

## **EPINEPHRINE DRIP 1 mcg/mL (1 mg/1000 mL) (Adrenalin)**

**Classification:** Sympathomimetic agent (catecholamine)

**Actions:**

- Increases cardiac output due to increased inotropy, chronotropy, dromotropy ( $\beta_1$  effect)
- Relaxes smooth muscles of the respiratory tract ( $\beta_2$  effect)
- Increases systolic blood pressure due to increased cardiac output ( $\beta_1$  effect) and vasoconstriction ( $\alpha$  effect)

**Indications:**

1. Symptomatic adult bradycardia refractory to other therapies
2. ROSC with persistent hypotension
3. Distributive shock (septic or neurogenic) unresponsive to fluid resuscitation
4. Cardiogenic shock with signs/symptoms of CHF or not responding to fluid resuscitation

**Contraindications:** **There are no absolute contraindications in a life-threatening situation**

**Precautions:**

- Hypovolemia: correct volume depletion prior to administration
- Cardiac disease and ischemia

**Adverse Effects (select list):** *Frequency not defined:*

- CNS: Excitability, dizziness, drowsiness, disorientation, headache, exacerbation of Parkinson's, paresthesia, cerebral hemorrhage
- Resp: **Dyspnea, pulmonary edema**
- CV: Angina, cardiac ischemia, HTN, vasoconstriction, palpitations, **tachyarrhythmia, supraventricular and ventricular dysrhythmias, CVA**
- Metabolic: hyperglycemia, hypoglycemia, hypokalemia, acidosis
- GI: Nausea and vomiting
- Other: Tremor, pallor, erythema, diaphoresis, piloerection
- Tissue necrosis at injection site

**Administration:** Mix 1 mg (10 mL) of cardiac epinephrine 1:10,000 (0.1 mg/mL) with a full 1 L bag of Normal Saline. Mixture now provides 1000 mL of epinephrine at a 1 mcg/mL concentration.

**LABEL BAG with "Epinephrine 1 mcg/mL"**

### **ADULT DOSE**

**Base station order only:** up to 10 mcg/min IV/IO infusion

Start infusion at 10 mcg/min (see drip chart)

- Titrate down to minimum rate to maintain SBP >90 mmHg, or other indicators of response

**PEDIATRIC DOSE**

**Base station order only:** 1 mcg/kg, not to exceed 10 mcg/min, IV/IO infusion

Start infusion at recommended dose (see drip chart)

- Titrate down to maintain age appropriate minimum SBP mmHg, or other indicators of response

**Pharmacology:**

Onset:

- Immediate
- Steady state during infusion: 10-15 min

Duration:

- Half-life <5 min

**Notes:**

- Attempt to correct hypovolemia with IV fluid bolus prior to administration of any vasopressors.
- Consider requesting epinephrine drip if multiple doses of Push-Dose epinephrine have been required, particularly for extended transport.
- Use macro drip tubing (10 or 15 gtts) for epinephrine drip.
- Consider using metronome to help set drip rate.
- Ensure solution of mixed epinephrine is labelled appropriately – “Epinephrine 1mcg/mL”
- Do NOT use IV tubing running epinephrine drip as primary IV line, piggyback onto IV line or start second line.
- **Anaphylactic shock and pediatric bradycardias** with circulatory collapse, refer to Protocols #611 and #644. Base physician may order epinephrine drip at their discretion.

| Dose (mcg/min)                 | Drops/min |
|--------------------------------|-----------|
| If using 10 drop tubing (Gtts) |           |
| 2                              | 20        |
| 4                              | 40        |
| 6                              | 60        |
| 8                              | 80        |
| 10                             | 100       |
| If using 15 drop tubing (Gtts) |           |
| 2                              | 30        |
| 4                              | 60        |
| 6                              | 90        |
| 8                              | 120       |
| 10                             | 150       |