Protocol
C-7

SECTION: C-7

TITLE: Adult Bradycardia

REVISED: April 29, 2011

When possible, a 12-lead may be helpful in determining origin of the rhythm.

BLS-SPECIFIC CARE: *See Adult General Cardiac Care/ACS Protocol C-3*

ILS-SPECIFIC CARE: *See Adult General Cardiac Care/ACS Protocol C-3*

ALS-SPECIFIC CARE: *See Adult General Cardiac Care/ACS Protocol C-3*

For hemo dynamically **UNSTABLE** patients presenting with bradycardia, perform immediate transcutaneous pacing (TCP)**.**

- Consider sedation/analgesia with transcutaneous pacing if it will not cause unnecessary delays.

Sedation:

- **DO NOT** administer if:
  - Systolic BP < 90 mmHg
  - Low respiratory rate, SpO_2 and/or diminished mental status.

- Versed (midazolam) IV/IM/IO:
  - 0.5-2.5 mg every 5-10 minutes as needed.
  - Maximum dose of 5 mg.

Analgesia:

- **DO NOT** administer/discontinue administration if:
  - Systolic BP < 90 mmHg
  - Respiratory rate, SpO_2 and/or mental status diminishes.

- Fentanyl IV/IM/IO:
  - 25-50 mcg IV/IM every 5-10 minutes as needed.
  - Maximum dose 200 mcg.

- *Morphine IV/IM/IO:*
  - 2-5 mg IV/IM every 5-10 minutes as needed.
  - Maximum dose 20 mg.

- Transcutaneous pacing:
  - Start at 80 ppm and 80 mA.

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For hemodynamically **STABLE** patients presenting with symptomatic bradycardias, pharmacologic therapy is indicated.

- Atropine sulfate:
  - Not indicated for complete and high degree heart blocks.
    - IV/IO: 0.5 mg as needed every 3-5 minutes.
    - Maximum total dose 3 mg.
    - Maximum total dose of 0.04 mg/kg for morbidly obese patients.

For the treatment of the adult with symptomatic and unstable bradycardia, chronotropic drug infusions are recommended as an alternative to pacing.

Vasopressors:

- For bradycardia or hypotension unresponsive to other therapies.
  - Dopamine infusion:
    - 2-20 mcg/kg/min.
    - See, “Adult Dopamine Infusion Chart.”
    - Titrated to adequate heart rate and/or blood pressure response.
  - **Epinephrine infusion:**
    - 2-10 mcg/min.
    - See, “Adult Epinephrine Infusion Chart.”
    - Titrated to adequate heart rate and/or blood pressure response.

PHYSICIAN PEARLS:

Dopamine Infusion Matrix

Recommended Infusion Rates for Dopamine Mix 400 mg / 250 cc for a 1600mcg / 1 cc concentration.														
Dos	**Patient Weight (kg)**													
	40	50	60	70	80	90	100	110	120	130	140	150	160	170
5	8	9	11	13	15	17	19	21	23	24	26	28	30	32
7	11	13	16	18	21	24	26	29	32	34	37	39	42	45
10	15	19	23	26	30	34	38	41	45	49	53	56	60	64
15	23	28	34	39	45	51	56	62	68	73	79	84	90	96
20	30	38	45	53	60	68	75	83	90	98	105	113	120	128

Epinephrine Infusion Matrix

Recommended Infusion Rate for Epinephrine		
DOSE mcg/min	**1 mg/250 cc with microdrip 4 mcg/ml concentration**	**1 mg/100 cc Buritrol 10 mcg/ml concentration**
2	30 gtt/min (ml/hr)	12 gtt/min (ml/hr)
3	45 gtt/min (ml/hr)	18 gtt/min (ml/hr)
4	60 gtt/min (ml/hr)	24 gtt/min (ml/hr)
5	75 gtt/min (ml/hr)	30 gtt/min (ml/hr)
6	90 gtt/min (ml/hr)	36 gtt/min (ml/hr)
7	105 gtt/min (ml/hr)	42 gtt/min (ml/hr)
8	120 gtt/min (ml/hr)	48 gtt/min (ml/hr)
9	135 gtt/min (ml/hr)	54 gtt/min (ml/hr)
10	150 gtt/min (ml/hr)	60 gtt/min (ml/hr)

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