Epinephrine 1mg/10ml
(Adrenalin)

McHenry Western Lake County EMS
Objectives

- During this session we will discuss:
- Class
- Actions
- Indications
- Contraindications
- Dosing/Routes
- How supplied
- Precautions
- Side effects
Class:

• Bronchodilator-adrenergic
  – Pharmacologic:
  – Beta-adrenergic agonist
  – Therapeutic:
  – Bronchodilator
  – Cardiac stimulator
  – Peripheral vasoconstrictor
Actions:

- Catecholemine w/ potent alpha and beta stimulating properties.
- High dose (>0.3 mcg/kg/min) IVP/IO: beta and alpha effects (“a” dominates)
- Peripheral vasoconstrictor
- Makes CPR more effective
- Increased coronary perfusion pressure
- Increased contractility state of the heart
- Increased vigor and intensity of VF to increase success of defibrillation.
- Increased conduction velocity and shortens repolarization.
- May generate perfusing rhythm in asystole or bradydysrhythmias.
Indications:

- 1mg/10ml
- All pulseless arrests:
  - Ventricular Fibrillation
  - Pulseless Ventricular Tach
  - Asystole and PEA (IV/IO)
  - Symptomatic Bradycardia in pediatrics
  - Severe allergic reaction/anaphylaxis (IV/IO)
Dosing/Routes:

- Adults:
  - 1mg/10ml
- Pulseless Arrest: 1mg IVP/IO q 3-5 min
- Anaphylaxis: 0.1 mg slow IVP/IO May repeat q 1min up to 2mg IVP. Reassess after each 0.1mg increment. If cardiac arrest: 1mg IVP every 2 minutes (high dose)
Dosing/Routes

- Pediatrics
- 1mg/10ml
- Peds bradycardia/cardiac arrest IVP/IO: 0.01mg/kg up to 1mg IV/IO q 3-5 minutes.
- Peds anaphylaxis: 0.01mg/kg (0.1ml/kg) up to 1mg IVP/IO Reassess after each 0.01mg/kg
How supplied:

• 1mg in 10cc
Contraindications:

- Hypersensitivity to sympathomimetics
  (Sympathomimetic drugs mimic the effects of sympathetic activation on the heart and circulation).
- Ventricular Tach secondary to cocaine (it may be considered if VT develops)
Precautions:

- Caution when used with Sodium Bicarbonate. It will be inactivated by the alkaline solution and will not be effective.
Side effects/adverse reactions:

- There are no side effects for the patient that is in Cardiac Arrest.
- For other conditions:
  - Increased heart rate, tachyarrhythmia
  - High dose may produce vasoconstriction, may compromise perfusion;
  - HTN
  - Angina
  - Increased myocardial 02 consumption
  - Can cause worsened ischemia and dysrhythmias.

Ref: MWLCEMS Protocol and 2000 Mosby’s Nursing Drug Reference Book
Case Study

• You have been called to the local grocery store for a man down. You arrive to find a gentleman on the floor who is unresponsive and not breathing. CPR is in progress and an IV has been established.

• Your first dose of Epinephrine should be:
Answer

• 1mg of 1mg/10ml Epinephrine
• How often do you give the following doses of 1mg/10ml Epinephrine to your arrest victim.
Answer

• You may give more Epinephrine every 3-5 minutes.