

autonomous formation of androgens and the development of relative hyperandrogenism. In addition, obesity is accompanied with an increase in the level of 5-alpha-reductase. Thus, apart from the ovaries and adrenal glands, adipose tissue is the source of androgen production in obese persons. Women with obesity and polycystic ovary syndrome have more severe insulin resistance and hyperandrogenism, a more unfavorable lipid profile and a reduced quality of life. Thus, the reduction of the body weight causes impairment of clinical hyperandrogenism manifestations, which is an important component of treatment for such a comorbid pathology.

**Olenovych O.A.**

**TUBULOINTERSTITIAL SYNDROME DEVELOPMENT IN THE DYNAMICS OF ALLOXAN-INDUCED EXPERIMENTAL DIABETES MELLITUS**

*Department of Clinical Immunology, Allergology and Endocrinology  
Bukovinian State Medical University*

The aim of the presented study was to explore the peculiarities of tubulointerstitial syndrome development in the dynamics of alloxan-induced experimental diabetes mellitus.

The experiments were carried out on 60 white non-linear mature male rats, 30 with experimental diabetes mellitus (EDM) induced by intraperitoneal administration of alloxan at a dose of 160 mg/kg of body weight, 30 intact rats served as the control group. After 10, 25 and 45 days of the experiment the animals with EDM of corresponding duration and 10 animals of the control group were withdrawn from the experiment. The kidneys, removed after decapitation of rats, were dissected to 3 parts – renal cortex, medulla and papilla, sodium and potassium content was determined in water-extract of the corresponding part of the renal parenchyma, and papillary-cortical, papillary-medullary and medullary-cortical concentration ion gradients were calculated.

Calculation of the concentration gradients of sodium ions revealed a two-fold decrease in the papillary-medullary gradient and a two-fold increase in the medullary-cortical gradient with practically unchanged papillary-cortical gradient when comparing the results of animals with 11-day EDM with control indices. At the same time, there was a significant increase in papillary-cortical and medullary-cortical potassium gradients (1,6 times and 2,6 times, respectively) with a 1,5-fold decrease in papillary-cortical potassium gradient in animals of this experimental series.

Significant suppression of papillary-medullary and papillary-cortical concentration sodium gradients, as well as a slight limitation of its medullary-cortical gradient were established in case of 26-day long EDM. The concentration potassium gradients were significantly reduced.

The papillary-cortical and medullary-cortical concentration sodium gradients were found to be significantly increased, while the papillary-medullary sodium gradient was reliably decreased in 46-day long EDM. Similar changes concerned the concentration potassium renal gradients.

Thus, the results of the study of tubulointerstitial disorders in the dynamics of alloxan-induced EDM suggest that changes in the concentration gradients of sodium and potassium are already observed at the early stages of pathology and indicate the initiation of tubular dysfunction accompanied by intensification of natriuresis and kaliuresis. It is disorders of tubular sodium and potassium transport, redistribution of their content between the vascular, tubular and interstitial compartments of the kidneys that lead to changes in local hemodynamics in the kidneys, hydrophilicity and osmolarity of the interstitium, limitation of regulatory influence of the renal countercurrent multiplication system, disturbance of urine concentrating mechanisms and water-osmotic balance regulating system. Further development of glomerular-tubular and tubular-tubular imbalance, suppression of aldosterone- and vasopressin-dependent mechanisms of interstitial osmolarity regulation will contribute to secondary damage of tubules and interstitium of kidneys as well as the progression of renopathy.