

PROTOCOL FOR: Epinephrine (Adrenalin): IV Infusion

POLICY: 1. This drug is to be administered only in critical care areas where patient is on a cardiac monitor, and must be administered on an infusion pump, using drug guardrails.

INDICATION: Hypotension, low cardiac output(CO)/cardiac index(CI)

DESIRED PATIENT

OUTCOME: The patient will achieve effective blood pressure and cardiac output/index without suffering negative side effects.

**CLINICAL
ASSESSMENT AND**

- CARE:**
1. Prior to Starting Infusion:
 - a. Validate the order for solution concentration, infusion starting rate and BP parameters. Order should reflect dosage in **mcg/kg/min.**
 - b. Administer oxygen as ordered.
 - c. Perform baseline vital signs and systems assessment.
 - d. Obtain vital sign and hemodynamic parameters form MD/LIP prior to starting Epinephrine infusion. Common parameters are to titrate epinephrine to keep SBP 100-120 or MAP > 60, or CI >2).
 - e. Frequent BP monitoring (a-line or non-invasive BP) needs to be available. Rapid rises in systolic or diastolic BP may occur.
 - f. Epinephrine is incompatible with bicarbonate. Check compatibility references for other medication compatibilities. Infusion via a central line is preferred.
 2. Continuous IV Infusion:
 - a. **Standard concentration: 4 mg in 250cc D₅W (16 mcg/ml).** May be double concentrated to 8 mg/25 0ml D₅W (32 mcg/ml), or 16 mg/250 ml D₅W (64 mcg/ml) for quadruple concentration.
 - b. Usual dose:
For inotropic effect - start at 0.02 mcg/kg/min, increase by 0.02 mcg/kg/min every 5 minutes up to 0.2 mcg/kg/min until satisfactory BP/CO response is achieved. Potent alpha vasoconstriction occurs at > 0.2 mcg/kg/min - titrate at these doses strictly per MD/LIP order.
 - c. Stay with the patient during the initial titration of infusion - continuously monitoring patient's BP, heart rate and rhythm, LOC and cardiac output/index (if patient has a Swan-Ganz catheter).
 - d. Monitor patient's BP **every 5 minutes** initially, then **every 30 minutes - 1 hour** once a stable BP and/or satisfactory cardiac output is attained.

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- e. Monitor for chest pain, arrhythmias (especially tachycardia) and hypertension which may necessitate discontinuing the drug. Headache, dizziness, anxiety, and decreased renal blood flow may also occur.
3. Contraindications:
- a. Use cautiously if patients that have recently had anesthesia with inhalant anesthetics.
 - b. Do not use in patients with hypertension, cerebral arteriosclerosis, hyperthyroidism, narrow angle glaucoma, during labor, or in patients receiving digitalis.
 - c. Do not use to treat over dosage of adrenergic blocking agents (i.e., phenothiazines, italdol) as a further drop in BP may occur and irreversible shock may result.

REPORTABLE

- CONDITIONS:**
- 1. Inability to obtain desired increase SBP, MAP or at maximum dose ordered.
 - 2. Severe tachycardia or other arrhythmias.
 - 3. Any significant change from baseline system assessments.

APPROVAL: ICU Standards Committee
ED Standards Committee
Nursing Standards Committee

EFFECTIVE DATE: 8/91

REVISION DATES: 1/93, 1/95, 10/95, 3/96, 10/99, 10/03, 10/05, 3/08, 9/08, 5/09

REVIEWED DATES: 2/06, 10/09