

Kalium-sparing diuretics

Kalium-sparing diuretics act as **aldosterone antagonists** in the collecting duct and in the lower part of the distal tubule. It can be a direct antagonism – for example, spironolactone acts as a blocker of the mineralocorticoid receptor. In contrast, e.g. amiloride inhibits Na⁺ transport to ionic channels in the luminal membrane, thus reducing sodium resorption. This also reduces the loss of potassium in the urine, as resorption of Na⁺ from the collection ducts creates a negative electrical potential in their lumen, which facilitates the secretion of K⁺ and H⁺ into the urine.

Representatives

The main representatives include:

- spironolactone, and its active metabolite, kalium-canrenoate
- amiloride

Indications

Increased mineralocorticoid effect due to primary or secondary aldosteronism. Secondary aldosteronism is a consequence of heart failure, hepatic cirrhosis, nephrotic syndrome and the administration of thiazide and loop diuretics.

Side effects and toxicity

- Hyperkalemia can also reach life-threatening levels. The risk of this complication is intensified if the kidneys are affected or with the simultaneous administration of drugs (beta-blockers, nonsteroidal antirheumatics or ACE inhibitors).
- Hyperchloremic metabolic acidosis can be provoked when inhibiting secretion H⁺ under simultaneous K⁺ secretion..
- Gynecomastia – spironolactone.

Links

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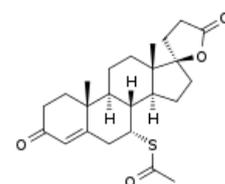
- Diuretics
- Renin-angiotensin-aldosterone system
- Hypertension
- Hypertensive crisis

Source

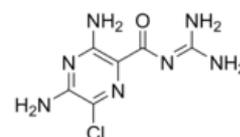
- MARTÍNKOVÁ, Jiřina – MIČUDA, Stanislav – CERMANOVÁ, Jolana. *Vybrané kapitoly z klinické farmakologie pro bakalářské studium : Kardiovaskulární systém* [online]. ©2000. [cit. 2010-07-02]. <<https://www.lfhk.cuni.cz/farmakol/predn/bak/kapitoly/prednasky/kardio-bak.ppt/>>.



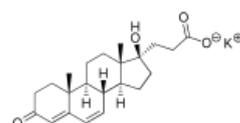
Kalium-canrenoate (Aldactone®) 125 mg in ampoule for i.v. application



chemical structure of spironolactone



chemical structure of amiloride



chemical structure of potassium canrenoate