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EFFECTIVENESS OF ANTIAGGREGANT THERAPY ON KIDNEY ACTIVITY IN THE PREDIALYSIS STAGE OF CHRONIC KIDNEY DISEASE

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Abstract The article presents the results of a study to evaluate the effectiveness of antiaggregant therapy on the functional status of the kidneys in 115 patients with stage II and III chronic kidney disease on the basis of a comparative study of dipyridamole and allthrombosepin. Studies have shown that long-term administration of allthrombosepin to patients has led to improved renal function. Therefore, we recognize that diphtheridamol, which is widely used as an antiaggregant drug in chronic kidney disease, does not lag behind the domestic raw material alltrombosepin.

Keywords: chronic kidney disease, glomerular filtration rate, antiaggregant, allthrombosepin, dipyridamole, fibrinogen

Introduction. With the increasing prevalence of chronic kidney disease (CHKD) worldwide, not only medical but also social and economic problems are emerging in the world. The increasing prevalence of CHKD is explained not only by the increase in the number of patients with primary renal pathology, but also by diabetes, obesity, aging of the population, and damage to individual renal vessels [2, 6]. Arterial hypertension and hyperglycemia currently play an important role in renal injury, as well as risk factors for the development of renal pathology include smoking, hyperlipidemia, obesity and metabolic syndrome [1, 2]. When factors are combined, kidney disease is more pronounced. In the last 15-20 years, the number of patients receiving replacement kidney therapy has increased more than 4-5 times [3, 5, 9].

Chronic renal failure (CRF) in Russia has occurred in 100-600 per 1 million population in the last decade; In the United States - 600-700 cases; Every year, 50 to 100 out of 1 million people suffer from this disease [7]. Because data on the prevalence of

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SBE are based on data from referrals or data provided by dialysis centers, the actual rates of prevalence and incidence of CRF may be much higher [4, 10, 12].

In the early stages of renal failure formation, there are no symptoms of renal dysfunction. A further decrease in the loss of functioning nephrons (up to 30% of normal) leads to a more pronounced impairment of renal function - an increase in the concentration of nitrogen metabolites, electrolyte imbalance, anemia, and so on. Currently, in renal function, experimental and clinical data have been obtained showing that one of the important mechanisms of pathogenesis is associated with disorders of the blood coagulation (hemostasis) system in the kidneys, impaired microcirculatory flow of other organs [6, 8].

Hemostasis is a biological system is a sequence of strictly regulated processes that keeps the blood in a liquid aggregate state and leads to the rapid formation of a thrombus at the site of injury of the vascular wall [11, 13]. Changes in hemostasis in CKD lead to microcirculation disorders in the capillaries of the ball, leading to disruption of microcirculation, so these processes eventually lead to the collapse of the balls, that is to say, sclerosis.

Currently, various antiaggregant drugs are used in the treatment of CKD in the world community. Of these, dipyridamole is widely used in nephrological patients, has a high positive effect and is included in the standard of treatment. At the same time, the drug Alltrombosepin, derived from local raw materials and passed a number of laboratory and clinical tests, produced in our country by REMEDY GROUP, is widely used in cardiology as an antiplatelet therapy. One of the main points of our study is to improve the state of hemostasis and blood rheology in patients with a relatively early stage of CKD, as well as to reduce the aggregation of shaped elements. Therefore, blood rheology-enhancing and antiplatelet agents are important in the treatment of CKD. Therefore, we found it necessary to study the effect of dipyridamole and allthrombocepin drugs containing antiaggregant agents on the process of CKD and to evaluate their effectiveness on renal function.

The purpose of the study.

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A comparative study and evaluation of the efficacy of antiplatelet therapy in patients with stage II and III chronic kidney disease on the functional status of the kidneys with dipyridamole and allthrombosepin.

The material and methods of the study.

