

Bradycardia; Pulse Present

History

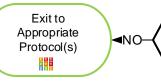
- Past medical history
- Medications
 - Beta-Blockers
 - Calcium channel blockers
 - Clonidine
 - Digoxin
- Pacemaker

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 mvocardial 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



Heart Rate < 60 / min and Symptomatic:

Hypotension, Acute AMS, Ischemic Chest Pain, Acute CHF, Seizures, Syncope, or Shock secondary to bradycardia Typically HR < 50 / min



Airway Protocol(s) AR 1, 2, 3 if indicated Respiratory Distress Protocol AR 4 if indicated Chest Pain: Cardiac and STEMI Protocol AC 4 if indicated Search for Reversible Causes В 12 Lead ECG Procedure Α IV / IO Procedure Cardiac Monitor Α

Reversible Causes

Hypovolemia Hypoxia Hydrogen ion (acidosis) Hypothermia Hypo / Hyperkalemia

Tension pneumothorax Tamponade; cardiac Toxins Thrombosis; pulmonary (PE)

Thrombosis; coronary (MI)

If No Improvement Transcutaneous Pacing Procedure (<u>Consider earlier in 2nd or 3rd AVB</u>)

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Notify Destination or Contact Medical Control



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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.

• <u>Transcutaneous Pacing Procedure (TCP)</u>

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.)