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.

<table>
<thead>
<tr>
<th>Sedation : (Select Options) (Titrate to minimum amount necessary)</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Midazolam 1-5 mg IV/ IO (0.05 mg/kg) titrated slowly may repeat every 5 minutes until maximum of 0.1 mg/kg</td>
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<tr>
<td>□ Diazepam 5-10 mg IV/ IO (0.1 mg/kg) titrated slowly may repeat every 5 minutes until maximum 0.3 mg/kg</td>
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<tr>
<td>□ 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</td>
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<tr>
<td>□ Fentanyl 1 mcg/kg IV/IO</td>
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</tbody>
</table>

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.
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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Follow the General Pre-Hospital Care Protocol

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.

Observe/monitor

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.

Contact Medical Control

Provide sedation as needed

Sedation: (Select Options) (Titrated to minimum amount necessary)

- Midazolam 1-5 mg IV/IO (0.05 mg/kg) titrated slowly may repeat every 5 minutes until maximum of 0.1 mg/kg
- Diazepam 5-10 mg IV/IO (0.1 mg/kg) titrated slowly may repeat every 5 minutes until maximum 0.3 mg/kg
- Lorazepam 1-2 mg IV/IO (0.1 mg/kg, max 4 mg/dose) titrated may repeat every minutes until maximum of 8 mg
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