For the study, 115 CKD patients (creatinine CFT 30-89 ml / min / m2) were treated in the nephrology department of the multidisciplinary clinic of the Tashkent Medical Academy, which developed as a result of nephropathy of various genesis. The diagnostic and CKD stages were formed on the recommendation of the U.S. National Kidney Foundation (NKF K / DOQI, 2002). From the etiological point of view, the majority of patients were diagnosed with chronic glomerulonephritis 89, 5 patients with chronic pyelonephritis. Chronic pyelonephritis nosology also includes secondary pyelonephritis caused by kidney stone disease and polycystic kidney disease. A number of other diseases were also included (5 chronic tubulointerstitial nephritis, 9 systemic diseases, 2 renal amyloidosis, and 4 hypertensive patients with CKD). However, the following groups of diseases were not included in the study: CKDs formed against the background of gastrointestinal ulcers, SBKs formed due to nephropathy caused by diabetes and other endocrine genesis, renal tumors and nephropathy due to hematological diseases. The age of the patients ranged from 19 to 60 years, with a mean age of 43.0 ± 1.65 for group 1 patients and 44.3 ± 2.4 for group 2 patients. Of these, 60 are men and 55 are women. The duration of the disease ranged from 5 to 10 years, with an average of 7.8 ± 2.3 years. All patients were randomly divided into groups 1 and 2: dipyridamole 150 mg / day in addition to conventional treatment as recommended by international treatment standards for 55 patients in group 1, and alltrombosepin 200 mg in addition to conventional treatment as recommended by international treatment standards for 60 patients in group 2. / day (1 piece of the drug in an amount of 100 mg 1 capsule 2 times a day for 3 months). Prior to treatment in both of our study groups, renal functional status was determined on days 10, 30, and 90 of treatment, and blood filtration rate (BFR) of serum creatinine was modified by the 2011 CKD-EPI (2009) formula (http) : //nefrosovet.ru/ with the help of an on-line counter). The results were statistically analyzed.

Results and their discussion.

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In group 1 patients receiving dipyridamole, blood levels of urea, creatinine, and BFR were determined on the first day, 10 days, 30 days, and 90 days prior to treatment with BFR, and the dynamics of changes were studied. The biochemical parameters of patients receiving dipyridamole are given in Table1.

Results of laboratory tests of group 1

Parameters	Control group (n = 20)	Group (1curantil) (n=50)			
		Before treatment	10 days	30 days	90 days
Urea mmol / l	6,8±0,13	11,1±0,47***	10.0±0.36***	9.7±0.27**	9.0±1.55**
Creatinine mkmol / l	71,6±1,62	178.6±12.41***	165.3±8.3***	158.8±8.19***	154.6±7.05***
KFT ml / min	103,1±4,99	43.8±2.42***	45.2±2.54***	46.1±1.55***	47.2±2.03***

Note: * - differences are significant relative to the control group (* - P <0.05, ** - P <0.01, *** - R <0.001)

When the amount of urea in the blood was checked on the first day of treatment in this group of patients, its average level was 11.1 ± 0.47 mmol / l, while this figure was reduced to 10.0 ± 0.36 in 10 days of treatment. With continuation of treatment, a decrease in the amount of urea in the blood was observed to be 9.7 ± 0.27 (R <0.001) at 30 days and 9.0 ± 1.55 (P <0.01) mmol / liter at 90 days. During the 90 days compared to the first day of treatment, a 20.7% decrease in urea content was observed. A significant decrease in urea content was observed in group 1 as a result of 90 days of treatment.

In this group of patients, the level of creatinine in the blood on the first day of treatment was 178.6 ± 12.41 μmol / l. while a decrease of 154.6 ± 7.05 (R <0.001) μmol / liter was observed. During the 3-month course of treatment, the level of creatinine in

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the blood of patients decreased by 5.1% in 10 days, 11.07% in 30 days and 14.2% in 90 days compared to the first day.

BFR is also moving in a positive direction. Prior to treatment, patients had an average BFR of 43.8 ± 2.42 ml / min. This value was 45.2 ± 2.54 (R <0.001) at 10 days of treatment, 46.1 ± 1.55 (R <0.001) at 30 days, the dynamics of BFR increase was observed up to 90 days of treatment, and 47.2 ± 2.03 ml / min (R <0.001) at 90 days of treatment. did. In patients in our first group, a significant improvement in the indicators determining the functional status of the kidneys was observed during treatment with dipyridamole as a complex therapy and antiaggregant.

In our group 2 patients receiving alltrombosepin as an antiplatelet therapy, the dynamics of indicators in the assessment of renal functional status were observed at the beginning of treatment, as at our first group, on days 10, 30 and 90. The dynamics of biochemical parameters in our patients who were prescribed the drug alltrombosepin are given in Table 2.

