iCCnet CHSA Management of Chest Pain/ Suspected Acute Coronary Syndrome

Integrated Cardiovascular Clinical Network CHSA

ACS Hospital Category 1

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

- **Clinical assessment, ECG and bloods must be performed by a Chest Pain Capable Person* within 10 minutes of presentation**
- Admit to an acute observation cubicle with routine haemodynamic obs
- Administer Oxygen 6-8 L/min until pulse oximetry can prove O_2 sats > 94% on room air, Aspirin 300 mg 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, GLU, INR (if indicated)
- Collect medical history, perform physical examination and record risk factors
- Continuous ECG monitoring, repeat 12 lead ECG at 15 minute intervals if ongoing chest pain

* Doctor/Nurse capable of reliable recognition of acute ST elevation

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

Low Risk 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 pain is not relieved 30 mins post presentation, strongly consider contacting Cardiologist **phone 08 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

Ensure differential diagnoses have been constructed and worked through

Consider for stress ECG and cardiac assessment. Discuss with iCARnet Cardiologist (08 8378 1133) regarding timing and type of stress ECG recommended

Recurrent chest Pain or new ECG changes or RTropT +ve

POS RTropT or new ECG changes

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

Neg Stress ECG

Pos Stress ECG

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
- No Patient should be discharged with a RTropT>100 ng/L without Cardiologist consultation
- 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

- 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

Unstable Angina/Non-ST Elevation Protocol

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

Admission Medications – Intermediate Risk ACS Patients

- Aspirin 150-300 mg daily
- Clexane: 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 pain is not relieved 30 mins post presentation, strongly consider contacting Cardiologist phone **08 8378 1133**

Time 6 hr: RTropT, CK, ECG

NEG RTropT & no ECG changes / *POS RTropT or new ECG changes* → *Contact Cardiologist ASAP*

Time 12 hr: RTropT, CK, ECG

NEG RTropT & no ECG changes / *POS RTropT or new ECG changes* → *Contact Cardiologist ASAP*

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 ECG 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
- No Patient should be discharged with a RTropT>100 ng/L without Cardiologist consultation
- Advice given regarding recurrent chest pain post discharge
- Local Medical Officer follow up arranged
- Primary risk factor reduction advised

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)

Contact Cardiologist ASAP 08 8378 1133
Consider for immediate transfer

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
- Clexane: 1 mg/kg every 12 hrs by SC injection for 48 hrs in people < 75 yr old with creatinine clearance > 30 mL/min or 1 mg/kg every 24 hours for people > 75 yr or creatinine clearance less than 30 mL/min
- Clopidogrel 300 mg loading dose then 75 mg 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
- Haemodynamic instability (shock)
- CHF
- Arrhythmia – VT/VF/AF
- Bleeding

One or more present

None present: Continue established therapy whilst awaiting transfer.

Retrieval
MedSTAR (13 78 27)

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

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

- 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

ST Elevation MI Protocol

Admit to High Dependency Unit
Administer Thrombolytics < 30 mins if indicated
Contact iCARnet Cardiologist ASAP 08 8378 1133
Consider for immediate transfer

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

Clexane 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

Post Loading Dose
< 75 years: 1 mg/kg SC q 12hr Max. dose 100 mg for first post-loading dose
≥ 75 years 0.75 mg/kg SC q 12hr Max. dose 75 mg for first post-loading dose

Post Loading Dose 1 mg/kg SC daily

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

Early Transfer for Coronary Angiography indicated

NO / YES

Monitor and Observe while awaiting transfer:
- 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
- GTN patch

Contraindications to Invasive Treatment
- Significant co-morbidity eg. renal failure, dementia, elderly, frail
- Known severe CAD and designated not for further revascularisation attempts
- Respecting patient's choices

Non Invasive Medical Treatment Discharge Medications may Include:
- Clopidogrel
- β Blocker
- Statin
- Aspirin
- Nitrates
- 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

If condition changes
- 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

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

Government of South Australia
SA Health

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