SECTION: Adult Cardiovascular Emergencies

PROTOCOL TITLE: Medical – Bradycardia

REVISED: 06/2017

Protocol 2-9

BRADYCARDIA

OVERVIEW:
Brady-arrhythmias can be caused by two mechanisms: depression of sinus nodal activity or conduction system blocks. In both situations, subsidiary pacemakers take over and pace the heart, provided the pacemaker is located above the bifurcation of the Bundle of His, and the rate is generally adequate to maintain cardiac output. The need for emergent treatment is guided by two considerations: evidence of hypoperfusion and the potential of the rhythm to degenerate into a more profound bradycardia or Asystole.

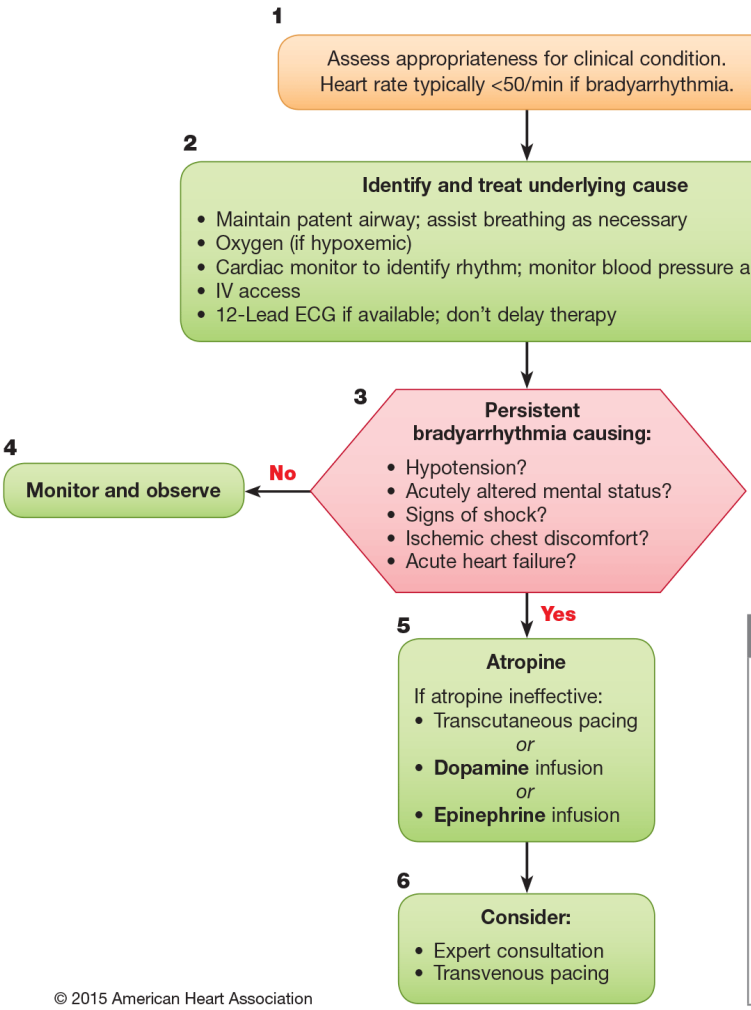
HPI	Signs and Symptoms	Considerations
• Past medical history • Medications (Beta Blockers, Calcium channel blockers, Clonidine, Digitalis) • Pacemaker	• Heart rate < 60 bpm • Chest pain • Respiratory distress • Hypotension or shock • Altered mental status • Syncope	• Acute myocardial infarction • Hypoxia • Hypothermia • Sinus bradycardia • Athletes • Head injury (elevated ICP) or stroke • Spinal cord lesion • Sick sinus syndrome • AV blocks (1st, 2nd, or 3rd degree)

PEARLS:
1. Symptomatic 2nd and 3rd degree heart block should be treated with transcutaneous pacing, avoid Atropine.
2. In the setting of AMI or suspected acute cardiac ischemia, transcutaneous pacing should be first, only if the patient is showing profound symptoms of poor perfusion.
3. Electrical capture during transcutaneous pacing is defined as an electrical stimulus marker followed by a wide QRS complex, with no underlying intrinsic rhythm, followed by a T - wave. This should occur for each electrical complex.
4. Mechanical capture is confirmed when the patient's pulse matches the displayed pace rate. Because pacing stimuli generally causes muscular contractions that can be mistaken for a pulse, you should never take a pulse on the left side of the body to confirm mechanical capture. Pectoral muscle contractions due to pacing also do not indicate mechanical capture. To avoid mistaking muscular response to pacing stimuli for arterial pulsations, use ONLY: (1) right femoral artery or (2) right brachial for confirming mechanical capture.
5. Acute myocardial infarcts can present with hypotension and brady-arrhythmias. Obtain 12-Lead ECG.
6. If hypotension exists with bradycardia, treat the bradycardia.
7. If blood pressure is adequate, monitor only.
8. Treatment of bradycardia is based upon the presence or absence of significant signs and symptoms (symptomatic vs. asymptomatic).

Protocol 2-9 Continued

BRADYCARDIA

Adult Bradycardia With a Pulse Algorithm



Doses/Details

Atropine IV dose:
First dose: 0.5 mg bolus. Repeat every 3-5 minutes. Maximum: 3 mg.

Dopamine IV infusion:
Usual infusion rate is 2-20 mcg/kg per minute. Titrate to patient response; taper slowly.

Epinephrine IV infusion:
2-10 mcg per minute infusion. Titrate to patient response.