Proximal tubule diuretics

This group of diuretics includes carbonic anhydrase inhibitors , which inhibit bicarbonate reabsorption in the proximal tubule with subsequent bicarbonate diuresis. Significant bicarbonate losses can lead to metabolic acidosis . However, the effect gradually decreases over several days. The cause is increased NaCl reabsorption, which leads to acidosis.

Representatives

Acetazolamide Dorzolamide

The two main representatives are:

- acetazolamide ,
- dorzolamide .

Indication

The main indication is glaucoma therapy . The ciliary body secretes bicarbonate into the intraocular fluid by a mechanism similar to tubular reabsorption, but in the opposite direction. It can also be blocked by carbonic anhydrase inhibitors, leading to a decrease in the amount of intraocular fluid. Dorzolamide is given as eye drops . Another indication is the correction of metabolic alkalosis and prophylaxis and treatment of altitude sickness.

Side effects and toxicity

- Metabolic acidosis .
- Kidney stones - Phosphaturia and hypercalciuria develop during bicarbonate diuresis. Under these conditions, calcium salts become potentially insoluble at alkaline pH , thus meeting the conditions for stone formation .
- Hypokalaemia .
- CNS disorders - confusion, drowsiness.

Links

related articles

- Diuretics
- Renin-angiotensin-aldosterone system
- Hypertension
- Hypertensive crisis

Source

- MARTÍNKOVÁ, Jiřina, Stanislav MIČUDA and Jolana CERMANOVÁ. *Selected chapters from clinical pharmacology for bachelor study: Cardiovascular system* [online]. © 2000. [feeling. 2010-07-02]. < https://www.lfhk.cuni.cz/farmakol/predn/bak/kapitoly/prednasky/kardio-bak.ppt/ >.