Types	Sub-types	MOA	Uses	Adverse effects
A)Inhibiting transportation in the Convoluted Proximal Tubule-	Osmotic Diuretics **Mannitol – I.V**	They are hydrophilic compounds that are easily filtered through the glomerulus with little re-absorption and thus ↑urinary output via Osmosis.	-↓intracranial pressure in neurological condition. -↓intraocular pressure in acute glaucoma. -maintain high urine flow in acute renal failure during shock	-Extracellular water expansion and dehydration . -Hypernatremia due to loss more water than sodium.
	Carbonic Anhydrase Inhibitors **Acetazolamide – Orally, Dorsolamide (Ocular) ; Brinzolamide (Ocular).** Used for treatment of glaucoma (applied topically to eye. -Have no diuretic or systemic side effects.	Simply inhibit reabsorption of sodium and bicarbonate	-Glaucoma -Alkalization of urine -metabolic alkalosis. -Epilepsy; Benign intracranial hypertension -Acute mountain sickness - Hyperphosphatemia	-Sedation and drowsiness. - Hypersensitivity -Hyperchloremic Metabolic Acidosis -Renal stone - Hyperchloremia -hyponatremia - hypokalemia
B. Acting on the Thick Ascending Loop of Henle (loop diuretics)High ceiling.(Furosemide - torsemide - Bumetanide - Ethcrynic acid)	Simply inhibit the coupled NA/K/2Cl transport in the loop of Henle. Also‹they have potent pulmonary vasodilation effects via PGs.(Prostaglandin & prostacyclin) .They are Given orally or I. V.		-Edema (Pulmonary edema, Congestive heart failure) -Acute renal failure given I.V -Hyperkalemia -Hypercalcemia	Ototoxicity Metabolic alkalosis Acute Hypovolemia Hyponatraemia. Hypomagnesaemia Hyperuricemia Hypokalemia Hypersensitivity
C. Inhibiting Transportation in the Distal Convoluted Tubule (Hydrochlorothiazide Indapamide,Metolazone)	Inhibit Na+ via inhibition of Na+/Cl- co-transporter	**-Hypertension Drug of Choice (Hydrochlorothiazide‹ Indapamide)** -Refractory Edema together with Loop diuretics **(Metolazone.)** -Nephrolitiasis due to idiopathic hypercalciuria (Renal stone) & hypocalcemia. -Nephrogenic Diabetes Insipidus. -Treatment of mild heart failure (to reduce extracellular volume).		-hypercalcemia due to PTH -hyponatremia -hyperglycemia -hyperlipidemia -hyperurecemia
D. Inhibiting transportation in the Cortical Collecting Tubule	Direct antagonist of mineralocorticoid receptors (Aldosterone Antagonists e.g **Spironolactone**	•Spironolactone is a synthetic steroid that acts as a competitive antagonist to aldosterone at its cytoplasmic receptors •Act in collecting tubules and ducts by inhibiting Na reabsorption and K & H secretion (K-sparing effect).	-As diuretics in states of primary mineralocorticoid excess (e.g. Conn's syndrome; -Ectopic ACTH production) secondary aldosteronism from (CHF; Hepatic Cirrhosis, Nephrotic syndrome) -To overcome the hypokalemic action of diuretics.(**Hypertension)** -Hirsutism -Addison's disease	-Hyperkalemia (increases) -Hyperchloremic metabolic acidosis. -Antiandrognic effects (e.g. gynecomastia, impotence) with spironolactone -kidney stone with Triametrene -GIT upset and peptic ulcer
	Indirect via inhibition of Na+ influx in luminal membrane (**e.g. Triametrene, Amiloride)**	Do not block the aldosterone receptor but instead directly interfere with Na+ entry through the epithelial sodium ion channels (ENaC) in the apical membrane of the collecting tubule.		