Assessment of Acute Chest Pain

1 Care map information

Quick info:
Scope:
• assessment and diagnosis of acute chest pain in adults, in primary care
Out of scope:
• condition specific specialist management
• chronic chest pain
Definition [7]:
• chest pain is one of the most common challenges for clinicians – diagnosis includes:
  • conditions affecting organs throughout the thorax and abdomen; and
  • implications that vary from benign to life-threatening
  • potentially serious complications including:
    • ischaemic heart disease
    • aortic dissection
    • tension pneumothorax
    • pulmonary embolism (PE)
• overly conservative management of low-risk patients leads to unnecessary hospital admissions, test and investigations, procedures and anxiety

2 Information resources for patients and carers & healthcare providers

Quick info:
Patient and Carer information:
• chest pain - advice following your ED visit
• heart attack action plan
• New Zealand Heart Foundation:
  • Angina Action Plan
  • know your numbers
  • are you at risk of heart attack or stroke
  • taking control - my plan for heart health
  • taking control videos
  • a guide to recovery after a heart attack
  • staying well with heart failure
  • cardiac community online directory
  • healthy living advice
  • guidelines and patient resources
• managing your angina
• what happens during a heart attack
• how your heart works
• Heart Foundation Australia
• A mans guide to heart health
Healthcare provider information:
• supporting people to stay well with heart failure an E-learning course
• NZ Heart Foundation
• cardiac rehabilitation folder (postage cost)
• cardiac rehabilitation
3 Updates to this care map

Quick info:
Localised Map: Version 1.
DATE, 2012.

This care map has been updated in line with consideration to evidenced based guidelines.
For further information on contributors and references please see the care map's Provenance.

4 Hauora Maori

Quick info:
As a practitioner you will work with Maori whanau/families. Each Maori whanau is diverse with their own set of values and beliefs, inherited, practised and passed down from generation to generation.
There are some important things that you should be mindful of when working with Maori individuals and their whanau from a holistic approach to working in a Whanau ora or family / whanau centred way.
Key enablers that you should be aware of when working with Maori whanau/families are:

• building relationships and gaining trust
• effective communication with whanau /families
• understanding and involving whanau/ families in the treatment planning and care management
• practical things to be mindful of when working with Maori whanau so that you do not breech Tikanga/Principles and practices that are important in Te Ao Maori/the Maori world

Common terms and definitions are noted here.

5 Pasifika

Quick info:
Our pasifika community:

• is a diverse and dynamic population
  • more than 22 nations represented in New Zealand
  • each with their own unique culture, language, history, and health status
  • share many similarities which we have shared with you here in order to help you work with pasifika patients more effectively

The main Pacific nations in New Zealand are
  • Samoa, Cook Islands, Fiji, Tonga, Niue, Tokelau and Tuvalu

Acknowledging The FonoFale Model (pasifika mode of health) when working with pasifika peoples and families.
Acknowledging general pacific guidelines when working with pasifika peoples and families:

• cultural protocols and greetings
• building relationships with your pacific patients
• involving family support, involving religion, during assessments and in the hospital
• home visits
• pasifika phrasebook

6 Patient Presents with Chest Pain or Cardiac Symptoms

Quick info:
Patient presents with chest pain or symptoms which could possibly be cardiac in origin.

7 RED FLAGS
Quick info:

Arrange immediate assessment in the Emergency Department (ED) for those patients with chest pain AND with any of the following associated symptoms[1]:

• hypotension or other signs of under-perfusion
• tachycardia or bradycardia
• pulmonary oedema, cyanosis
• change in breathlessness at rest
• pale, sweaty, or clammy
• distressed

The following conditions require a rapid assessment and immediate emergency transfer to hospital by ambulance [2]:

• pneumothorax
• aortic dissection
• pulmonary embolism
• oesophageal perforation

**Immediate referral to Emergency Department:**

• the referring clinician is required to arrange the transfer of care
• in addition to arranging Ambulance Transfer, please call ED at Whanganui Hospital on 06 348 3197
• a clinical handover should take place over the phone and followed up with necessary clinical documentation
• please note: The Emergency Department requires formal documentation (clinical assessment, investigations and working diagnosis/problem list and any intervention to date)

8 Initial Assessment

Quick info:

**NB: history taking must NOT unnecessarily delay interventions or definitive care:**

**Assessment and management of chest pain [2]:**

• needs to be decisive and quick
• the main challenge is not to miss cardiac or other life threatening causes, such as:
  • aortic dissection
  • acute coronary syndrome
  • pneumothorax
  • pulmonary embolism
  • oesophageal perforation

**Key features of history include:**

• history of ischaemic heart disease
• diabetes
• renal impairment
• smoking
• family history of ACS at a very young age (20’s and 30’s)
• an ECG recording, if possible

**An initial assessment should include [2]:**

• a quick assessment of the symptoms – typical acute coronary syndrome symptoms include:
  • central crushing or band-like chest pain
  • radiation to neck, jaw or upper limbs
  • associated nausea, vomiting, sweating, or shortness of breath
• acute coronary syndrome may also present with “atypical symptoms” including:
  • burning, sharp or pleuritic pain
  • pain to right arm
• indigestion, nausea, vomiting fatigue
• shortness of breath
• paroxysmal nocturnal dyspnoea
• tooth or jaw pain

Females can present with atypical symptoms and often late.