Table 2

Results of laboratory tests of group 2 patients

Parameters	**Control group (n = 20)**	**Group 2 (curantil) (n=55)**			
		Before treatment	**10 days**	**30 days**	**90 days**
Urea mmol / l	6,8±0,13	11.3±0.45***	10.1±0.38***	9.6±0.28***	9.0±1.52***
Creatinine mkmol / l	71,6±1,62	177.5±11.87***	166.6±8.1***	158.6±7.88***	153.9±7.09***
BFR ml / min	103,1±4,99	44.1±2.32***	46.0±2.49***	47.1±1.51***	47.8±2.08***

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Note: * - differences are significant relative to the control group (* - P <0.05, ** - P <0.01, *** - R <0.001)

In the patients in our study group, when the blood urea level was checked on the first day of treatment, the mean level was 11.3 ± 0.45 mmol / l. With continued treatment, a decrease in blood urea was observed to be 9.6 ± 0.28 (R <0.001) at 30 days and 9.0 ± 1.52 (P <0.01) mmol / liter at 90 days. A significant decrease in urea content was observed at 90 days compared to the first day of treatment.

In this group of patients, the level of creatinine in the blood on the first day of treatment was 177.5 ± 11.87 μmol / l. while a decrease of 153.9 ± 7.09 (R <0.001) μmol / l was observed. During a 3-month course of treatment, patients had a significant decrease in creatinine in their blood compared to the first day and an improvement in renal function.

BFR is also moving in a positive direction. Prior to treatment, patients had an average BFR of 44.1 ± 2.32 ml / min. This value was 46.0 ± 2.49 (R <0.001) at 10 days of treatment, 47.1 ± 1.51 (R <0.001) at 30 days, the dynamics of CFT increase was observed up to 90 days of treatment, and 47.8 ± 2.08 ml / min (R <0.001) at 90 days of treatment. did. In group 2 patients, the indicators determining the functional status of the kidneys were reliably improved during treatment with the drug alltrombosepin as a complex therapy and antiaggregant.

We will make a comparative study of these changes on the basis of both groups above. In both groups, the results of 10, 30, 90 days of treatment of urinary, creatinine and glomerular filtration rate in the blood, indicating the functional status of the kidneys in the treatment of therapeutic procedures, were obtained and compared. The dynamics of the amount of urea in the blood of patients in our two groups was studied comparatively, and the results are shown in Figure 2.

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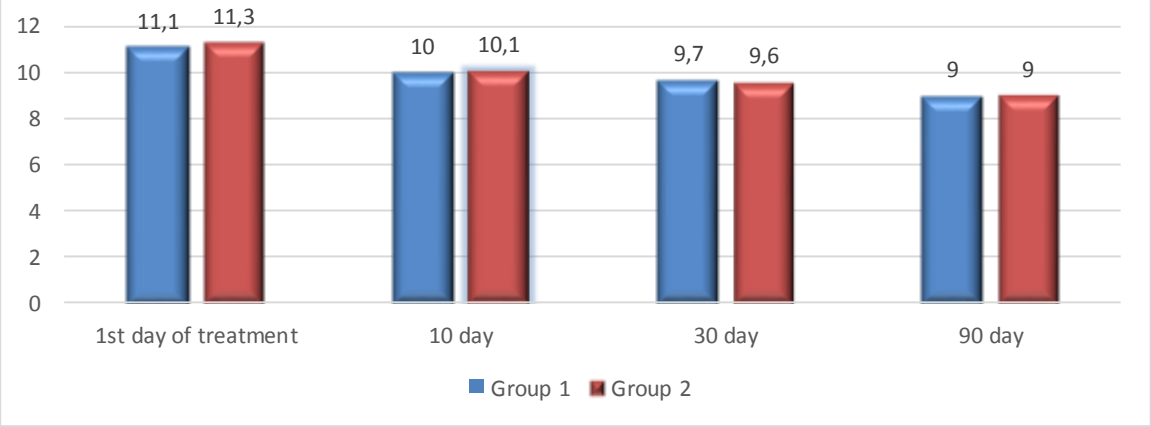

Figure 1. Dynamics of change in urea content.

Looking at the diagram, a comparative analysis of changes in patients in our study group showed a relatively good decrease in blood urea in the first 10 days in group 1 who received curantil, and a relatively small decrease in urea in group 2 who received allthrombosepin. However, after 30 and 90 days of treatment, the efficacy of allthrombosepin proved to be no different from that of dipyridamole. It should also be noted that the positive effect on the functional state of the kidneys is better when we use the drug alltrombosepin as an antiaggregant treatment for a long time in patients with stage CKD II-III.

