

SODIUM GLUCOSE COTRANSPORTER2(SGLT2)INHIBITORS

- In the normal individual, the proximal convoluted tubule reabsorbs almost all of the glucose filtered by the glomeruli. Ninety percent of the glucose reabsorption occurs through SGLT2
- These medications inhibiting this transporter (SGLT2) using the currently available drugs will result in glucose excretion of only 30–50% of the amount filtered by proximal convoluted.



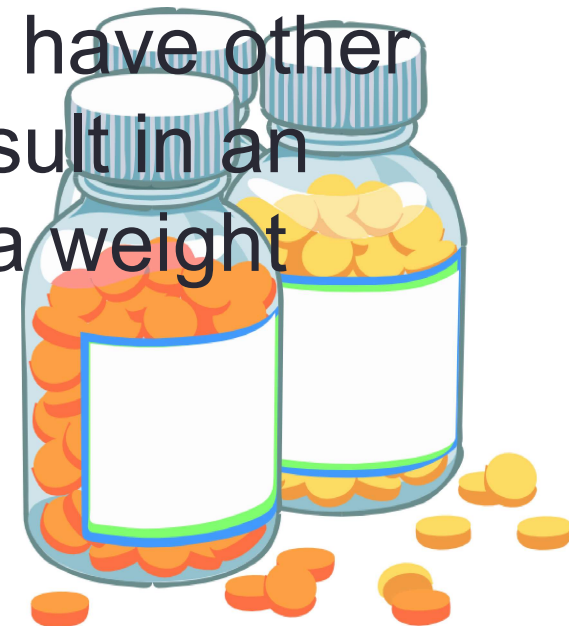
(SGLT2)INHIBITORS Drugs

1. Dapagliflozin
2. Canagliflozin
3. empagliflozin
4. ipragliflozin



Clinical Indications

- Currently, the only indication for the use of these drugs is as third-line therapy for diabetes mellitus. SGLT2 inhibitors will reduce the hemoglobin A1c by 0.5–1.0%, similar to other oral hypoglycemic agents. Even though SGLT2 inhibitors are not indicated for other diagnoses, they do have other minor effects. SGLT2 inhibitors will result in an average weight loss of 3.2 kg versus a weight gain of 1.2 kg with glipizide.



LOOP DIURETICS

- Loop diuretics selectively inhibit NaCl reabsorption in the TAL
- Loop diuretics inhibit NKCC2, the luminal $\text{Na}^+/\text{K}^+/2\text{-Cl}$ transporter in the TAL of Henle's loop. By inhibiting this transporter, the loop diuretics reduce the reabsorption of NaCl



LOOP DIURETICS DRUGS

- Bumetanide

- Furosemide

- Torsemide

- Ethacrynic acid

Sulfonamide loop agents

Not a sulfonamide but has typical loop activity and some uricosuric action



Clinical Indications

The most important indications for the use of the loop diuretics include acute pulmonary edema and other edematous conditions.

- **Hyperkalemia** loop diuretics can significantly enhance urinary excretion of K^+
- **Acute Renal Failure** Loop agents can increase the rate of urine flow and enhance K^+ excretion in acute renal failure
- **Anion Overdose** Loop diuretics are useful in treating toxic ingestions of bromide, fluoride, and iodide, which are reabsorbed in the TAL. Saline solution must be administered to replace urinary losses of Na^+ and to provide Cl^- so as to avoid extracellular fluid volume depletion.

