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ӨНӨКӨТ ОБСТРУКТИВДУУ ӨПКӨ ООРУСУНУН МИКРОАЛЬБУМИНУРИЙИНИН ЖЫШТЫГЫН ЖАНА ЧОНДУГУН ЖАПЫЗ ТООЛОР ШАРТЫНДА ИЗИЛДӨӨ

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ИЗУЧЕНИЕ В УСЛОВИЯХ НИЗКОГОРЬЯ ЧАСТОТЫ И ВЕЛИЧИНЫ МИКРОАЛЬБУМИНУРИИ ПРИ ХРОНИЧЕСКОЙ ОБСТРУКТИВНОЙ БОЛЕЗНИ ЛЁГКИХ

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STUDY IN LOW MOUNTAINS FREQUENCIES AND VALUES OF MICROALBUMINURIA IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE

УДК: 616.633.96:616.24-036.12:612.275.1

Дүйнөдөгү олуттуу оорулардын бири бөйрөк системасынын татаалдашына алып келген өпкөнүн өнөкөт обструктивдуу оорусу (ӨӨОО). Бүгүнкү күндө, ӨӨООдеги бөйрөктүн жабыркашын изилдөө абдан маанилүү, анда эрте жабыркашы артыкчылыктуу деп эсептелет. Эрте аныктоо дем алуу органдарынын ооруларынын фонунда заара чыгаруу тутумунун татаалдашуу тобокелдигин азайтат. Өз кезегинде, бул курч бөйрөк ооруларынын алардын өнөкөт агымына өтүшүн азайтууга мүмкүндүк берет. Көбүнчө ӨӨОО фонунда бөйрөктүн жабыркашы негизги патологиялык процесстин "маскасы" астында жүрөт жана эреже боюнча узак убакытка чейин кароосуз калат. Жыл сайын калктын санынын өсүшүнө байланыштуу, сиз билгендей, дем алуу органдарынын оорулары жана алардын заара чыгаруу системасына тийгизген таасири толук чечилбей келет. Азыркы учурда, ӨӨОО менен ооруган бөйрөк патологиясын эрте аныктоо критерийлери жетиштүү деңгээлде иштелип чыккан эмес, бул, албетте, оорунун прогнозунун начарлашына алып келиши мүмкүн жана келечекте бейтаптардын ушул когортунун жашоо сапатына терс таасирин тийгизет. Изилдөөнүн максаты – тоолордогу ӨӨОО менен ооруган бейтаптардын бөйрөк патологиясынын алгачкы маркер катары микроальбуминурийинин жыштыгын жана көлөмүн изилдөө. Жүргүзүлгөн иштин жыйынтыгы боюнча, МАУ бар экендиги белгиленди, бул бөйрөк системасынын бузулушунун алгачкы белгилеринин бири болгон, COPD менен ооруган бардык пациенттерде байкалган. ӨӨОО оорусунун жогорулашы менен МАУ маанисинин прогрессиясы белгиленет.

Негизги сөздөр: микроальбуминурия, жапыз тоолор, патология, бөйрөк континуум, кардиореналдык синдром.

Одной из значимых болезней во всём мире является хроническая обструктивная болезнь лёгких (ХОБЛ), которая также приводит к осложнению со стороны ренальной системы. На сегодняшний день очень важно изучить

поражение почек при ХОБЛ, где приоритетным моментом следует считать их раннее повреждение. Так как выявление на ранних этапах заведомо снижает риск развития осложнений со стороны мочевыделительной системы на фоне заболеваний органов дыхания. В свою очередь это позволит сократить переход острых заболеваний почек в их хроническое течение. Зачастую поражение почек на фоне ХОБЛ, протекает под «маской» основного патологического процесса и как правило остаётся без должного внимания на протяжении длительного периода времени. Ежегодно в связи с нарастающим количеством населения, как известно вопрос о заболевании органов дыхания и их влиянием на мочевыделительную систему остаётся до конца не изученным. В настоящее время недостаточно разработаны критерии по раннему выявлению патологии почек у пациентов с ХОБЛ, что несомненно, может приводить к ухудшению прогноза заболевания, а также заведомо неблагоприятно отразится на качестве жизни данной категории пациентов в будущем. Цель исследования предполагается изучение частоты и величины микроальбуминурии как раннего маркера патологии почек у пациентов с ХОБЛ в условиях низкогогорья. По результатам проведённой работы отмечалось наличие МАУ, что явилось одним из ранних признаков поражения ренальной системы, наблюдается у всех пациентов с ХОБЛ. Отмечается, прогрессирующее увеличение МАУ с утяжелением степени тяжести ХОБЛ.

