

Management of bradycardia

Version 50

Intended for adults with a heart rate of less than 60 beats per minute

Use in conjunction with guidance concerning the management of specific reversible causes, such as STEMI or hyperkalaemia

Disclaimer:
This is a clinical template; clinicians should always use judgment when managing individual patients

Approved by ED senior team on 11 May 16
Review date: April 19 Trust Ref: C189/2016

Patient details

Full name

DoB

Unit number

(use sticker if available)

① Adverse signs present?

☐ **Yes** - at least one of the below

- Shock ☐
- Syncope ☐
- Myocardial ischaemia ☐
- Acute decompensated heart failure ☐

☐ **No** - none of the above

② Asystole risk present?

☐ **Yes** - at least one of the below

- Complete AV block with broad QRS complexes ☐
- heart rate < 40bpm ☐
- 2nd degree AV block Möbitz type II ☐
- Ventricular pauses > 3sec ☐
- Recent asystole ☐

☐ **No** - none of the above

③ Pacing preparations

Ensure the defibrillator in patient's bay has pacemaker function (circled below).

Centre anterior defibrillator (pacing) pad over 'V3' ECG chest lead position.

Posterior pad should mirror this position.



Ensure the defibrillator's ECG electrodes are attached also (NB: place shoulder electrodes on the back if possible)

④ Special circumstances?

☐ **YES** - at least one of the below

- Spinal cord injury with neurogenic shock ☐
- Heart transplant recipient ☐

➤ **Aminophylline 100mg IV (give 1mL (25mg) aliquots per minute; give a further 100mg if required)**

Beta blocker toxicity

➤ **Glucagon 5-10mg IV then start infusion (see box 9 on reverse)**

Calcium antagonist toxicity

➤ **Calcium Chloride 10% 10mL IV**
➤ **Glucagon 5-10mg IV then start infusion (see box 9 on reverse)**

Digoxin toxicity

➤ **Consider giving Digoxin-specific antibody fragments (DigiFab) 1 vial (40mg) if time allows (available from Resus fridge)**

NB: Consult toxbase.org in every case of bradycardia induced by the drugs above

☐ **NO** - none of the above

⑤ Appropriate disposition

CCU (unless patient requires critical care):

- Need for urgent internal pacing; to arrange:
 - Bleep CCU 'registrar' on *88-2584-[extn]
 - Try CCU on 3774 or 3719 if no answer
 - If unable to reach CCU 'registrar', call non-interventional cardiologist via switchboard
 - Check CCU is expecting pt before transfer
- NSTEMI / STEMI
- Risk of asystole if cause is cardiac

ACB (unless patient requires critical care):

- Requiring treatment for bradycardia due to
 - Medication side effects or overdoses
 - Hypothermia
 - Potassium or calcium derangement

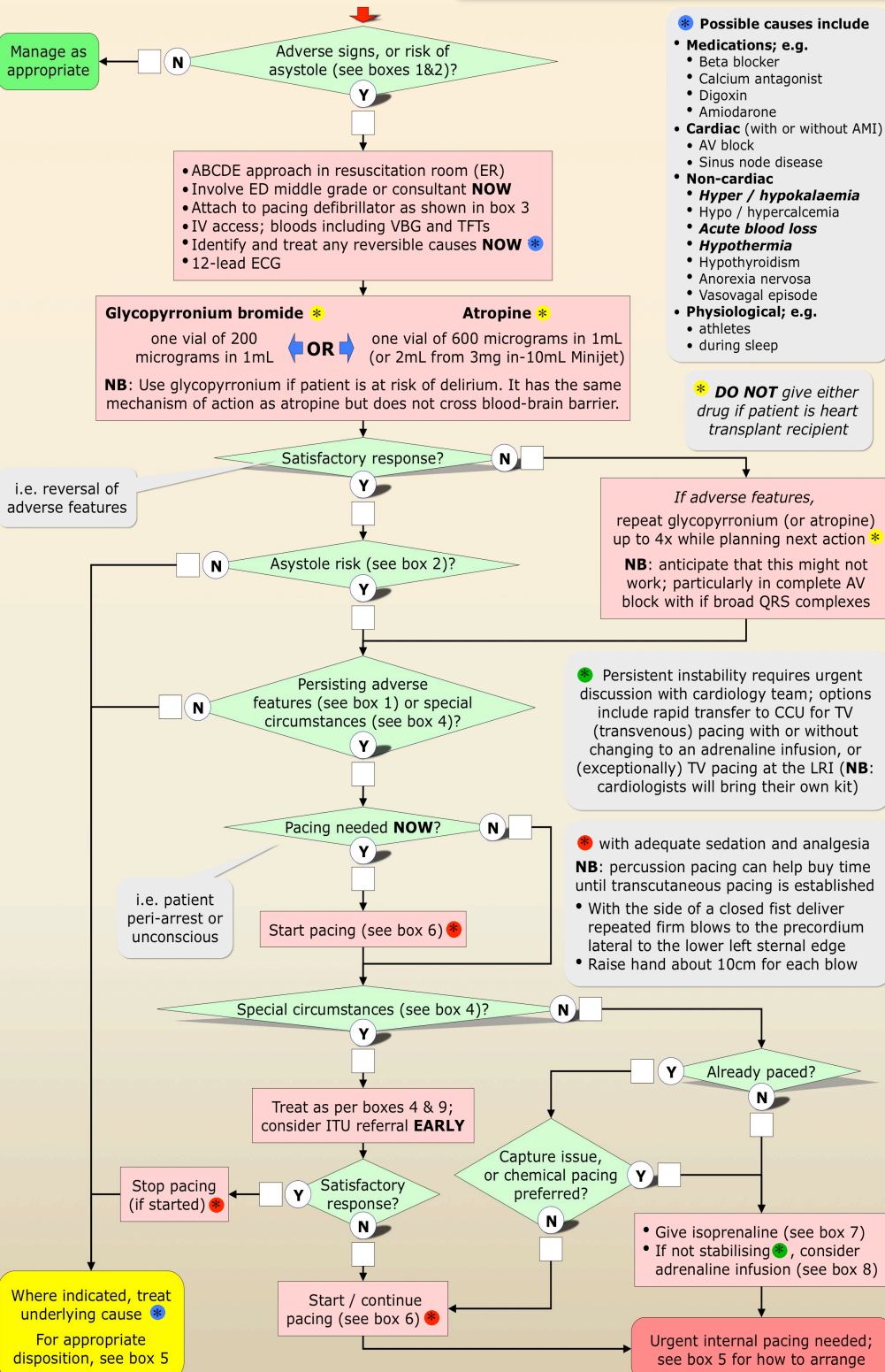
Critical care:

