

Management of Acute Type B Aortic Dissections Guideline

Haemodynamic targets (initial)

- Systolic BP 100-120 mmHg
- MAP <80 mmHg
- Targets should be changed ONLY after consultation with Vascular team

If patient develops leg weakness, the Vascular surgeon and Vascular anaesthetist must be contacted immediately. **Potential** interventions for spinal cord ischaemia

- Increasing target BP to avoid potential spinal cord infarction
- Emergency CSF drain
- Repeat CT or MRI imaging

Early medical management: Aggressive BP control, analgesia and anti-emetics

Analgesia

- **Morphine** (1-10mg) IV titrated to effect

Then

- **Morphine PCA** 1mg bolus 5 min lockout

*If the patient has **renal impairment**, morphine can be replaced with **fentanyl** 10 microgram bolus 5 min lockout*

- Regular **Paracetamol** (unless contra-indications)

Anti-emetics

- **Ondansetron** 4mg IV every 8 hours
- Supplemental cyclizine 50mg IV every 8 hours and metoclopramide 10mg IV every 8 hours may be used

BP control

Intravenous therapy

1. **Labetalol** (first choice)
 - a. Administer IV bolus injections for initial control of blood pressure (10mg slow IV bolus injections at 2 minute intervals to a maximum of 200mg per course of boluses).
 - b. AND ALSO start an IV infusion to maintain blood pressure control.
 - i. Concentration 5mg/ml for CVC use OR 1mg/ml for PVC use
 - ii. Dose – Start at 15mg/hr and titrate to clinical effect, but often 10-60mg/hour.
2. **Nicardipine** (second line in addition to labetalol, or first line if contra-indications to beta-blocker)
 - a. IV infusion (change IV infusion site every 12h if peripherally administered)
 - i. Concentration 25mg made up to 250ml (5% glucose) = 100micrograms/ml
 - ii. Dose – titrated to clinical effect
 - iii. Start at 50ml/hour (5mg/hour). The rate may be increased every 10 mins by 25ml/hour to a maximum of 150ml/hour (15mg/hour).
 - iv. Once target BP is achieved reduce dose gradually, usual maintenance dose 2-4mg/hour

3. **Hydralazine** (third line) **NB OFF LICENCE USE – Consultant directed use only**
PATIENT MUST BE RATE CONTROLLED BEFORE COMMENCING HYDRALAZINE
 - a. IV bolus – 5mg slow IV injection bolus at 20 minute intervals to a usual maximum of 20mg
 - b. IV infusion
 - i. Concentration 60mg made up to 60ml (0.9% sodium chloride) = 1mg/ml
 - ii. Dose – titrated to clinical effect
 - iii. Start at 3ml/hr (50micrograms/min). The rate may be increased every 10 mins by 3ml/hour to a maximum of 18ml/hour (300micrograms/min).

Oral therapy – Start as soon as possible (Day 1 unless contra-indicated)

Titrate first line drug to maximum tolerated dose before introducing next line drugs

1. **Bisoprolol** (first choice)
 - a. 2.5-20mg once daily
2. **Amlodipine** (second line in addition to bisoprolol, or first line if contra-indications to beta-blocker)
 - a. 5-10mg once daily
3. **Doxazosin** (third line in addition to bisoprolol and amlodipine)
 - a. 1-16mg once daily

NB ACE Inhibitors and diuretics should be avoided initially while the kidneys are at risk.

References

1. Curran MP, Robinson DM, Keating GM. Intravenous nicardipine: its use in the short-term treatment of hypertension and various other indications. *Drugs*. 2006;66(13):1755–82.
2. Dade J et al. UKCPA Critical Care Group. Minimum infusion volumes for fluid restricted critically ill patients. 4th Ed. V4 2012. Accessed 4.2.15 via <http://www.ukcpa.net/groups/critical-care/documents/?category=71>
3. Summary of Product Characteristics. Nicardipine 10mg/10ml solution for Injection. Concordia International. www.medicines.org.uk. Accessed 12/12/17.
4. Summary of Product Characteristics. Hydralazine 20mg Powder for Concentrate for Solution for Injection/Infusion. Concordia International. www.medicines.org.uk. Accessed 12/12/17.
5. Summary of Product Characteristics. Labetalol Hydrochloride 5mg/ml solution for injection. Concordia International. www.medicines.org.uk. Accessed 02/02/2018.
6. Hydralazine Hydrochloride. The UK Injectable Medicines Guide. Accessed 09/04/18.

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Think DISSECTION

The Management of Acute Type B Aortic Dissections

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1 RESUSCITATION

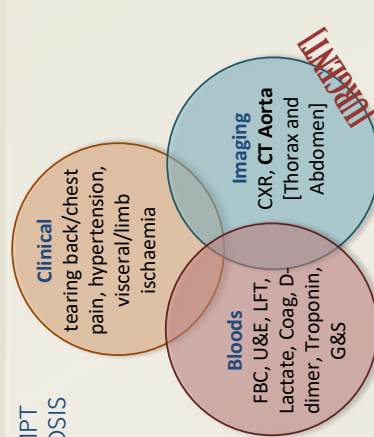
ABCDE

Early anticipation of critical care involvement

4 ANALGESIA AND ANTI-EMETICS

Morphine 1 – 10mg IV titrated to effect;
Morphine PCA 1mg bolus; 5min lock out;
Fentanyl 10µg IV bolus 5min lock out [renal failure]
Paracetamol 1g QDS (unless contraindicated)
Ondansetron 4mg IV every 8 hours OR
Cyclizine 50mg IV PRN 8 hourly OR
Metoclopramide 10mg IV PRN 8 hourly

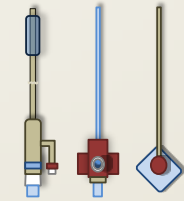
2 PROMPT DIAGNOSIS



Hypotension may be due to myocardial ischaemia, tamponade, aortic root incompetence, or an aortic bleed. These warrant urgent investigations.



3 SYSTEMIC MONITORING



Urgent Critical Care opinion regarding Level 2 bed (HCU)

TYPE

A

Urgent Cardiothoracic Opinion [bleep: 1682]

TYPE

B

Urgent Vascular Surgery [via switchboard] and **Critical Care** [bleep: 2306] **Opinion**

6 LONG-TERM MANAGEMENT

CONVERT TO ORAL BLOOD PRESSURE CONTROL AS EARLY AS TOLERATED

Target BP 120/80 mmHg
 Repeat CT before discharge (usually at 48 hours)
 Follow-up CT at 1, 6 and 12 months.
 Outpatient follow-up at 8 weeks post discharge, unless indicated sooner.

- Bisoprolol** 2.5 – 20mg once daily
- Amlodipine** 5 – 10mg once daily
- Doxazosin** 1 – 16mg once daily

HIGH RISK FEATURES OF TYPE B DISSECTIONS !

Visceral / limb ischaemia
 Entry tear **≥10mm**
Inner curve entry tear
 Aortic diameter **≥4cm**
 On-going **Pain** or **HTN**

Retrograde dissection
 False lumen (FL) **≥22mm**
 Partial FL **thrombosis**
Fusiform index **≥0.64**
 Grow **≥1cm/yr** or **≥5.5cm**