

The immediate management of acute coronary syndromes in primary care

Key practice points

- Perform an ECG in all patients where the possibility of a cardiac cause of chest pain cannot be reasonably excluded
- Immediate transfer to hospital is recommended for all patients with symptoms suggestive of an acute coronary syndrome, where a cardiac cause cannot be reasonably excluded, regardless of the results of their ECG
- While awaiting transfer:
 - Monitor blood pressure, heart rate and oxygen saturation
 - Give sublingual glyceryl trinitrate and IV morphine (if required) for pain relief
 - Give 300 mg aspirin
 - Only administer oxygen if the patient is breathless, oxygen saturation is <93%, has heart failure or is in cardiogenic shock
- A blood sample for measuring troponin levels may be considered if time and clinical circumstances permit

Acute coronary syndrome refers to an unstable condition with sudden occlusion of the coronary arteries, usually caused by plaque rupture. The spectrum ranges in severity from angina to transmural myocardial infarction. All patients who present with symptoms consistent with a cardiac cause require immediate investigation and treatment, including:¹

- Chest pain and/or pain in areas such as the upper arms, back or jaw, that lasts longer than 15 minutes
- Chest pain in combination with nausea and vomiting, sweating, breathlessness, dizziness or feeling light-headed
- A sudden deterioration in previously stable angina, with chest pain episodes lasting longer than 15 minutes, recurring frequently, following little or no exertion

A 12-lead ECG should be performed immediately in all patients with symptoms suggestive of a recent or current acute coronary syndrome.² Immediate transfer to hospital is recommended where a cardiac cause cannot be reasonably excluded, regardless of the results of the patient's ECG, i.e. a normal ECG does not exclude the possibility of a cardiac cause.

The risk of cardiac arrest is increased during or after an acute coronary event and emergency resuscitation medicines, e.g. injectable adrenaline, and a defibrillator should be close at hand. Monitor and record the patient's blood pressure, heart rate and oxygen saturation levels.

Additional investigations should not delay referral to secondary care. Serum troponin testing may be useful in primary care:


- When investigating patients presenting 24 – 72 hours after a single episode of chest pain, e.g. the “Monday morning” consultation
- As a follow-up investigation of unexplained chest pain when no ECG changes are present
- To investigate atypical symptoms of a possible acute coronary syndrome

Full blood count, creatinine, electrolytes, glucose and lipids may also be useful tests and these can be performed on the same blood sample used to measure serum troponin, if time and clinical circumstances permit.³

Treatment for all patients with acute coronary syndromes

Sublingual glyceryl trinitrate (GTN) is used initially for symptom relief in patients with chest pain due to a cardiac cause. Under medical supervision (i.e. while monitoring the patient), the maximum recommended dose of GTN is one to two sprays (or sub-lingual tablets), given at five minute intervals, up to three times. Patients with a previous history of angina may have already taken one or two doses of GTN at home upon onset of symptoms.

GTN is contraindicated in patients with cardiovascular instability or those who have recently used a PDE5-inhibitor, e.g. sildenafil.

 For a complete list of contraindications to GTN see: www.nzf.org.nz/nzf_1324

An additional analgesic e.g. morphine, may also be necessary and some patients may require an antiemetic.


Dispersible aspirin 300 mg, should be given to all patients with an acute coronary syndrome, including those already taking aspirin; if enteric coated aspirin is the only formulation available the patient should chew the tablet.²

DO NOT administer oxygen to patients with an ST elevation acute coronary syndrome unless they:⁴

- Are breathless
- Are hypoxic, i.e. oxygen saturation < 93%
- Have heart failure
- Are in cardiogenic shock

This is a recent change in practice following findings that there was no evidence supporting the routine use of oxygen in patients with acute myocardial infarction.² In patients with a myocardial infarction and an oxygen saturation > 93%, oxygen treatment may actually increase left ventricular afterload due to arterial vasoconstriction.⁴

An additional antiplatelet and fibrinolysis may be appropriate if there will be a significant delay, i.e. more than two hours, in triaging and transporting patients with an acute coronary syndrome to hospital. This is most likely to apply in rural settings and discussion with an emergency medicine consultant or a cardiologist is recommended. Recommended medicines may include an antiplatelet (most likely ticagrelor 180 mg or clopidogrel 300 mg [75 mg for patients aged over 75 years]),⁵ and pre-hospital fibrinolysis, i.e. intravenous tenecteplase (TNK-tissue-type plasminogen activator) and enoxaparin (Clexane) if a percutaneous coronary intervention cannot be performed within two hours.⁴

 For further information, see: “The immediate management of acute coronary syndromes in primary care”, BPJ 67 (Apr, 2015).

References

1. National Institute for Health Care Excellence (NICE). Chest pain of recent onset: Assessment and diagnosis of recent onset chest pain or discomfort of suspected cardiac origin. NICE, 2010. Available from: www.nice.org.uk/guidance/cg95/chapter/guidance (Accessed Dec, 2015).
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3. Non ST-Elevation Acute Coronary Syndrome Guidelines Group and the New Zealand Branch of the Cardiac Society of Australia and New Zealand. New Zealand 2012 guidelines for the management of non ST-elevation acute coronary syndromes. N Z Med J 2012;125:122–47.
4. ST-Elevation Myocardial Infarction Guidelines Group, New Zealand Branch of Cardiac Society of Australia and New Zealand. ST-elevation myocardial infarction: New Zealand Management Guidelines, 2013. N Z Med J 2013;126:127–64.
5. New Zealand Formulary (NZF). NZF v42. 2015. Available from: www.nzf.org.nz (Accessed Dec, 2015).