Management of Patients with Acute Type B Aortic Dissection

Exclude need for surgical intervention then early medical management with aggressive BP control in CCU / HDU
Invasive Arterial Blood Pressure (IABP) measurement / urinary catheter / continuous ECG monitoring

Patient presents to A & E or medical team
↓
Clinical suspicion of aortic dissection
↓
CT scan chest/abdo/pelvis
↓
Radiological confirmation of diagnosis
↓
Discuss with Vascular on call team

No need for surgical intervention
↓
Admit for Blood Pressure Control

Need for surgical Intervention
↓
Vascular team will arrange transfer to appropriate centre

9am – 5pm, Mon – Fri
admit to CCU under **Cardiology**

5pm – 9am, Mon – Fri & all day weekends
admit to CCU under **Medicine**
If no CCU bed then discuss with ITU for admission / may need to consider MHDU if no ITU bed
↓
Manage as per protocol with invasive arterial monitoring
↓
Ongoing management under care of cardiology with vascular team review & arrangement of follow up scan
BP Control

- Systolic IABP target: 100-120 mmHg
- Mean Arterial Pressure target: < 80 mmHg
- Heart rate target: 50 – 60 bpm

If patient develops leg weakness, contact vascular surgeon immediately – possible spinal cord ischaemia – interventions include:
- Increasing IABP to avoid infarction of spinal cord
- Repeat CT or MRI
- Emergency Cerebrospinal Fluid drain

Intravenous therapy

1: Labetalol (1st choice)
   - IV bolus for initial control - 10mg bolus slowly every 2mins to achieve target (max 200mg)
   - And also start
     - IV infusion - 1mg/ml (peripheral) or 5mg/ml (central line) – start at 15mg/hour and titrate to effect – often 10 – 60mg/hour

2: Nicardipine
   - (2nd line in addition to labetolol or 1st line if contraindications)
   - IV infusion - 25mg made up to 250mls (5% Dextrose) – 100mcg/ml
   - Titrate to clinical effect – start at 30 - 50ml/hour (3-5mg/hour)
   - Can increase every 15 minutes by 25ml/hour to max 150ml/hour
   - Once target achieved reduce dose gradually – usual maintenance is 20 – 40ml/hour (2 – 4mg/hour)

3: Hydralazine (3rd line in addition to Nicardipine and / or Labetolol)
   - IV bolus - 5mg slowly every 20 minutes (max 20mg)
   - IV infusion - 60mg/60ml (0.9% Sodium Chloride) i.e 1mg/ml – start at 3ml/hour – increase every 10 minutes by 3ml/hour – max 18ml/hour (300mcg/minute) Max 18ml/hour

Oral Therapy – start as soon as possible

- Bisoprolol 2.5 – 20mg once a day
- Amlodipine (in addition to Bisoprolol ) 5 – 10mg once a day
- Doxazosin (in addition to above) 1 – 16mg once a day
- Hydralazine (in addition to above) 10 – 25mg four times a day

Avoid ACE Inhibitors & diuretics initially while risk of acute kidney injury

Analgesia

- Morphine 1 – 10mg IV titrated to effect then PCA 1mg/5minute lockout – can use fentanyl if renal impairment
- Paracetamol 1g IV up to four times a day (decrease dose if less than 50kg)

Antiemetic

- Ondansetron 4mg IV 8 hourly as required
- Cyclizine 50mg IV 8 hourly / Metoclopramide 10mg IV 8 hourly as required

Adapted from Critical Care Guidelines NHS Lothian and summary of product characteristics.
Permission granted to use given by Dr Mark Dunn Critical Care consultant (lead author)

References