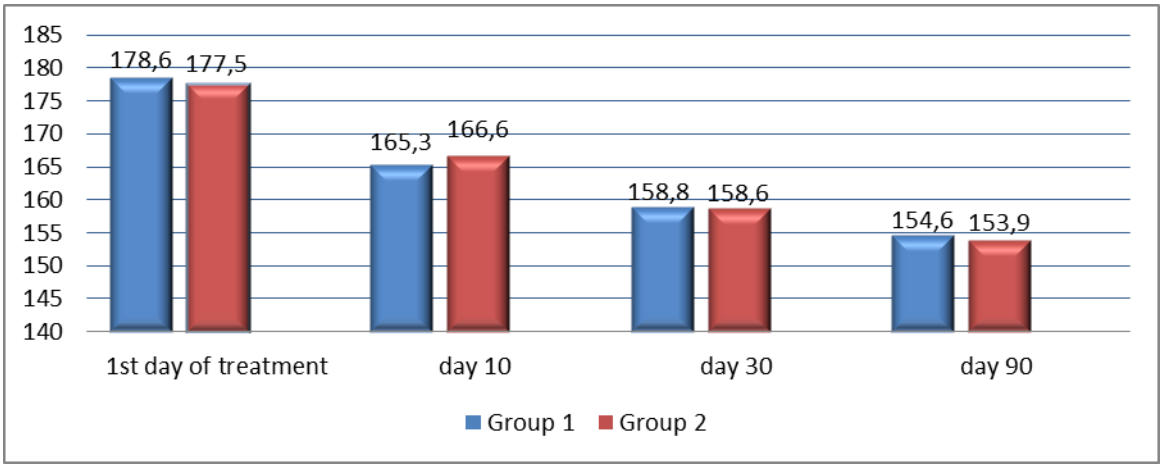

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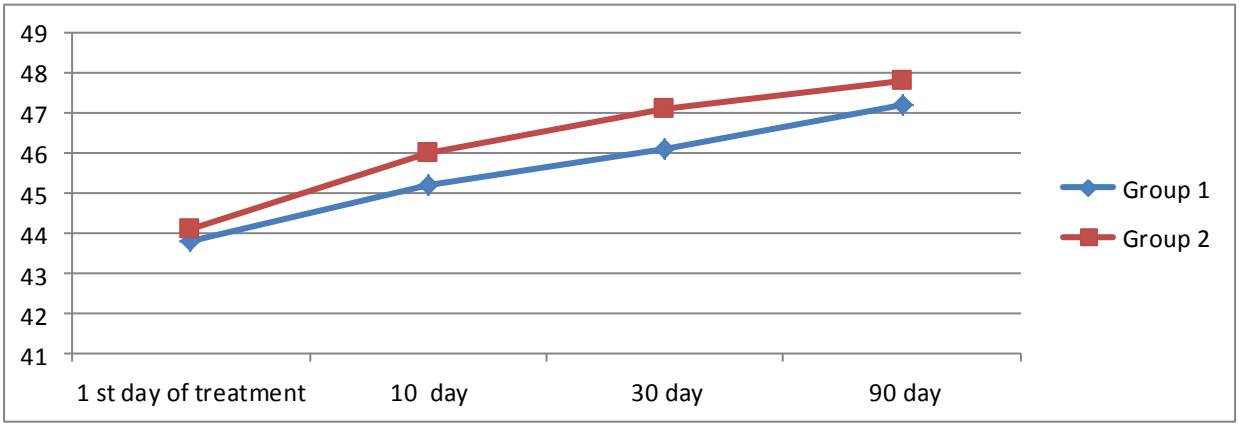
Figure 2. Dynamics of changes in creatinine levels

This is reflected in other indicators that determine kidney function. This is also evident in Figure 3 above, which shows the dynamics of creatinine.

Figure 3. Dynamics of ball filtration rate



Patients in both of our study groups showed a positive improvement in BFR. Especially after 90 days of treatment, BFR showed a positive shift. We also observed that in patients in group 2 who received allthrombosepin, by 90 days of treatment, the results improved no less than those in the first group. It is clear that the long-term administration of the antiaggregant drug Alltrombosepin to patients leads to an improvement in the functional state of the kidneys. It should be noted that dipyridamole, which is currently widely used in CKD as an antiplatelet drug, does not lag behind the domestic raw material allthrombosepin.

Conclusions:

1. Attention should be paid to the state of hemostasis in patients with stage II-III CKD.
2. The efficacy of dipyridamole is faster than that of alltrombosepin antiaggregant.
3. Long-term use of alltrombosepin antiaggregant drug in patients during treatment leads to improvement of functional state of the kidneys.
4. In the treatment of patients with stage II-III CKD Alltrombosepin should be recommended at a dose of 200 mg / day.
5. The use of the drug Alltrombosepin improves renal function in patients and slows the progression of CKD.

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