If acute coronary syndrome is suspected, arrange immediate emergency transfer to hospital by ambulance [2].

Other conditions, aside from acute coronary syndrome also require a rapid assessment and immediate emergency transfer to hospital by ambulance [2].

**Key features of examination include:**
• pulse
• blood pressure
• signs of failure
• respiratory rate
• raised jugular venous pressure (JVP)
• oedema
• lung sounds
• heart sounds
• very brief abdominal exam (? AAA)

**ECG:**
• ST elevation or depression
• T wave inversion

**Consider differential diagnosis.**

9 Differential Diagnosis

Quick info:
Consider a differential diagnosis, including:
• pneumothorax
• pulmonary embolism
• aortic dissection
• oesophageal rupture
• interabdominal pathology
• psychogenic

10 Pulmonary Causes

Quick info:
Pulmonary causes of chest pain include [2]:
• pulmonary embolism (PE)
• pneumonia
• pneumothorax
• pleuritis
• asthma

12 Gastrointestinal Causes

Quick info:
Gastrointestinal causes of chest pain include [2]:

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Assessment of Acute Chest Pain

Medicine > Cardiology > Assessment of acute chest pain

- oesophageal perforation/rupture
- gastro-oesophageal reflux disease (GORD)
- oesophagitis
- oesophageal motility disorders, including oesophageal spasm
- peptic ulcer disease
- pancreatitis
- biliary disease

13 Cardiac Causes

Quick info:
Cardiac causes including vascular causes could include:
- aortic dissection
- acute coronary syndrome
- pericarditis
- stable angina

14 Non-Cardiac Causes

Quick info:
Non-cardiac causes could include:
- pulmonary
- gastrointestinal
- musculoskeletal chest pain
- psychogenic

15 Musculoskeletal Chest Pain

Quick info:
Musculoskeletal causes of chest pain include:
- costochondritis [2]
  - inflammation of costal cartilages
  - may include sternal articulations
  - no swelling
- painful xiphoid syndrome
  - pain over xiphoid process reproduced by palpation
- rib fracture or trauma
  - pain over involved rib [2]
- sternoclavicular arthritis
- precordial catch syndrome
- herpes zoster or postherpetic neuralgia
Features of musculoskeletal pain include [2]:
- usually localised
- ache or sharp
- positional
- may be reproduced on turning or arm movement
- rheumatological diseases may cause musculoskeletal pain via thoracic joint involvement
Assessment of Acute Chest Pain
Medicine > Cardiology > Assessment of acute chest pain

Chest wall pain should be treated with analgesia, e.g. NSAIDS.

16 Aortic dissection

Quick info:
Clinical features [2]:
- abrupt onset of chest pain, or pain between the scapulae
- pain tearing or ripping in nature
- pain often worst at symptom onset
- as other vessels become involved, will see:
  - stroke symptoms (carotid artery)
  - cardiac tamponade (aortic root)
  - aortic regurgitation (aortic root)
  - abdominal/flank pain/limb ischaemia (abdominal aorta/renal arteries, iliac arteries)
  - decreased pulsation in radial, femoral and carotid arteries

Immediate referral to Emergency Department (ED):
- the referring clinician is required to arrange the transfer of care
- in addition to arranging Ambulance Transfer, please call ED at Whanganui Hospital on 06 348 3197
- a clinical handover should take place over the phone and followed up with necessary clinical documentation
- please note: The Emergency Department requires formal documentation (clinical assessment, investigations and working diagnosis/problem list and any intervention to date)
- if time allows before arrival of ambulance put in an IV line and provide IV analgesia

17 Acute coronary syndrome (ACS)

Quick info:
The following symptoms may indicate acute coronary syndrome (ACS) [3]:
- tight, dull, or heavy pain in the chest (retrosternal or left chest) and/or other areas, e.g. arms, back, or jaw, lasting longer than 15 minutes
- chest pain associated with:
  - nausea and vomiting
  - marked sweating
  - breathlessness
  - a combination of the above
- chest pain associated with haemodynamic instability
- new onset chest pain, or abrupt deterioration in previously stable angina, with:
  - recurrent chest pain occurring frequently; and
  - with little or no exertion; and
  - episodes often lasting longer than 15 minutes

ECG changes [2]:
- ST segment elevation
- ST segment depression
- T wave inversion
- pathological Q waves
- new left bundle branch block (LBBB)
- note that a normal resting 12-lead ECG does not rule out ACS

If you think there is a moderate to high risk that this is ACS follow the "ACS Suspected" Pathway.
18  Pericarditis

Quick info:

**NB: if pericarditis is suspected and patient is unwell or diagnostic uncertain refer to ED.**

Typically presents in patients in their 20’s.

