Dopamine

McHenry Western Lake County
EMS
Objectives

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

• Adrenergic
• Chemical Class: Catecholemine
• The adrenergic receptors (or adrenoceptors) are a class of G protein-coupled receptors that are targets of the catecholamine's.
• Catecholamine's called epinephrine and norepinephrine are used in the US.

• From Wikipedia.org
Actions:

• Sympathomimetic: precursor to nor-epi, stimulates dopaminergic β and alpha receptors.

• β dose: ↑ P, ↑ force of contractions, ↑ BP and CO, ↑ renal blood flow.

• a dose: vasoconstriction; ↑ preload, afterload and BP
Indications:

• β dose: Cardiogenic shock
• α dose: Neurogenic, septic and anaphylactic shocks
Dosing/Routes:

- 400mg in 250ml or 800mg/500ml D₅W or NS
- Beta (β) dose 5mcg/kg/min
- Alpha (α) dose: 10-20mcg/kg/min Titrate to hemodynamic effect; ↑ from 5mcg/kg/min until BP and perfusion improve
Dosing/Routes

- **Calculation tip:**
- 5mcg/kg/min: Take 1\textsuperscript{st} 2 numbers of the patient's weight in pounds; subtract 2. This will = your mcgtts/min
- Example: 150 lbs = 13 (15-2)
- Answer would be 13mcgtts/min for 5mcg/kg/min
- a dose: double mcgtts
How supplied:

- Premix bag of 400mg/250ml
Contraindications:

- Tachydysrhythmias (↓ BP due to rate problem)
- Adrenal tumor
- Interactions: Deactivated by alkaline solutions
Precautions:

- Occlusive vascular disease
- Hypovolemic shock
- Cardiogenic shock with CHF
Side effects/adverse reactions:

- **CNS:** Headache, dizziness
- **CV:** Tachycardia, ↑ myocardial 02 demand
- Risk of ACS, dysrhythmias, excess vasoconstriction
- **Eyes:** Dilated pupils
- **Skin:** May cause tissue necrosis if infiltrates; check IV patency before infusing.

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

- You are treating a resuscitated cardiac arrest patient that now has a BP of 76/52.
- You have tried a fluid bolus, but that has not increased his pressure. You decide to give Dopamine.
Case Study

- Your patient weighs 200#.
- What would the initial dose of Dopamine be?
Answer

- 5mcg/kg/min
Based on the patient's weight, the drip calculation would be?
Answer

- 200# patient, -2 of the first two digits of his weight (18).
- So the rate would be 18mcgtts/min