

Diuretics

I. Overview

- A. Homeostasis
- B. Kidney function
 - 1. nephron
 - a. glomerulus -> filtrate
 - b. Bowman's capsule
 - c. proximal convoluted tubule
 - d. descending loop of Henle
 - e. ascending loop of Henle
 - f. distal convoluted tubule
 - g. collecting ducts
 - 1) aldosterone
 - 2) antidiuretic hormone
 - 2. secretion
- C. Diuretics

II. Glomerulus

- A. Osmotic Diuretics
 - 1. mannitol (Osmitrol)

III. Proximal tubule diuretics

- A. Carbonic anhydrase inhibitor
 - 1. Acetazolamide

IV. Loop Diuretics

- A. High-ceiling diuretics
- B. Mode of action
- C. Drugs
 - 1. furosemide (Lasix)
 - 2. bumetanide (Bumex)
 - 3. torsemide (Demadex)
 - 4. ethacrynic acid (Edecrin)
- D. Uses
- E. Pharmacokinetics
- F. Adverse effects
 - 1. hypokalemia

V. Distal Convoluted Tubule Diuretics = Thiazides

- A. Drugs
 - 1. hydrochlorothiazide (Microzide)
 - 2. chlorthalidone (Thalitone)
 - 3. metolazone (Zaroxolyn)
- B. Mechanism of action
- C. Hypertension link

VI. Collecting Tubule Diuretics = Potassium-sparing Diuretics

- A. Normal physiology - Aldosterone
- B. Aldosterone antagonists
 - 1. spironolactone (Aldactone)
 - 2. eplerenone (Inspra)
- C. Sodium channel blockers
 - 1. triamterene (Dyrenium)
 - 2. amiloride (Midamor)