

## ***Bradycardia***

This is a protocol for patients with serious symptomatic bradycardia. Serious symptomatic bradycardia may be defined as patients with heart rate less than 60 bpm and any of the following symptoms: chest pain, difficulty breathing, decreased level of consciousness, hypotension, or shock. Titrate treatments to a heart rate above 60 bpm. If the patient remains hypotensive refer to the cardiogenic shock protocol.

### **Pre-Medical Control**

1. Follow the **General Pre-Hospital Care Protocol**.
2. Administer Atropine 0.5 mg IV repeating every 3-5 minutes to a total dose of 3 mg IV, until a heart rate of greater than 60/minute is reached.
3. Transcutaneous pacing (TCP) when available may be initiated prior to establishment of IV access and/or before Atropine begins to take effect. Pacing is the treatment of choice for high degree A-V block. Follow the **External Pacing Protocol**.
4. Provide sedation as needed.

<p><b><u>Sedation :</u></b> <b>(Select Options)</b> <b>(Titrate to minimum amount necessary)</b></p> <p><input type="checkbox"/> Midazolam 1-5 mg IV/ IO (0.05 mg/kg) titrated slowly may repeat every 5 minutes until maximum of 0.1 mg/kg</p> <p><input type="checkbox"/> Diazepam 5-10 mg IV/ IO (0.1 mg/kg) titrated slowly may repeat every 5 minutes until maximum 0.3 mg/kg</p> <p><input type="checkbox"/> Lorazepam 1-2 mg IV/ IO (0.1 mg/kg, max 4 mg/dose) titrated may repeat every 5 minutes until maximum of 8 mg</p> <p><input type="checkbox"/> Fentanyl 1 mcg/kg IV/IO</p>
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### **Post-Medical Control**

1. Consider Dopamine Drip 2-10 mcg/kg/min. Mix drip by putting 400 mg in 250 ml NS.
2. Consider Epinephrine Drip 2-10 mcg/min. Mix drip by putting 1 mg of 1:1,000 in 250 NS.

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Notes:

1. Some patients may not tolerate the pacing stimulus to the skin and chest wall that occurs with transcutaneous pacing. In these cases, consider sedation if SBP > 100. (See box)
2. Consider possible etiologies:
  - a. Hyper/hypokalemia, other metabolic disorders
  - b. Hypothermia
  - c. Hypovolemia (including vomiting/diarrhea)
  - d. Hypoxia
  - e. Toxins/ overdose (e.g. beta-blocker or calcium channel-blocker)
  - f. Tamponade
  - g. Tension pneumothorax
3. Transcutaneous pacemaker electrode pads may be applied to these patients without initiating pacing so that the pacemaker is ready if patient condition deteriorates.
4. For symptomatic high-degree (second-degree or third-degree) AV block, begin pacing without delay.
5. Atropine should be administered by rapid IV push and may be repeated every 3-5 minutes, to a maximum dose of 3 mg. Atropine is ineffective and should be avoided in heart transplant patients.

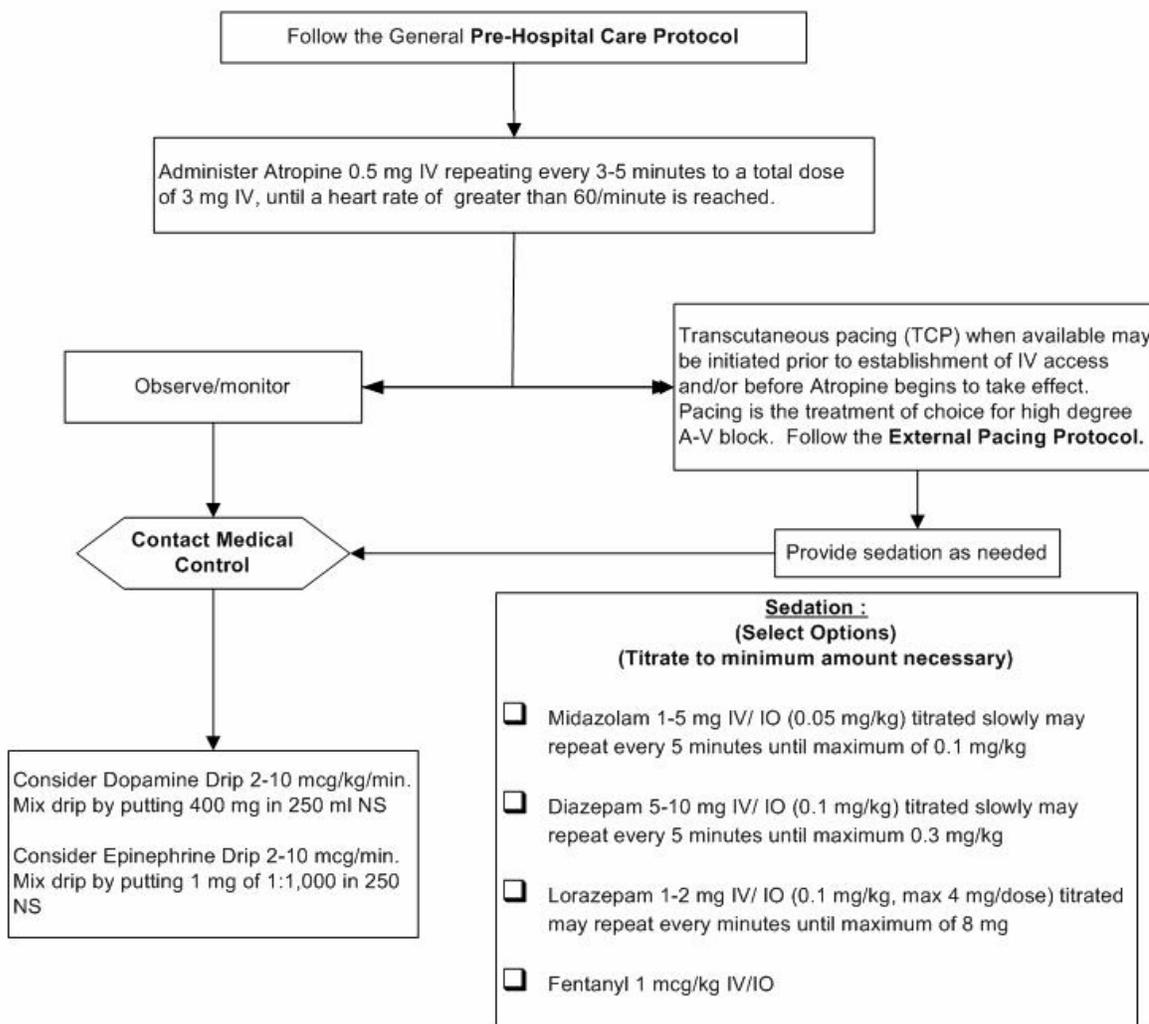
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