Ключевые слова: микроальбуминурия, болезни почек, низкогогорье, патология, ренальный континуум, кардиоренальный синдром.

One of the significant diseases in the world is chronic obstructive pulmonary disease (COPD), which also leads to complications from the renal system. Today, it is very important to study kidney damage in COPD, where early damage should be considered a priority. Since early detection will certainly reduce the risk of complications from the urinary system against the background of respiratory diseases. In turn, this will reduce the

transition of acute kidney diseases to their chronic course. Often, kidney damage against the background of COPD proceeds under the "mask" of the main pathological process and, as a rule, remains unattended for a long period of time. Every year, due to the growing number of the population, as you know, the issue of respiratory diseases and their effect on the urinary system remains not fully understood. Currently, the criteria for the early detection of renal pathology in patients with COPD have not been sufficiently developed, which undoubtedly can lead to a deterioration in the prognosis of the disease, and will certainly adversely affect the quality of life of this cohort of patients in the future. The aim of the study is to study the frequency and magnitude of microalbuminuria as an early marker of kidney pathology in patients with COPD in low mountains. According to the results of the work carried out, the presence of MAU was noted, which was one of the early signs of damage to the renal system, observed in all patients with COPD. It is noted that the progression of the MAU value with an increase in the severity of COPD.

Key words: microalbuminuria, kidney disease, low mountains, pathology, renal continuum, cardiorenal syndrome.

Introduction. Chronic obstructive pulmonary disease (COPD) is a significant health problem at the moment in a modern and multifaceted society. The frequency of the fact that COPD has a character of steady development and growth, regardless of social level and status. After reviewing data from large epidemiological studies, few papers came across. It became known that these works reflect the moment when COPD, more often has a characteristic of systemic manifestation. Chronic obstructive syndrome currently ranks fourth among the substantive causes of chronic coronary insufficiency. In Russia, by 2030, COPD will take the third place, as it became known from certain sources, therefore, it can adversely affect the quality of life of patients and lead to serious consequences [1, 2, 3].

In both heart disease and chronic obstructive syndrome, the renal system is the point of damage. Nephrological aspects in the pathology of the respiratory system have not been sufficiently studied. They are neglected for a long time. Probably - this may be due to the pronounced clinic of the main pathological concept. Treatment of patients in the late stages of the disease from the side of the kidneys negatively affects the quality of their life. This leads to serious complications such as chronic renal failure (CRF), cardiorenal syndrome (CRS), etc. A certain phase should be noted, which, if a pathological process is detected at earlier stages, will delay the onset of complications.

So the pathogenetic and pathophysiological mechanism in COPD, such processes as hypoxemia, systemic inflammation, oxidative stress, progressive activation of

the sympathetic nervous system, along with endothelial dysfunction, lead to prolonged endogenous intoxication. These facets, to a certain extent, lie at the core of changes in the cardiovascular system, and are also very obviously probable in the progression of chronic kidney disease (CKD). To a certain extent, these mechanisms are the main link in the development of the disease in combination with risk factors such as smoking, obesity, age, birth weight [4, 5].

Diagnosis of early kidney damage in this case in the initial stages of CKD, which are at risk of developing it. And also, in those who lack protein in the residual sediment, it is reasonable to conduct a test for the presence of moderately increased albuminuria (MIA) in a timely manner [6, 7, 8].

When processing the available literary sources, there were no works devoted to a detailed and more detailed study of the early lesions of the renal system. In particular, in patients with chronic obstruction in a certain region of low-mountainous terrain. The subject of the study was the identification of manifestations of kidney damage in patients with COPD at an earlier stage using a test for the presence of MIA. In the light of the obvious facts, there is a clinical picture that leads to undesirable consequences. The consequence of this is complications up to death as a result of untimely initiated preventive actions and early nephroprotective therapy [9, 10, 11].

Materials and methods of research: In the Kyrgyz Republic (Tokmok city), located in a low-mountainous area, the height above sea level is 760 meters, a survey was carried out. A retrospective study identified 82 patients with chronic obstruction. Their average age is 60.53 ± 15.48 years. The identification and severity of COPD was carried out in accordance with the standards of the international classification GOLD 2012.

