologist
- Adjunctive Medications
- β Blocker: Initial dose Atenolol 25 mg/day or Metoprolol 25 mg twice daily
- Increase dose until blockade is achieved (HR between 55-60)
- Verapamil or Diltiazem where β blockers are contraindicated
- Statins: Recommended for all patients with a total cholesterol ≥ 4.0 mmol/L

Early Invasive Management Indicated

- Contact Cardiologist 08 8378 1133
- Transfer for Coronary Angio within 24-48 hrs unless contraindicated - see STEMI protocol
- Continue established therapy

Whilst awaiting transfer or for conservative management

- Monitor for:
- On-going or recurrent chest pain
 - Haemodynamical instability (shock)
 - CHF
 - Arrhythmia - VT/VF/AF
 - Bleeding

One or more present

None present: Continue established therapy whilst awaiting transfer.

Time 6 hr: CK, ECG, CP Observations

Time 12 hr: CK, ECG, CP Observations

Time 24 hr: RTropT, CK, ECG, CP Observations

Coronary angiography +/- revascularisation

Admit to High Dependency Unit Administer Thrombolytics < 30 mins if indicated OR Medical Ward (on telemetry)

Admission Medications

- Within 30 mins TNK 0.5 mg/kg over 30 seconds (max dose 50mg)
- Clopidogrel - 300 mg loading dose then 75mg daily
- Aspirin 150-300 mg daily
- Cleaxane: See dosage table (right)
- GTN if BP > 100mmHg Commence infusion (via syringe driver) 5 µg/min increments, max 20 µg/min

Cleaxane Dosage

- Loading Dose**
- < 75 years: 30 mg iv Bolus plus 1 mg/kg SC Max. 100 mg dose
 - ≥ 75 years: 0.75 mg/kg SC (No IV Bolus) Max. 75 mg dose

If CrCl > 30mL/min

If CrCl ≤ 30mL/min

Early Transfer for CORONARY indicated

NO

YES

- Post Loading Dose < 75 years:**
- 1 mg/kg SC q 12hr Max. dose 100 mg for first post-loading dose

- Post Loading Dose ≥ 75 years:**
- 0.75 mg/kg SC q 12hr Max. dose 75mg for first post-loading dose

If CrCl is unknown at time of diagnosis use normal renal function

Monitor and Observe:

- ECG Monitor Pulse, BP, O2 saturation
- 30, 60, 90 min ECG
- 6 hr ECG, CK (repeat RTropT if initial RTropT neg)
- 12 hr ECG, CK
- 24 hr ECG, RTropT, CK

Contraindications to Invasive Treatment

- Significant co-morbidity eg. renal failure, dementia
- Severe vasc. access problems
- Known severe CAD and designated not for further revascularisation attempts

Non Invasive Medical Treatment Discharge Medications may Include:

- Clopidogrel
- Aspirin
- β Blocker
- Nitrates
- Statin
- Ace inhibitors

Re-infarction

- Recurrent chest pain and/or
- ECG changes > 24 hrs post admission and/or
- < 14 days since last positive RTropT

Time 0, 6, 12 hr, CKMB

Complications

- Failed reperfusion (< 50% ST-segment resolution at 60-90 min, and ongoing chest pain)
- Arrhythmia
- CCF/Shock
- Bleeding/Stroke
- Significant co-morbidity increasing risk of medical transport

Retrieval

ICARnet (08 83781133)/ MedSTAR (13 78 27) conference call

STABLE

Medical Transport (RFDS/SAAS)

- ASAP
- Beta Blockers, GTN Patch

All patients should have access to, and be actively referred to, comprehensive ongoing prevention and cardiac rehabilitation services