



# Acute Coronary Syndrome

## **Aims:**

To ensure optimal care for patients with acute coronary syndromes attended by HEMS teams

## **Background:**

The term acute coronary syndrome (ACS) encompasses unstable angina and completed myocardial infarction. The final diagnosis is usually made based on clinical presentation, ECG findings, and biochemical testing. Simple angina is a separate entity that may cause an acute presentation of ischaemic heart disease but is not considered further here.

Patients thought to be suffering from acute coronary syndrome generally fall into three categories when assessed in the pre-hospital phase:

1. ST-elevation myocardial infarction (STEMI)
2. Patients with clinically suspected ACS and acute ischaemic changes on the ECG
3. Patients with clinically suspected ACS but a non-diagnostic ECG

Patients with STEMI will benefit from early revascularisation. Current evidence supports the use of primary percutaneous coronary angioplasty (PPCI) for this group. Regional networks have been developed to provide this service in the United Kingdom.

## Secondary transfers

When transporting patients by air to hospitals that do not have helipads on site (defined as a trolley push from the destination), a secondary transfer is required. This involves requesting a land ambulance to meet the helicopter at the designated landing site, unloading the patient from the aircraft, reloading them into the ambulance and continuing the journey to the hospital to unload again in the Emergency Department or PCI suite. This is not ideal and adds a significant delay to both the patient's journey time and the time for which the HEMS team are unavailable for further missions. Any hospital with an on-site helipad will usually offer a considerable time and resource advantage over alternative sites.

### **Policy:**

- The tasking of the aircraft for chest pain patients is complex and should follow locally agreed policies to ensure most effective use of the resource
- Once tasked, the HEMS team should utilise the journey time to identify hospitals near to the incident scene that are known to provide PPCI on site. An up to date list of PPCI provision in each catchment area should be maintained
- On arrival of the PHC team, the doctor should assess the patient and the 12 lead ECG
- Serial ECGs may be useful, particularly if the clinical condition of the patient changes or if the first ECG is non-diagnostic or has borderline features

## Patients with ST-Elevation MI

- If the estimated road journey time to the nearest PPCI centres is <30 minutes, the team should transport the patient to that PPCI centre
- If the estimated road journey time >30 minutes, the team should consider aeromedical transport of the patient to a hospital **with a helipad** if the total journey time is shorter than the road journey time to the **nearest** PPCI centre
- The pre-hospital team (pilot, paramedic, doctor) should make this triage decision together based on geography, weather and patient condition
- Patients will require other treatments such as oxygen, aspirin, clopidogrel, nitrates, and morphine. These should be administered according to local policy
- If the aircraft is available, it will be unusual for a predicted journey time to exceed 90 minutes and therefore pre-hospital thrombolysis will not be indicated

Patients with clinically suspected ACS and acute ischaemic changes on the ECG

- Should be taken to the nearest Emergency Department **that is at a hospital which offers on-site PPCI**. If transporting by air, this may require a secondary transfer
- Patients will require other treatments such as oxygen, aspirin, clopidogrel, nitrates, and morphine. These should be administered according to local policy

Patients with clinically suspected ACS but a non-diagnostic ECG

- Transport to the nearest Emergency Department is usually appropriate.
- Consideration should be given to offering a 'ground assist' option to this group of patients after a discussion with the conveying land crew
- Additional treatments may be necessary