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INDOLINOREN IMPACT ON URINARY FUNCTION OF KIDNEYS WITH TERMS OF ALDOSTERONE RECEPTOR BLOCKADE

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Introduction. The presence of various pharmacological properties of compounds that contain 2-oxoindolin heterocyclic system are established, including diuretic effect. Available data show that diuretic effect of 2-oxoindolin derivatives can be expressed through the inhibition of aldosterone secretion and improved renal blood flow.

The aim of our study was to investigate the impact of new original 2-oxoindolin named "indolinoren" on kidney urinary function under the condition of aldosterone receptor blockade.

Materials and methods. Reduction of mineralocorticoid activity was simulated by injecting potassium-sparing diuretics spironolactone 20 mg/kg, which expresses anti-aldosterone activity. The investigated substance indolinoren was administered intragastric in average effective dose. The experiments were conducted on nonlinear white rats weighing 180-220 g. Experimental animals were separated into 4 groups: I group - intact, which was administered isotonic NaCl; group II - rats, which were administered indolinoren; III-animals, which were administered spironolactone; group IV - rats, which were simultaneously administered indolinoren and spironolactone. All animals were taken out of the experiment 2 hours after the study beginning. Diuresis, excretion of sodium and potassium were analysed.

Results and discussion. It was found that indolinoren increases urine output in 2.8 times and spironolactone in 1.5 times in comparison with intact group ($p < 0.05$). Concomitant use of indolinoren and spironolactone increased diuresis in 4 times, indicating the presence of diuretic activity inherent to indolinoren with condition of aldosterone receptor blockade. There is an increase of sodium excretion in the background administration of indolinoren in 3.6 times in comparison to intact group, and 2 times in comparison to spironolactone. This indicates a positive correlation between the diuretic and natriuretic activity of indolinoren. Excretion of potassium in urine has doubled after indolinoren administration in comparison to the intact group. The increase of potassium clearance in urine after indolinoren administration compared to spironolactone (in 1.42 times), testifies that indolinoren is less potent than aldosterone receptor blockers on potassium clearance.

Conclusion. Indolinoren shows diuretic activity under conditions of aldosterone receptor blockade.