

Bradycardia; Pulse Present



History

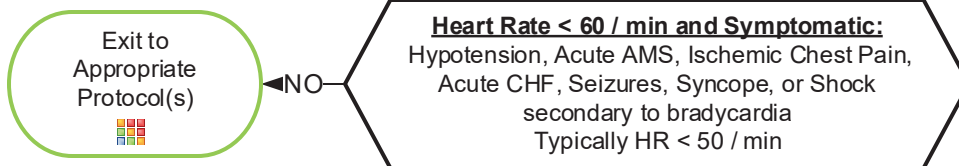
- Past medical history
- Medications
 - Beta-Blockers
 - Calcium channel blockers
 - Clonidine
 - Digoxin
- Pacemaker

Signs and Symptoms

- HR < 60/min with hypotension, acute altered mental status, chest pain, acute CHF, seizures, syncope, or shock secondary to bradycardia
- Chest pain
- Respiratory distress
- Hypotension or Shock
- Altered mental status
- Syncope

Differential

- Acute myocardial infarction
- Hypoxia / Hypothermia
- Pacemaker failure
- Sinus bradycardia
- Head injury (elevated ICP) or Stroke
- Spinal cord lesion
- Sick sinus syndrome
- AV blocks (1°, 2°, or 3°)
- Overdose
- Athletes



YES

	Airway Protocol(s) AR 1, 2, 3 <i>if indicated</i>
	Respiratory Distress Protocol AR 4 <i>if indicated</i>
	Chest Pain: Cardiac and STEMI Protocol AC 4 <i>if indicated</i>
B	Search for Reversible Causes
	12 Lead ECG Procedure
A	IV / IO Procedure
P	Cardiac Monitor
A	Normal Saline Fluid Bolus 500 mL – 2 L NS IV / IO (Unless Acute CHF) (Maximum 2 L)
	Atropine 0.5 mg IV / IO May repeat every 3 – 5 minutes (Maximum 3 mg)
	If No Improvement Transcutaneous Pacing Procedure <i>(Consider earlier in 2nd or 3rd AVB)</i>
P	Epinephrine 1 - 10 mcg/min IV / IO Titrate to SBP ≥ 90 mmHg Or Dopamine 2 – 20 mcg/kg/min IV / IO Titrate to SBP ≥ 90 mmHg

Reversible Causes
Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia
Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

P	Consider Sedation
	Midazolam 0.5 – 2.5 mg IV / IO 5 mg IM / 2 mg IN (Maximum 10 mg)

🚑	Notify Destination or Contact Medical Control	🚑
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Adult Cardiac Protocol Section

Bradycardia; Pulse Present



Consider Medical Control advice in renal patients presenting with bradycardia.

Pearls

- **Recommended Exam: Mental Status, Neck, Heart, Lungs, Neuro**
- **Identifying signs and symptoms of poor perfusion caused by bradycardia are paramount.**
- **Rhythm should be interpreted in the context of symptoms and pharmacological treatment given only when symptomatic, otherwise monitor and reassess.**
- **Consider hyperkalemia with wide complex, bizarre appearance of QRS complex, and bradycardia.**
- **Hypoxemia is a common cause of bradycardia. Ensure oxygenation and support respiratory effort.**
- **Atropine**
 - Do NOT delay Transcutaneous Pacing to administer Atropine in bradycardia with poor perfusion. Caution in setting of acute MI. Elevated heart rate can worsen ischemia.
 - Ineffective and potentially harmful in cardiac transplantation. May cause paradoxical bradycardia.
- **Transcutaneous Pacing Procedure (TCP)**
 - Utilize TCP early if no response to atropine. If time allows transport to specialty center because transcutaneous pacing is a temporizing measure. Transvenous / permanent pacemaker will probably be needed.
 - Immediate TCP with high-degree AV block (2d or 3d degree) with no IV / IO access.
- Consider treatable causes for bradycardia (Beta Blocker OD, Calcium Channel Blocker OD, etc.)