In all the subjects, the gradations were analyzed according to the indicator of external respiration function (FVF). Restriction parameters included forced expiratory volume in 1 second / forced vital capacity, Tiffno index. The peak expiratory flow rate and forced vital capacity of the lungs were also determined. The forced expiratory volume in 1 second was also determined by the momentary volumetric expiratory flow rate at 25, 50, 75%, 1 / sec. It is known that this indicator reflects the nature of the damage to the bronchi at the level of small, medium and large diameters.

The severity parameters should be considered successive. With a severe course of chronic obstruction, 23 patients made up the third group. The first group included 27 patients with mild COPD. 32 patients with moderate severity were in the second group.

All groups are comparable in terms of gender, duration of the pathological process, and age. The control group (GC) consisted of 10 healthy volunteers.

The Albu-test microalbuphan (Erba lachema, Poland) was used to determine the

MIA index. Which reflects the nature of the damage to the renal system in the earlier stages of the disease.

The reliability and difference of the compared indicators was determined in accordance with the criteria of the standard SPSS programs, as well as Statistica 6.0, which had reliability at $p < 0.05$.

Results and its discussion: Changes in patency were noted at the level of the bronchi as large, as well as medium and small calibers. In patients of the 1st group,

the FEV1 restriction index was $86.29 \pm 10.74\%$. In persons of both the second and third groups, the result had differences, respectively ($71.95 \pm 18.35\%$ and $40.65 \pm 12.90\%$, $p < 0.05$). With a tendency to increase the severity of bronchial patency, there was a deterioration in the FEV1 / FVC%. PEF (l / sec) was observed at the level of 93.60 ± 4.248 CG, 72.86 ± 2.870 mild, 57.71 ± 3.872 moderate and 40.31 ± 2.499 in severe COPD, $p < 0.05$.

FVC (l / sec) in the control group was 111.10 ± 5.061 , with mild severity it was 96.08 ± 2.873 , in moderate-severe course 88.85 ± 3.471 and 61.51 ± 3.969 in severe course, reliability is $p < 0.05$. HPF data are shown in figure 1.

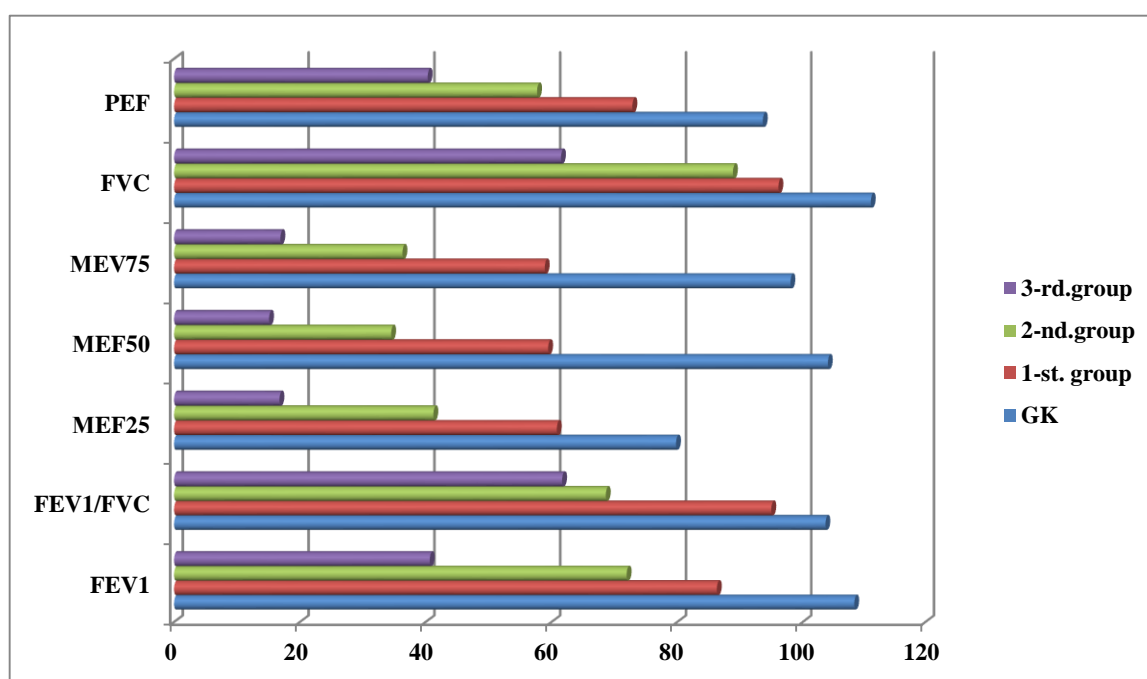


Figure 1. FVD in COPD, taking into account the severity.