- Conditions above, if too sick for CCU/ACB
- Hyperkalaemic patients requiring CVVH

CCU:

Patients with cardiac cause of bradycardia not needing transcutaneous or chemical pacing, as deemed suitable by on-call CCU middle grade

In all other patients, use clinical judgment



Assessment carried out by

Print name

Signature

Role

Date

⑥ Transcutaneous pacing



1. Press '**PACER**' button (this will activate pacing function but not yet start pacing)



2. Press '**RATE ▲**' button (set to 60bpm by default but 70 or 80 bpm may be more effective)

3. Start pacing by pressing '**CURRENT ▲**' button. Repeat until monitor shows QRS complex after every pacing spike (consider increasing current by a further 10mA to be sure).

4. Feel pulse to confirm mechanical capture
5. Ensure good analgesia +/- sedation as needed after capture achieved

⑦ Isoprenaline Hydrochloride

- Add a 2mL ampoule Isoprenaline Sulphate **2.25mg** (equivalent to **2mg** as Hydrochloride) to 500mL Glucose 5% (4 micrograms/mL)
- Take 15mL from bag using a 20mL syringe for initial bolus
- Give 5mL (20 micrograms) IV over one minute
- Repeat up to twice if required
- Start IV infusion pump at 75mL/h (delivers 5 micrograms/min)
- Titrate up or down as required as per table below

Dose in micrograms/min	Infusion rate in mL/h
1	15
2	30
3	45
4	60
5	75
10	150

• Prescribe as shown below

⑧ Adrenaline

- Add a 1mL (1mg) ampoule to 250mL NaCl 0.9% (4 micrograms/mL)
- Start IV infusion pump at 75mL/h (delivers 5 micrograms/min)
- Titrate up or down as required as per table below

Dose in micrograms/min	Infusion rate in mL/h
1	15
2	30
3	45
4	60
5	75
10	150

• Prescribe as shown below

⑨ Glucagon

- Give 5mg IV (1mg aliquots per minute)
- Give further 5mg if needed
- Add another 10mg to 40mL water in a 50mL syringe
- If initial bolus effective, start IV syringe driver at
 - 1-5mg/h for beta blocker
 - 3-6mg/h for Ca antagonist
- Titrate up or down as required as per table below

Dose in mg/h	Infusion rate in mL/h
1	5
2	10
3	15
4	20
5	25
6	30

• Prescribe as shown below

⑩ Prescribing positive chronotrope infusions

Date	Infusion fluid		Additions to infusion		IV or SC	Line	Start Time	Time to run or ml/hr	Fluid Batch No.	Prescriber
	Type/strength	Volume	Drug	Dose						
DD/MM/YY	NaCl 0.9%	250mL	Adrenaline	1mg = 1mL	IV		HH:MM	15 - 150mL/h (start at 75mL/h)		Dr.'s Name

Date	Infusion fluid		Additions to infusion		IV or SC	Line	Start Time	Time to run or ml/hr	Fluid Batch No.	Prescriber
	Type/strength	Volume	Drug	Dose						
DD/MM/YY	Glucose 5%	500mL	Isoprenaline Sulphate	2.25mg = 2mL	IV		HH:MM	15 - 150mL/h (start at 75mL/h)		Dr.'s Name

Date	Infusion fluid		Additions to infusion		IV or SC	Line	Start Time	Time to run or ml/hr	Fluid Batch No.	Prescriber
	Type/strength	Volume	Drug	Dose						
DD/MM/YY	Water	40mL	Glucagon	10mg = 10 1mL vials	IV		HH:MM	5 - 30mL/h (start at 25mL/h)		Dr.'s Name