



Effectiveness of Sugar-Reducing Drugs on the Kidneys in Patients with Type 2 Diabetes Mellitus

Juraeva Kh. I.¹, Botirova Z. A.²

^{1,2} Bukhara State Medical Institute, Uzbekistan

Introduction

Diabetes mellitus is becoming a real epidemic these days as it affects many people in our population. According to many authors, the number of patients with this pathology will double in 50 years. Wrong diet, bad habits, wrong way of life aggravates the situation of these patients. Stress and other factors also have a detrimental effect on human health, many literature provides examples stress-dependent metabolic disorders, including diabetes mellitus [1,2,5,6]. Diabetes is the most common cause of chronic kidney disease (CKD). Both conditions usually coexist. Glucometabolic changes and concomitant dialysis in diabetes and CKD make it difficult to lower glucose levels, increasing the risk of hypoglycemia. Glucose-lowering drugs have mainly been studied in people with near-normal kidney function. To guide treatment, it is important to characterize the current knowledge of glucose-lowering agents in CKD (chronic kidney disease) [1, 2]. Currently, the level of GFR (glomerular filtration rate) is recognized as the best method for assessing kidney function in general, both in healthy individuals and in type 2 DM [3, 4,7].

Purpose of the study: To study the effect of glucose-lowering drugs on the kidneys in patients with type II diabetes mellitus.

Material and research methods. The study included 61 patients (31 men and 30 women) with type 2 diabetes who were hospitalized in the endocrinology department of the Bukhara Regional Endocrinological Clinical Hospital for the period from 2020 to 2021. The average age of patients was 53 ± 05 years. According to the anamnesis, the average duration of type 2 diabetes was 5.3 years. According to the standards adopted in our republic, we determined the stages of CKD [3, 4]. All patients included in the study underwent clinical and laboratory-instrumental examination. Using liquid chromatography on an analyzer with standard kits, glycosylated hemoglobin HbA1c was determined. The average level of glycosylated hemoglobin (HbA1c) was 9.53%. The stages of CKD were determined according to the KDOQI recommendations [9,10]. All patients included in the study underwent clinical and laboratory-instrumental examination. The criteria for the trial were direct comparison of active regimens of glucose-lowering therapy or active regimen with standard care in people with diabetes and CKD (estimated glomerular filtration rate (eGFR) <60 ml/min/1.73 m²) was appropriate. Statistical processing of the study results was carried out using the Statistica program.

Research results. According to the study, in patients with type 2 DM, chronic kidney disease was detected at preclinical stages C2 and C1 (56.2% and 25.8%, respectively). All patients with type 2 diabetes were diagnosed with chronic kidney disease (CKD). The condition of the patients was not related to their gender characteristics.

It should be emphasized that the main part of chronic kidney disease in patients with type 2 DM was diagnosed at preclinical stages C2 and C1 (50.04% and 26.9%, respectively), when the serum creatinine level is normal. Preclinical stages of CKD were diagnosed in patients with type 2 DM with a persistent decrease in GFR for at least three months [1,2]. These patients noted the correct way of

life in the anamnesis, which they supported along with physical activity. The next most frequent stages were C3a, C4 and C3b, which averaged 12, 3 and 2.57%. End-stage CKD was detected in one patient with type 2 DM. This patient had minimal GFR, which in turn led to end-stage CKD. Having studied the anamnesis of the data that in patients in whom we found deterioration in renal GFR, they did not maintain a lifestyle, which in turn could serve as a transition to a more severe stage of CRF. In the group of patients in whom we identified deterioration in GFR from anamnestic data, they noted a hypo dynamic lifestyle, which could affect the state of the kidneys.

The level of fasting blood glucose decreased in the subjects from an average of 0.48 mmol / l, -0.78 to -0.19; I 2 = 0%. Systolic blood pressure (BP) decreased by -4.68 mm Hg, from -6.69 to -2.68; I 2 = 40%, diastolic blood pressure decreased by -1.72 mm Hg. Art., from -2.77 to -0.66; I 2 = 0%. Heart failure decreased by RR 0.59, 0.41–0.87; I 2 = 0%. Biochemical analysis showed the following results: hyperkalemia RR 0.58, 0.42–0.81; I 2 = 0% and albuminuria at -8.14 mg/mmol creatinine, -14.51 to -1.77; I 2 = 11. HbA1c level -0.53%, -1.01 to -0.06 (-5.8 mmol/mol, -11.0 to -0.7); I 2 = 41%; the level of significance was $p \geq 0.05$.

In our study, metformin at a dose of 500 to 1500 mg was chosen as the main glucose-containing drug, depending on the level of glucose in the blood. Metformin is known to be a member of the biguanide group. They help reduce blood glucose, improve the sensitivity of receptors. What plays an important role in type II diabetes?

Glucose agonists may have little or no effect on GFR, hypoglycemia, or discontinuation due to side effects (low-certainty evidence. Little or no effect on HbA1 GFR.

Conclusions

Based on the foregoing, we can state that by changing the lifestyle and physical activity in patients with type II diabetes mellitus with chronic renal failure, we can improve their quality of life and improve the condition of the kidneys, which leads to an increase in GFR. Glomerular filtration rate is an indispensable marker for determining the severity of chronic kidney disease before symptoms appear.

Literature

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