Bradycardia (106)

Adults	Pediatrics *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Request Fire/EMS transport • Support ABC's as needed	• Request Fire/EMS Transport • Support ABC's as needed
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Assess/support ABC's • Give oxygen only if Spo2 <94% or if in respiratory distress • Rapid transport or ALS Rendezvous	• Assess/support ABC's • Give oxygen only if SpO2 <94% or if in respiratory distress • Rapid transport or ALS Rendezvous
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Attach monitor/SpO2/Obtain 12 lead ECG • Establish IV • Assess for signs of poor perfusion related to Bradycardia, such as Altered Mental Status, Chest Pain, Shortness of Breath, Hypotension. • If poor perfusion is present, prepare for **TRANSCUTANEOUS PACING** at a rate of 80 bpm • Consider pain management with 1 mg Midazolam and 50 mcg Fentanyl prior to TCP if Systolic B/P >90 • Consider Atropine 0.5 mg IV while preparing pacer. May repeat to a max dose of 3 mg. • Consider Push Dose Epinephrine 0.5 mL every 1-5 minutes **OR** Epinephrine drip 2-8 mcg/min. Start at 2mcg/min and titrate to effect, if pacing ineffective. • Treat underlying causes and establish base contact	• Maintain and support ABC's • Attach monitor/SpO2/obtain 12 lead • Bradycardia causing cardio-respiratory compromise? • Establish IV/IO • Under 1 year with heart rate <60 BPM with signs of shock despite oxygenation/ventilation? Perform CPR for 2 minutes, is patient still bradycardic? • If increased vagal tone or primary AV block, give Atropine 0.02 mg/kg minimum dose 0.1 mg BEFORE epinephrine administration. May repeat as needed to max of 1 mg. • Consider Transcutaneous pacing • Consider pain management with Midazolam 0.1 mg/kg IM or 0.05 mg/kg IV and 1mcg/kg Fentanyl prior to TCP if over 10 years old Systolic B/P > 90 mmHg or less than 10 years old Systolic B/P > 70 mmHg • Push Dose Epinephrine 0.5 mL every 1-5 minutes **OR** Epinephrine drip 0.1-1 mcg/kg/min. Start at lower dose and titrate to effect not to exceed adult dose.
Base Hospital Contact Required	**Base Hospital Contact Required**
• Pain control beyond initial dose.	• Pain control beyond initial dose.

106 BRADYCARDIA

Bradycardia (106)

Special Considerations

Primary point of concern is adequacy of perfusion if patient is hemodynamically stable then monitor and transport patient.
Key questions to answer, are there serious signs and symptoms and if so, are they related to the slow heart rate?
Serious signs and symptoms:

- Chest pain
- Shortness of breath
- Decreased LOC
- Fatigue
- Weak, dizzy, lightheaded
- Syncope
- Hypotension
- CHF
- Ventricular escape rhythms

1. Before TCP: Consider Midazolam 1mg slow IV push and Fentanyl 50 mcg IV or Morphine 5 mg IV, titrated to patient comfort. Contact base hospital for further orders if additional sedation/pain relief is required.

2. Start TCP immediately if:
   - No response to atropine
   - Atropine is unlikely to be effective in heart blocks such as second-degree type II or third-degree
   - IV access cannot be quickly established.
   - Patient is severely symptomatic.
3. After TCP:
   - Assess electrical and mechanical capture
   - Reassess patient perfusion
   - Give analgesics and sedatives for pain control if not done before TCP.

4. If patient fails to respond to TCP or ATROPINE consider: Push dose Epinephrine for profoundly hypotensive patients after standard treatments fail to improve blood pressure.
   - Push Dose epinephrine is 1mL (0.1 mg) of 1 mg in 10 mL epinephrine (cardiac epinephrine 1:10,000) mixed with 9 mL of N/S resulting in Epinephrine 0.01 mg/mL.

     ➢ Begin with an empty 10mL syringe and apply a medication label to indicate push dose epinephrine.
     ➢ Withdraw 1 mL of 0.1 mg/mL preparation (cardiac epinephrine 1:10,000)
     ➢ Withdraw 9 mL of normal saline. Shake well.
     ➢ Mixture now provides 10 mL of epinephrine at a 10 mcg/mL concentration.
     ➢ Push Dose: 0.5 mL (5 mcg) IV/IO, every 1-5 minutes.

5. TCP Operational Procedure.

   - Acquire baseline rhythm strip
   - Obtain vital signs, consider premedication with Midazolam for conscious patients
   - Apply pacing electrodes to clean, dry, skin
   - Select demand pacing mode on monitor
   - Confirm sensing of QRS complex in the demand pacing mode
   - Set current at minimum level
   - Set pace rate at 80
   - Activate pacer and adjust current upward until electrical and mechanical capture is identified. Typical capture thresholds range between 50-90 mA

6. For long transports consider Epinephrine infusion 2-8 mcg/ min, titrated to patient response. See below for epinephrine drip preparation.

   - **Epinephrine Drip Setup**
     - Begin with a 100mL bag of normal saline and apply medication label to indicate epinephrine drip.
     - Obtain 1 ampules or vials of epinephrine 1:1000
     - With a 1 mL syringe and a filtered needle withdraw 0.8mg of epinephrine 1:1000
     - Remove filtered needle attach hypodermic needle and inject 0.8mg of epinephrine 1:1000 in labeled 100mL saline bag. Shake well.
     - Attach the 60 drops/mL IV tubing set to the extension set with flow controller (Dial-a-flow). Prime the line and set your desired drops, see below for rates.
       - 2mcg/min set rate to 15 drops
       - 4mcg/min set rate to 30 drops
       - 6mcg/min set rate to 45 drops
       - 8mcg/min set rate to 60drops

   - **10 drops/mL IV tubing shall not be used for anaphylaxis, bradycardia, or respiratory distress.**