

Management of Acute Type B Aortic Dissections Guideline

Haemodynamic targets (initial)

Systolic BP 100-120 mmHgMAP <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)
 - 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 <u>5mg/ml for CVC</u> use OR <u>1mg/ml for PVC</u> 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 betablocker)
 - 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 – <u>Start as soon as possible (Day 1 unless contra-indicated)</u> 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

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The Management of Acute Type B Aortic Dissections

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1 RESUSCITATION











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

> TYPE **B**

Urgent Cardiothoracic Opinion [bleep: 1682]

Early anticipation of critical care involvement

Fentanyl 10µg IV bolus 5min lock out [renal failure] Paracetamol 1g QDS (unless contraindicated) Morphine PCA 1mg bolus; 5min lock out; Ondansetron 4mg IV every 8 hours OR

Metoclopramide 10mg IV PRN 8 hourly

Cyclizine 50mg IV PRN 8 hourly OR

Morphine 1 - 10mg IV titrated to effect;

4 ANALGESIA AND ANTI-EMETICS

6 LONG-TERM MANAGEMENT

Systolic BP target: 100-120mmHg

5 BLOOD PRESSURE CONTROL

Heart rate target: 50 - 60 bpm

<80mmHg

MAP target:

0.5 ml/kg/hr

Urine output target:

CONVERT TO ORAL BLOOD PRESSURE CONTROL AS EARLY AS

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.

THEN IV infusion 15mg/hr titrated to clinical effect.

Concentration: 1mg/ml [PVC] or 5mg/ml [CVC].

Labetalol 10mg IV bolus every 2 min [max 200mg]

2.5 - 20mg once daily 2 ± Amlodipine Bisoprolol

5 - 10mg once daily 3 ± Doxazosin

1 - 16mg once daily

HIGH RISK FEATURES OF TYPE B DISSECTIONS

On-going Pain or HTN Aortic diameter ≥4cm

Inner curve entry tear

False lumen (FL) ≥22mm Retrograde dissection

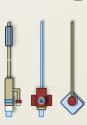
Visceral / limb ischaemia Entry tear ≥10mm

Grow 21cm/yr or 25.5cm Fusiform index ≥0.64 Partial FL thrombosis

Hypotension may be due to myocardial CXR, CT Aorta [Thorax and Abdomen] Imaging pain, hypertension, tearing back/chest visceral/limb schaemia Lactate, Coag, Ddimer, Troponin, FBC, U&E, LFT, **DIAGNOSIS** 2 PROMPT

incompetence, or an aortic bleed. These ischaemia, tamponade, aortic root warrant urgent investigations.

Urinary 3 SYSTEMIC MONITORING



evel 2 bed regarding Invasive ECG Rhythm ВР

(HDN)

Add to Labetalol, or 1st line if intolerant to β -blockers Once target BP is achieved reduce dose gradually, usual maintenance dose 2-4mg/hour Increase every 10 min by 25ml/hour; Nicardipine 25mg in 250ml [100µg/ml] Start at 50ml/hour (5mg/hour). Max 150ml/hour (15mg/hour). 2 Urgent Critical Care

THEN IV infusion 1mg/ml titrated to clinical effect; Hydralazine 5mg slow IV bolus every 20min max 20mg] (in addition to previous agent) Increased every 10 mins by 3ml/hour. Start at 3ml/hr (50µg/min). ന

opinion

Catheter

Max 18ml/hour (300 µg/min).