Journal of
Nephrology & Renal Diseases

Abstract

Personalized treatment of diabetic nephropathy in patients with diabetes mellitus type 2

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Abstract:

Statement of the Problem: The formation of diabetic nephropathy (DN) in patients with diabetes mellitus (DM) type 2 includes stages from preclinical structural changes in kidney tissue in the first years of the disease to diffuse or nodular glomerulosclerosis after 15-20 years of DM. It was found that microalbuminuria is not first and not most specific sign of DN in DM. These facts became the prerequisite for the search of earlier preclinical markers of structural changes in kidney in type 2 DM. The purpose of the study is to develop the method of personalized treatment of DN in DM type 2, which provides for personalized use of hypoglycemic drugs based on dominant clinical problem and predictive urinary proteomic profile. Methodology & Theoretical Orientation: Patients with DM type 2 assigned to groups based on standard methods (BMI, central and renal hemodynamics, pre- and postprandial blood glucose, Hb1Ac, lipid profile, GFR, AER, creatinine, urea, potassium in serum): group 1-patients with DM type 2, DN and CKD C 1-3a; group 2-patients with DM type 2, DN and CKD C 3b-5. All patients underwent quantitative analysis of ceruloplasmin, podocin, MMP9, E-cadherin, cystatin C, MCP-1, NGAL in urine by ELISA. Conclusion & Significance: The personalized treatment obtained - Gliclazide MR used 30–120 mg/day, when high intensity of expression of ceruloplasmin, podocin, MMP9 detected in urinary proteome; empagliflozin used 10-25 mg/day, when high intensity of expression of E-cadherin, cystatin C detected in urinary proteome; the combination of Liraglutide in dose of 0.6 mg/day, followed by an increase to 3 mg/day, adding 0,6 mg at least 1 week for 4 weeks and Gliclazide MR 30-60 mg/day administered, when high intensity of expression of MCP-1, NGAL detected in urinary proteome. The introduction of personalized therapy of DN in DM type 2 in clinical practice was recommended.

Biography:

Vagif Magomedeminovich Ibraghimov, Professor PhD, Department of Faculty and Hospital Pediatrics, Head of Educational Department of Dagestan State Medical University, Makhachkala, Dagestan, Russia. He has 40 publications. Main areas of research work are bladder dysfunction and its role in the development of pyelonephritis in children, mechanisms for the development and progression of diabetic nephropathy, pharmacology of nephroprotectors.

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3. Macisaac RJ, Jerums G (2011) Diabetic kidney disease with and without albuminuria. Curr Opin Nephrol Hypertens 20:246–257.
4. Wanner C, Inzucchi SE, Lachin JM, et al. (2016) Empagliflozin and Progression of Kidney Disease in Type 2 Diabetes. N Engl J Med. 375(4):323-334.
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8th International Conference on Nephrology and Urology; April 24-25, 2020; Prague, Czech Republic

Citation: Vagif Magomedeminovich Ibraghimov; Personalized treatment of diabetic nephropathy in patients with diabetes mellitus type 2; April 24-25, 2020; Prague, Czech Republic