EPINEPHrine

Classification

HIGH ALERT MEDICATION

Catecholamine

Sympathomimetic

Indications

PCP: Anaphylaxis

PCP: Severe bronchospasm

PCP: Severe croup

ACP: Cardiac arrest

ACP: Peri-arrest hypotension

ACP: Significant bradycardia

Contraindications

There are no absolute contraindications to EPINEPHrine use in life-threatening situations such as anaphylaxis. Caution should be used in patients with significant tachydysrhythmias, or in the context of hypothermia.

Adult dosages

PCP: Anaphylaxis

- 0.5 mg IM every 5 minutes. May repeat up to 3 times.

PCP: Severe bronchospasm with impending respiratory arrest

- MANDATORY CLINICALL CONSULTATION (1-833-829-4099) PRIOR TO ADMINISTRATION.
- 0.5 mg IM every 5-20 minutes.

ACP: Pre-arrest anaphylaxis or bronchospasm

- 50-100 mcg IV/IO. May repeat as necessary.

ACP: Cardiac arrest

- 1 mg IV/IO every 3-5 minutes. Suggested maximum dose of 3-4 mg.

ACP: Peri-arrest hypotension

- 10 mcg IV/IO slow push every 2-3 minutes as required.

ACP: Significant bradycardia

- 2-10 mcg/minute IV/IO infusion.

Pediatric Considerations And Dosing

Follow weight-based dosing.

PCP: Anaphylaxis

- 0.01 mg/kg IM to maximum of 0.5 mg. May repeat up to 3 times.

PCP: Severe bronchospasm with impending respiratory arrest

- MANDATORY CLINICALL CONSULTATION (1-833-829-4099) PRIOR TO ADMINISTRATION
- 0.01 mg/kg IM to maximum of 0.5 mg

PCP: Severe croup

- 5 mg by nebulizer mask
  - MANDATORY CLINICALL CONSULTATION (1-833-829-4099) PRIOR TO ADMINISTRATION
  - If under 1 year of age: 0.5 mg/kg to maximum of 5 mg
  - Total volume of fluid in nebulizer mask should be 5 mL
  - Requires additional training

ACP: Cardiac arrest

- 0.01 mg/kg IV/IO

ACP: Pre-arrest anaphylaxis

- 5 mcg/kg IV/IO

ACP: Peri-intubation resuscitation

- 1 mcg/kg slow push IV/IO every 2-3 minutes

Mechanism Of Action

EPINEPHrine acts on alpha- and beta-adrenergic receptors. Alpha-adrenergic activity produces vasoconstriction and reduces vascular permeability; beta-adrenergic activity results in bronchial smooth muscle relaxation, increased heart rate, and increased force of cardiac contraction. EPINEPHrine also inhibits histamine release.

Pharmocokinetics

When given intramuscularly or intravenously, EPINEPHrine has a very rapid time of onset, and a relatively short duration of action, which may necessitate repeat doses.

Adverse Effects

Common reactions to systemically administered EPINEPHrine include anxiety, tremor, dizziness, sweating, palpitations, headache, and nausea. Rapid increases in blood pressure and heart rate can occur.

Accidental injection of epinephrine into a digit, hands, or feet may result in a loss of blood flow to the area.

Overdose

EPINEPHrine overdose may produce significantly elevated blood pressures and heart rates, which may in turn cause cerebral hemorrhage.

Warning And Precautions

WARNING: EPINEPHRINE VIALS **MUST** BE STORED IN SPECIALLY-MARKED CONTAINERS AND **NEVER** CO-MINGLED WITH OTHER MEDICATIONS IN KITS OR BINS. INADVERTENT ADMINISTRATION OF EPINEPHRINE TO PATIENTS HAS THE POTENTIAL TO CAUSE SERIOUS HARM OR DEATH.

Patients with underlying coronary artery disease may develop signs and symptoms of angina or myocardial ischemia. Caution should be exercised in these cases.

Drug Interactions

Arrhythmias can develop in patients taking antiarrhythmic medications. Beta-adrenergic blocking drugs can limit the

effectiveness of EPINEPHrine's bronchodilating and inotropic effects.