The Prince Charles Hospital
Emergency Department

GUIDELINE for THE INVESTIGATION and MANAGEMENT of
THORACIC AORTIC DISSECTION (AoD)

Consider AoD in all patients presenting with:
- Chest, back or abdominal pain
- Syncope
- Symptoms consistent with perfusion deficit (CNS, mesenteric, myocardial or limb ischaemia)

**STEP 1.** Identify patients at risk for acute AoD

**STEP 2.** Bedside risk assessment

\[ \text{High risk Conditions} \]
- Marfan's Turner's Sx
- Connective tissue Dx
- FH or aortic disease
- Recent aortic manipulation/k
- Uncontrolled hypertension
- Known TA aneurysm

\[ \text{High risk Pain Features} \]
- Chest, back or abdo pain described as the following:
  - abrupt onset/severe intensity
  - Ripping/tearing/sharp or stabbing in quality²

\[ \text{High risk Exam Features} \]
- evidence of perfusion deficit (pulse deficit, BP difference >20mmHg, focal neuro deficit)
- New aortic regurg murmur
- Hypotension or shock

\[ = \text{coronary angiogram, cardiac surgery etc.} \]

Focused bedside pre-test risk assessment for AoD

1. High risk Conditions
2. High risk Pain Features
3. High risk Exam Features

Combine 1 + 2 + 3 above to determine pre-test probability

**Low risk**
- No high risk features or conditions present

**Intermediate risk**
- Any single high risk features/condition present

**Likely ACS.**
Immediate interventional Cardiology consult. If no perfusion deficit, progress to emergent coronary angiogram. Is culprit lesion identified?

**High risk**
- Two or more high risk features or conditions present

**ECG consistent with STEMI**

- Yes
  - Initiate appropriate treatment

- No
  - CXR with clear alternate diagnosis
    - Yes
      - Initiate appropriate treatment
    - No
      - History and physical exam strongly suggest of alternate diagnosis
        - Yes
          - Alternate diagnosis confirmed by further testing
        - No
          - Unexplained hypotension or wide mediastinum on CXR
            - Yes
              - EXPEDITED AORTIC IMAGING.
            - No
              - Consider imaging for AoD based on clinical scenario

1. Family history of Aortic Disease: bicuspid aortic valve, coarctation of aorta
2. Also consider, pain that crosses the diaphragm and pain migrating from upper chest to the abdomen

This Flow Chart should be used in conjunction with the detailed guideline provided.
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GUIDELINE for THE INVESTIGATION and MANAGEMENT of
THORACIC AORTIC DISSECTION (AoD)

Management Of Acute AoD

STEP 1. arrange consultations and dispositions

STEP 2. Reduce Aortic wall stress*

- Pain Control: iv opiates to pain analgesia
- Rate Control: iv Metoprolol or esmolol infusion
  iv verapamil if B-blockade contraindicated
  titrate to HR <60

Obtain accurate blood pressure prior to initiating treatment:
The highest BP is correct
Measure both arms/legs

Hypotension or shock?
Yes
Anatomic Based Mx

Type A Dissection
1. Arrange for urgent surgery
2. iv fluid bolus
   Titrate to MAP of 70mmHg or euvoalaemia
   Commence inotropes if still hypotensive
   Review imaging for tamponade
   Contained rupture
   Severe AR

Type B Dissection
1. iv fluid bolus
   Titrate to MAP of 70mmHg or euvoalaemia
   Commence inotropes if still hypotensive
2. Evaluate aetiology of hypotension, review imaging, consider TTE to assess cardiac function
3. Urgent surgical consultation

Secondary BP control
BP Control: iv vasodilator: GTN†
Titrerate to SBP <120mmHg
Aim: lowest BP that maintains organ perfusion

Systolic BP <120 mmHg?
Yes
Operative/interventional Mx
T/t to Theatre/ICU/Hybrid Lab

Operative/ interventional Mx
T/t to Theatre/ICU/Hybrid Lab

No

Type A (ascending AoD)
Conservative Mx with tight BP control.
Admit CCU

Yes
Conservative Mx with tight BP control.
Admit CCU

† Na nitroprusside may be preferable, particularly with resistant cases, but staff will be less familiar

STEP 3. definitive management

Ensure Emergent Cardiothoracic Surgical Input for all Type A dissections.
Cardiology Input for Type B.
ICU for either if indicated.

* Therapy to reduce aortic wall stress should commence prior to confirmation of the diagnosis with imaging in patients who are thought to have an aortic dissection