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Research Article

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The Importance of Proteinuria as a Predictor of Diagnosis and Risk Factor for Chronic Kidney Disease

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Abstract Proteinuria, which is a predictor of early diagnosis of chronic kidney disease, is also a risk factor for the development and progression of renal disease. The interdependence has a multi-faceted nature, and are built according to the type of feedback. On the one hand, the kidney can act as a target organ for most of the risk factors such as arterial hypertension, coronary heart disease, diabetes, age, obesity associated with albuminuria. On the other hand, a decrease in renal function and pronounced albuminuria is an important cause of the accelerated development of the terminal stage of chronic kidney disease.

Keywords proteinuria, albuminuria, chronic kidney disease, risk factors, predictor, risk factor

1. Introduction

Chronic Kidney Disease (ckd) is a problem with profound socio – economic consequences associated with widespread prevalence among people, disability and mortality due to the development of renal failure (pn) and cardiovascular complications (cvd) [1-4].

The prevalence of CKD is as common as hypertension (HD), diabetes mellitus (DM), obesity, and metabolic syndrome (MS).

The relationship between renal dysfunction and changes in the CCC is multifaceted and is built on the type of feedback [5-6].

Currently, the role of proteinuria/microalbuminuria (pu/mau) has been established) as a marker of activity, and the independent factor of progression of CKD.

The aim of the study was to assess the value of pu/mau as a marker of early diagnosis and risk factor (fr) for ckd progression.

Material and Methods

The study included 317 patients: 99 (31.2%) men, 118 (68.8%) women aged 17-78 years.

The study was conducted in two different family polyclinics of the bukhara region. The study included individuals who had not previously been seen by a nephrologist. Among them, 103 (32.5%) people did not go to the doctor at all and did not have complaints about the condition of the kidneys.

To assess possible ckdfrs in all subjects, a questionnaire was conducted. We calculated the body mass index (BMI) using the Ketle formula, depending on which we distinguished normal body weight at BMI < 25; overweight – BMI = 25-30, obesity - BMI > 30.

All subjects underwent a urine test using Combina 13 test strips ("Human GmbH", Germany). The test for measuring microalbuminuria (MAU) in urine is based on the principle of changing the color of the indicator under

the influence of proteins. The MAU level was determined on the following scale: up to 10 mg/l norm (NAU), 10-30 mg/l - initial increase, 30-80 mg/l - average increase, 80-150 mg / l - high level. To clarify the probability, MAU was determined with the albumin/creatinine ratio (ACR). ACR was evaluated as follows: Normal - normal; Abnormal - pathology; Highabnormal-severe pathology.
Renal function was assessed by glomerular filtration rate (GFR).

Results and Discussion

The detection rate of NAU (up to 10 mg / l) was 27.7%, but of these, 11.2% of ACR was Abnormal. The initial increase in MAU (10-30 mg/l) was determined in 47%, the average increase (30-80 mg/L) – in 21.8% and the high level of MAU (80-150 mg/L) - in 3.5%.
The detection rate of MAU>30 mg / L was higher in men (68.6%) than in women (46.6%). When analyzing the detection of MAU frequency>30 mg/l in different age groups, it was found that in older persons (<60 years) MAU was more common (40.6%) than in the middle (29.8%) and young (13.8%) age cohort ($p<0.001$).
In our study, FR CKD was found in 53.6% of cases, in coronary heart disease (CHD) - in 18.3% of cases. The most sensitive predictors in the history were proteinuria and abuse of analgesics and nonsteroidal anti-inflammatory drugs (NSAIDs) (44.8% and 34.2%). The detection rate of MAU>30 mg / l in patients with GB was 67.6%, in patients with CHD and DM 52.7% and 83.5%, respectively. In women with a history of proteinuria (nephropathy during pregnancy), MAU>30 mg/l was detected in 58.7%. MAU>30 mg / L, associated with the abuse of analgesics and NSAIDs, was 47.4%. ($p<0.01$). The frequency of detection of MAU>30 mg / l in persons with normal BMI was 22.3%, with overweight (BMI>25) - 49.8% ($p<0.01$).
Among the examined persons, CKD was detected in 28.7% (91 people). The distribution by stages of CKD was as follows: 1st stage-4.4%, 2nd stage-84.6%, 3rd stage-11% ($p<0.001$). CKD with 4 and 5 st. was not detected.
To assess the role of PU/MAU as a risk factor for the development of CKD, we distributed patients on the MAU scale and analyzed their frequency of occurrence of the CKD stage and associated risk factors.
At the same time, a high level of MAU (80-150 mg / l) was detected in 11 people, of which 45.5% had CKD 3 st., 54.5% - 2 st. CKD. An average increase in MAU (30-80 mg / l) was detected in 69 people, among them CKD 3 st. - in 7.2% of cases, 2 st. - 43.4%, 1 st. - 1.4%. The initial increase in MAU (10-30 mg / l) was determined in 149 people, among them CKD 3 st. - 1.3%, 2 st. - 23.5%, 1 st. - 3.4%. ($p<0.01$)
In the course of our research, we have established a link between ckd and general population characteristics-gender and age. Numerous studies suggest that CKD in men progresses faster than in women. In our studies, this was also confirmed: pronounced MAU (<150 mg / l) and 3 st. CKD were most detected among men - 76.9%.
Old age is also a risk factor for CKD. The prevalence of MAU and CKD in our study increased with age.
MS and hypercholesterolemia were the most common types of CKD.
Obesity is afr of chronic diseases: type 2 diabetes, gb and chd. These diseases are the primary cause of renal pathology [6-15].
Thus, the determination of mau and gfr is of diagnostic importance and allows earlier identification of patients of different risk groups with ckd. Determination of mau in outpatient settings will allow early diagnosis and prevention of ckd.
PU/MAU, which is a predictor of CKD diagnosis, is also a risk factor for CKD development. Hypercholesterolemia worsens the prognosis of CKD. Given the close relationship between MS with MAU and GB, it can be concluded that MS is particularly important in the development and progression of CKD.

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