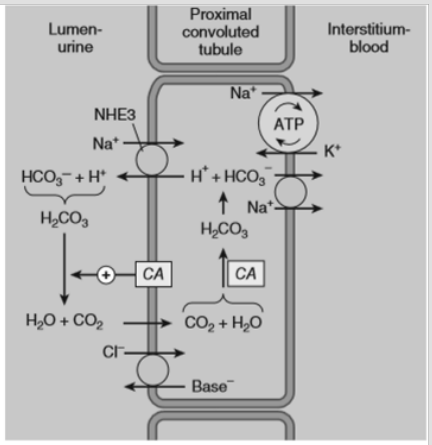
Definitions:

Diuretic:	Agent that increases urine volume.
Natriuretic:	Agent that increases in renal sodium excretion.
Aquaretics-:	Agent that causes an increase in excretion of solute-free water (Osmotic Diuretics)

Diuretic Agents:

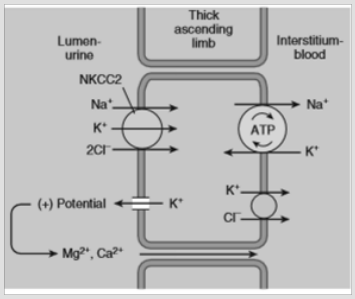
Carbonic anhydrase inhibitors:	Acetazolamide
Loop Diuretics:	Frusemide, ethacrynic acid, torsemide, bumetanide
Thiazide Diuretics:	Hydrochlorothiazide, chlorthiazide, indapamide
Potassium sparing Diuretics:	Spironolactone, eplerenone, amiloride, triamterene
Osmotic Diuretics:	Mannitol
ADH antagonists:	Conivaptan

Carbonic Anhydrase Inhibitors:



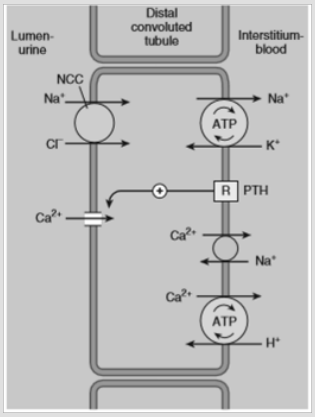
> Bicarbonate diresis (sodium bicarbonate excretion)
> Metabolic acidosis
>Increased potassium loss (High sodium concentration reaching collecting duct.)
> Diuresis limited to 2-3 days
> Uses: - severe acute glaucoma
- High altitude sickness
> A/E: renal stones

Loop Diuretics:



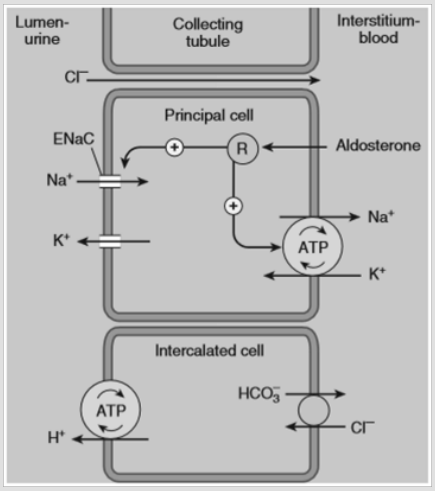
> Inhibit cotransport of Na+, K+ and Cl-
> 'High' ceiling' diuretics
> Adverse effects: - Hypokalemia
- Alkalosis
- Ototoxicity
> Clinical Use: = Oedema -> Heart failure, ascites, pulmonary oedema.
= Short duration of action (4hrs) -> not preferred in HTN

Thiazide Diuretics:



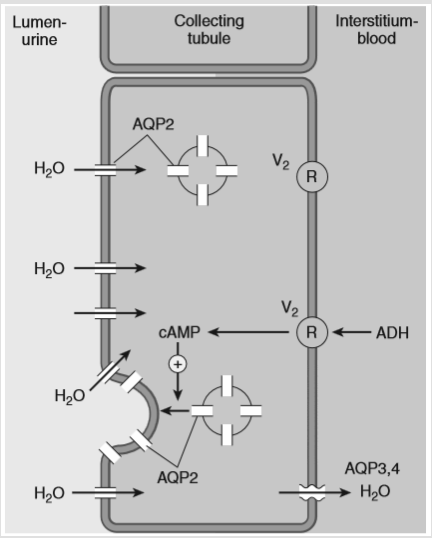
> Inhibit sodium chloride cotransport
> Moderate, sustained Na+and Cl- diuresis
> Adverse effects: - Hypokalemia, metabolic alkalosis, hypercalcemia
- Hyperglycemia, hyperuricemia, elevated lipids.
> Clinical Uses: = Hypertension

Potassium-sparing Diuretics:



> Aldosterone antagonitsts: - Spironolactose
- Eplerenone
-> Reduces synthesis of sodium channels
> Sodium channel inhibitors: - Amiloride
- Triamterene
-> Decreased sodium reabsorption
> Adverse Effects: - Hyperkalemia, - Acidosis, - Gynecomastia
> Indications: HTN and HF
> Should never be used with angiotensin antogonists

ADH Antagonists:



> Antidiuretic hormone facilitates water reabsorption (in collecting tubule)
> ADH stimulates V2 receptors: Stimulation of adenylyl cyclase
-> Increased cAMP = causes insertion of water channels (aquaporins) in the luminal membrane.
> ADH antagonists: Decrease water absorption by blocking V2 receptors (Convaptan, Tolvaptan)
> Uses: syndrome of inappropriate ADH secretion.

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