Note *: Peak expiratory flow rate (PSV l / sec), forced vital capacity of the lungs (FVC l / sec), MOS 25, 50, 75 - instantaneous volumetric velocities at 25, 50.75 sec, FEV1 / FVC - (Tiffno index), FEV1 - forced expiratory volume in the first second, the significance of differences between the groups was $p < 0.05$.

In the general population, CKD is growing steadily everywhere, which can characterize as a pandemic

process. This fact is primarily due not to those pathological processes in which the patient is under the control of a nephrologist. There is a tendency of direct association of further studies of COPD, as a disease with a systemic influence, in the development of the progression of CKD in conditions of low mountains, where the end result has not been fully studied and disclosed.

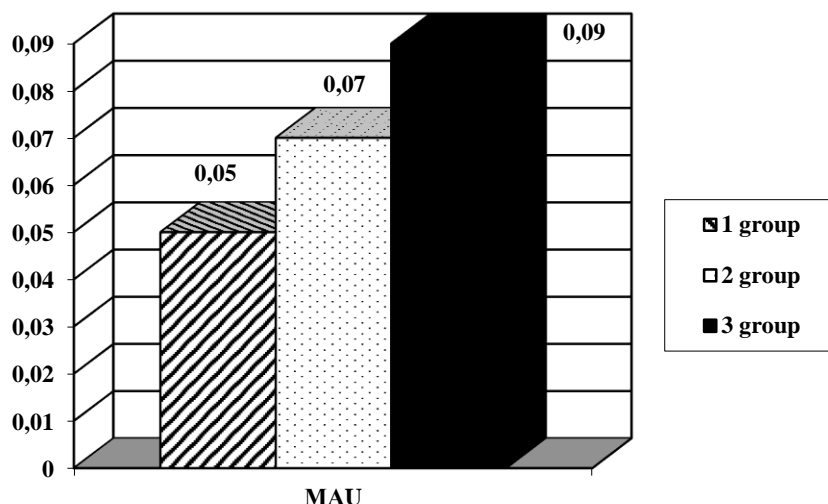


Figure 2. MIA values in patients with COPD.

Moderately increased albuminuria is a sensitive marker of endothelial dysfunction. It is present in patients with a history of atherosclerotic changes, metabolic syndrome, hypertension, diabetes mellitus (DM) [12, 13].

The MIA figures were in mild patients, 0.05 ± 0.03 g/l and 0.07 ± 0.04 g/l in moderate patients. In the third group, this indicator is 0.09 ± 0.03 g/l. Studying this marker of early renal filter damage, shown in (Fig. 2), we revealed that patients with COPD have signs of endothelial dysfunction. This is known to reflect the nature of early damage to the renal system.

Accordingly, this contributes, along with the renal pathology, to the toxic-hypoxic process on the part of the respiratory system [11]. I would also like to draw attention to the clinical and functional parameters of the renal system to identify the severity of CKD, such as glomerular filtration rate (GFR), serum creatinine, urinary sediment, and total serum protein. These indicators will reflect in more detail the nature of renal dysfunction and thereby possibly delay complications, and will also help to develop a further algorithm for managing these patients both by the nephrological service and in pulmonology.

Having common links, such as systemic inflammation, endothelial dysfunction, etc., form a mutually aggravating process. Detection of changes before clinical manifestations requires further in-depth study of this issue in the field of early detection of CKD in patients with COPD with a detailed analysis and substantiated conclusions [14]. It should be considered characteristic that COPD can be considered as a disease with the development of many

complications, for example, osteoporosis, diabetes mellitus, dysfunction of the renal system, cardio-renal syndrome.

Conclusion:

1. The fact of the presence of microalbuminuria in low-altitude conditions, which is an early sign of renal dysfunction, is observed in all patients with chronic obstructive syndrome.

2. Actually, the higher the severity of COPD became, the higher, as its severity, MIA was noted.

3. Toxic-hypoxic processes in COPD may have an aggravating effect on the further development of CKD, in turn, due to the progression of CKD; it can also have negative mechanisms for COPD.

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