

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:

- Broncodilator-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 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 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 O<sub>2</sub> 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 5 minutes.

