

Tubulointerstitial syndrome in experimental diabetes mellitus

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Abstract

Adequate assessment of the functional renal state, especially in the case of early diagnosis of its disorders, requires an analysis not only of the glomerular apparatus of the kidney, but also of the condition of tubulointerstitial tissue (TIT) known to be involved into the pathological process in the kidneys much earlier than glomerular apparatus, and consequently the relatively preserved glomerular structure, however, does not ensure the normal functioning of the nephron. Considering an importance of timely diagnosis of tubulo-interstitial syndrome, its character, severity of TIT lesions for prediction of renal impairment progression intensity in clinical and experimental studies, the objective of this research was to clarify the peculiarities of tubulointerstitial syndrome (TIS) in alloxan-induced experimental diabetes mellitus (EDM) known to be accompanied by the pathology of the interstitium, tubular-interstitial dysfunction. On 26th day of after the induction of EDM in white non-linear male rats the kidneys of diabetic and control animals were removed, dissected to renal cortex, medulla and papilla for further measurement of tissue sodium content and calculation of papillary-cortical, papillary-medullar and cortical-medullar osmotic concentrational sodium gradients. The results of the investigation demonstrated a decrease of sodium concentration, mainly in the renal papilla and, accordingly, a decline of papillar-medullar, medullar-cortical and papillar-cortical gradients as compared to the control parameters. The detected changes are indicative of the inhibition of proximal tubular sodium reabsorption and, despite regulatory control of the renal countercurrent multiplication system and intensification of sodium reabsorption at the level of the ascending Henle loop, excretion of urine with high osmolarity and significant sodium loss from the body.



Biography:

Olenovych O.A. is an Associate Professor of the Department of Clinical Immunology, Allergology and Endocrinology in HSEEU «Bukovinian State Medical University» (Chernivtsi, Ukraine). She has achieved the specialty certificate in Endocrinology in 2003 and completed her PhD degree in Endocrinology in 2005. She specializes in the study of kidney functions in case of endocrine pathology and her current field of scientific interest is diabetic kidney disease. She has published more than 50 papers in reputed journals and has been a speaker in national and international conferences.

Speaker Publications:

1. Olenovych Olha, The desquamation of the endothelium due to normalization of glycemia decreases in patients with diabetes mellitus *Pharmacologyonline*, Volume 2, 30 August 2018, Pages 74-81

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