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MODERN VIEWS ON THE DEGREE OF NEPHRINURIA ACCORDING TO THE DURATION OF THE DISEASE IN A COMORBID STATE WITH HYPERTENSION AND DIABETES MELLITUS

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Annotation
According to diabetes incidence statistics for 2011, 360 million patients were registered, and by 2030 their number will reach 552 million.In recent years, when talking about comorbidity, the most discussed area in the field of internal medicine is the cardiorenal continuum. Cardiovascular diseases, obesity, type II diabetes and renal dysfunction are becoming more and more pandemics of the 21st century. In recent years, the main cause of kidney dysfunction is not its primary disease, but hypertension, that is, essential arterial hypertension (AH) and diabetes.
Earlier detection of changes in podocytes and nephropathy makes it possible to diagnose and stop the process of kidney damage before the appearance of clinical signs.

Keywords: nephrin, podocyte, diabetes mellitus, arterial hypertension, microalbuminuria.

Introduction

Relevance According to experts from the World Health Organization, the increase in the prevalence of chronic non-communicable diseases is considered an epidemic of the XXI century. [1].
In recent years, special attention has been paid to diseases that arise on the basis of the underlying disease and differ from it. Such cases were reported by the American epidemiologist-researcher A. Feinstein in 1970 and called comorbidity.[2].
Almost all studies have reported that high levels of comorbidities reduce quality of life, impair social adjustment, and increase mortality.[3,5,10].
In the last 10 years, when talking about comorbidity, the most discussed area in the field of internal medicine is the cardiorenal continuum. Cardiovascular disease, obesity, type II diabetes and kidney dysfunction are becoming more and more pandemics of the 21st century. In recent years, the main cause of impaired renal function is not its primary disease, but hypertension (AH), that is, essential arterial hypertension (AH) and diabetes. [4].

The combination of diabetes mellitus and GC is detected in 60% of cases and is a serious risk factor for cardiovascular diseases.[3,5,12]

GC accounts for 75% of cardiovascular diseases diagnosed in patients with diabetes mellitus.[3,9]The presence of type II diabetes alone increases the risk of cardiovascular disease by 2 times in men and 3 times in women, which increases by 4 times with the addition of AG.[2,6]According to the 2011 diabetes incidence statistics, 360 million patients were registered, and by 2030 their number will reach 552 million.

It is known that irreversible severe changes in target organs occur in type II diabetes mellitus. Their number increases sharply in comorbid cases, including those accompanied by HD. The combination of diabetes mellitus and HD is detected in 60% of cases and is a serious risk factor for cardiovascular diseases.[5,9]Podocytes are a complex structural structure that provides its broad functions and adaptive processes under physiological conditions. It also makes the cells very susceptible to damage.[2,7,11].

In recent years, the existence of an organic relationship between albuminuria and ultrastructural and functional disorders of podocytes has been confirmed in a number of experimental and clinical studies.[6,7]. These changes have been shown to occur long before the onset of microalbuminuria.[4,8]. The data obtained confirmed that podocytes were involved in the processes much earlier and increased interest in them. This is due to the fact that the detection of changes in this cell and nephropathy makes it possible to diagnose and stop the process of kidney damage before the appearance of clinical signs.

Purpose of the Study

Comparison of the difference in the degree of nephrinuria according to the duration of the disease in combination with hypertension and diabetes mellitus.

Materials and Methods of Research

The study included 58 patients diagnosed with DM, including 21 with type 1 DM and 37 with type 2 DM, of which 28 (48%) men, 30 (52%) women aged 18 up to 60 years old. The mean age of patients with type 1 DM was 29.7±17 years, the duration of the underlying disease was 13.5±11 years. The average age of subjects with type 2 DM was 52.5±10 years, the duration of the disease was 10.7±7.5 years. Patients were examined and treated at the Bukhara Regional Multidisciplinary Medical Center, in the Department of Nephrology and Endocrinology. The control group included 10 healthy volunteers (5 men, 5 women aged 19 to 55 years). Indicators of nephrinuria (NU)

exceeding the 75th percentile in the control group (i.e., practically not found in healthy people) were taken as "positive" values (NU+>5.78 ng/ml/g). NU+ was revealed,
The average level of HC in the subgroups of patients with A1 and A2 albuminuria did not differ between DM types 1 and 2 (8.01[5.98;7.22]and 8.05[6.07;7.82]ng/ml/g - DM1 and DM2 with A1 albuminuria, respectively, p>0.05; 9.56[7.66;9.56]and 6.91[6.73;7.06]ng/ml/g - DM1 and DM2 with A2 albuminuria, respectively, p>0.05), which, apparently, reflects the common mechanisms of podocyte damage in diabetes. With clinically obvious DN occurring with PU, urinary nephrin excretion was significantly higher than in the subgroup with albuminuria.
In patients with DM1 and DM2 duration less than 5 years, NU directly correlated with glycated hemoglobin HbA1c (R=0.78, p<0.01).
The magnitude of the NU index at different durations of diabetes was influenced by AH. This was more clearly seen in patients with type 2 DM, in whom AH was detected not only during the development of DN, but often preceded the development of kidney pathology. In this category of patients, we found a direct significant relationship between systolic blood pressure and the severity of nephrin excretion in the urine (R=0.33, p<0.05).
Type 1 and NU was detected by immunoblotting in 23% of patients with DM with normoalbuminuria, in 18% with MAU, in 28% with PU, while nephrin was not detected in the urine of healthy individuals. In the work of V. Jim[6]NU was detected in 54% of patients with normoalbuminuria and in all patients with type 2 DM with PU and MAU. As in our study, the average level of urinary nephrin excretion in patients with MAU and especially with PU significantly exceeded that in patients with lower AU.

Conclusion

Thus, in the majority (from 28 to 56%) of patients with DM, high urinary excretion of markers of podocyte damage (nephrin, podocin) is detected, which precedes the development of clinically significant albuminuria and PU, which makes it possible to use these urinary tests for early preclinical diagnosis of glomerular damage in patients with DM.

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