

UDC: 612.018.67:612.015.31

## MECHANISMS OF HORMONAL SYSTEMS REGULATING WATER-SALT METABOLISM

**Shvets M.V.**

*Asklepios hospital Schaufling, Neurological clinic, Germany*

**Key words:** hormonal systems, water-salt homeostasis, renin-angiotensin system, aldosterone,  $\alpha$ -atrial natriuretic hormone, vasopressin.

Hormonal systems controlling water-salt homeostasis under the conditions of extreme water balance changes are important under certain conditions, as they involve renin-angiotensin system, aldosterone,  $\alpha$ -atrial natriuretic hormone and vasopressin in the pathological process.

The problem of hormonal regulation violations is pressing for scientists and clinicians. This is because excessive activation of hormonal systems leads to defection of compensatory processes with rapid development of decompensation, which significantly worsens the prognosis of the disease.

The aim of the study was to elucidate the changes in renin activity of blood plasma, vasopressin and  $\alpha$ -atrial natriuretic hormone under conditions of 48-hour water deprivation.

Under experiments on male white rats it was shown, that during 48-hour water deficiency renin-angiotensin system was substantially activated - the activity of plasma renin increased. Activation (tension) of the antinatriuretic system was followed by activation of the antidiuretic system as plasma vasopressin levels increased. The plasma concentration of  $\alpha$ -atrial natriuretic hormone did not change. After a 48-hour water deprivation in control animals, a positive correlation between plasma vasopressin versus renin activity disappeared.

The results of the study indicated transition of regulatory systems to an autonomous functioning mode, meaning that each chain reacted to its priority homeostasis parameter.