Typical features of acute pericarditis are as follows [2]:

- typically preceded by a viral illness
- retrosternal or left precordial chest pain:
  - radiates to the trapezius ridge
  - sharp or stabbing in nature
  - can be pleuritic or simulate ischaemia
  - varies with posture, e.g. worse when lying down – sitting up relieves pain
- shortness of breath (orthopnoea)
- fever – may be absent in elderly patients
- malaise
- myalgia
- nausea

Characteristic findings of ECG [4]:

- resembles acute myocardial infarction
- tachycardia
- concave ST segment elevation
- PR segment **depression** in Lead II and PR segment **elevation** in aVR

19  Stable angina

Quick info:

Stable angina is typically brought on by exercise, cold weather and emotional stress.

Angina that is becoming more frequent or occurs at rest is NOT stable angina.

Suspect angina in people presenting with tight, dull, or heavy chest discomfort which is [5,6]:

- retrosternal or left-sided, radiating to the left arm, neck, jaw, or back
- associated with exertion or emotional stress and relieved within several minutes by rest or glycercyl trinitrate (GTN)
- precipitated by cold weather or a meal

Some people present with atypical symptoms, including [5,6]:

- breathlessness
- nausea
- epigastric discomfort or burping

Atypical symptoms are particularly likely in [5]:

- older people
- women
- those with diabetes:
  - pain may be absent
  - may present simply with breathlessness and evidence of heart failure

Angina pain:

- is not usually sharp or stabbing or influenced by respiration [6]
- is reproducible [2]
- usually only lasts for minutes [2]

ECG changes consistent with coronary artery disease [3]:

- ischaemia or previous infarction:
Assessment of Acute Chest Pain

Medicine > Cardiology > Assessment of acute chest pain

- pathological Q waves in particular
- left bundle branch block (LBBB)
- ST-segment and T wave abnormalities, e.g. flattening or inversion
- NB: ECG may be normal

20 Psychogenic Causes

Quick info:
Psychogenic causes of chest pain include:
- panic disorder
- anxiety
- depression
- somatoform disorders
Overview
This document describes the provenance of Whanganui Regions Assessment of Acute Chest Pain Pathway. This localised pathway was last updated in March 2015.

The purpose of implementing the CCP Programme in our District is to:

- Enhance accuracy of referrals
- Use best practice guidelines
- Have all information found in one place
- Enhance partnerships and collaboration across services
- Improve patient outcomes through seamless care across primary and secondary care

To cite this pathway, use the following format:

Editorial methodology
This care map has been based on a Map of Medicine Care Map developed according to the Map of Medicine editorial methodology. The content of the Map of Medicine care map is based on high quality guidelines and practice-based knowledge provided by contributors with front-line clinical experience (see contributors section of this document). This localised version of the evidence-based, practice informed care map has been peer-reviewed by the WDHB and WRHN Collaborative Clinical Directors and Leaders Forum and with stakeholder groups.

Consumer engagement
Development of the Whanganui Collaborative Clinical Pathways focuses on person-centred care and an experience based co-design approach where consumers are invited to consult with the Health Promoter / Community Developer (who sits on each pathway working group). Consumers are asked prior if possible, or if not at the very start of the pathway process to share their experiences to assist in designing services that work for them and their families, critiquing and feeding back on suitable consumer information and resources which can then be incorporated into the pathways. Feedback obtained ensures we address consumer challenges and needs within the pathway and provide suitable services, information and resources for consumers. Additional information on patient centred care is provided by following this link and experience based co-design of healthcare services at http://www.kingsfund.org.uk/projects/ebcd.

References

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<td>1</td>
<td>Institute for Clinical Systems Improvement (ICSI). Diagnosis and treatment of chest pain and acute coronary syndrome (ACS). Bloomington, MN: ICSI; 2009</td>
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Disclaimers
CCP Leadership Team, Whanganui

It is not the function of the CCP Leadership Team to substitute for the role of the clinician, but to support the clinician in enabling access to know-how and knowledge. Users of the Map of Medicine are therefore urged to use their own professional judgement to ensure that the patient receives the best possible care. Whilst reasonable efforts have been made to ensure the accuracy of the information on this online clinical knowledge resource, we cannot guarantee its correctness and completeness. The information on the Map of Medicine is subject to change and we cannot guarantee that it is up-to-date.