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CHARACTERISTICS OF INFLUENCE OF CLIMACTERIC SYNDROME ON ILLNESS COURSE IN PATIENTS WITH CHRONIC KIDNEY DISEASE 5th THE STAGE

S. N. Isirgapova [*1], M. A. Sabirov [2], N. N. Sultonov [2], M. KH. Tashpulatova [1] and O. V. Skosireva [1]

Tashkent State Dental Institute [1], St. Makhtumkuli 103, Tashkent, Uzbekistan.
Republic Specialized Scientific-practical Medical Center of Nephrology and Kidney Transplantation [2], Tashkent, Uzbekistan.

Keywords:

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Correspondence to Author:
S. N. Isirgapova

Assistant Professor,
Tashkent State Dental Institute,
St. Makhtumkuli 103, Tashkent,
Uzbekistan.

E-mail: sarvi_-89@mail.ru

ABSTRACT: Chronic kidney disease (CKD) is urgent problem, because its social and economic problem of society and medicine among the population in the world.About 850 million of the world's population suffer from various kidney diseases. Patients at the stage of CKD 5th stages may experience changes such as cardiovascular complications, uremic intoxication, severe anemia, phosphorus-calcium and other micronutrient metabolism disorders, protein-energy deficiency, and hypervolemia. As you know, menopause is an age-related physiological state of the body, the period of transition from the reproductive period to menopause, and the age of its onset is on average 50-54 years. During this period, the woman's body is affected by the natural mechanisms of aging and hormonally determined factors of menopause, which is accompanied by an involutional restructuring of the higher parts of the central nervous system, leading to a violation of the cyclisty and intensity of secretion of gonad tropic hormones by the pituitary gland, resulting in insufficient function of the gonads.

INTRODUCTION: Nowadays, a number of systemic manifestations develop in the body with vasomotor symptoms, resistance to stress, urogenital disorders and osteoporosis a decrease in the level of vitamin D, calcium and magnesium. But, if today changes in sex hormones, the level of vitamin D and calcium are well studied, then the state and changes in magnesium concentrations in women from menopause are devoted to only a few works.

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Menopausal hormone therapy (MHT) is essential for the treatment of symptoms associated with estrogen deficiency in postmenopausal women with chronic kidney disease 5th stage.

MATERIALS AND METHODS: For the study, 80 female patients of 5th stage of CKD receiving scheduled hemodialysis at the Republican Specialized Nephrology and Kidney Transplant Scientific and Practical Medical Center in Tashkent were taken. Levels of CKD are determined based on international recommendations. The main nosologies in the development of CKD were chronic glomerulonephritis in 52 patients (65%), and chronic pyelonephritis in 28 patients (15%). Patients received scheduled bicarbonate hemodialysis treatments 3 times a week for an

average of 4 hours. Hemodialysis sessions are performed in the "Dialog" hemodialysis machine manufactured by BBraun (Germany) "Shadono Weigao Blood Purification Products Co.Ltd." was carried out using the dialyzer "Low Flux Series Hallon Fiber Dialyzers" belonging to the company. The average duration of hemodialysis treatment in patients included in our study was 4 hours, and the duration of planned hemodialysis lasted from 3 to 8 years. Female patients with climacteric syndrome aged 45-55 were recruited for the study. A modified Kupperman questionnaire was used to diagnose climacteric syndrome (CS). Based on the questionnaire, the changes in the patients were evaluated with points and the degrees of the disease were determined. Based on these scores, 4 levels of CS are distinguished: climacteric syndrome symptoms load (0-11 points), mild climacteric syndrome (12-34 points), moderate climacteric syndrome with symptoms (35-58 points) and severe climacteric syndrome (59 points and above).

Magnesium, calcium, potassium and phosphorus in the blood serum of the patients involved in the study were determined before and after the study using an atomic absorption spectrophotometry device "A Analyst-400" (Perkin Elme rincon.). Parathyroid hormone, Vitamin D, follicle-stimulating hormone, luteinizing hormone, estradiol were tested by IFA method. Medicinal preparation and planned treatment for dialysis were carried out according to national standards. Conventional treatment according to this standard includes iron, erythropoietin, vitamin D, calcium and B vitamins. Based on the analyzes obtained in addition to this standard treatment, we recommended to patients a magnesium preparation (Tab. Biolektra magnesium fortissimum) and a substitute (Kap. Monopauz essel) phytoestrogen hormonal drug. The effect of replacement therapy on the balance of hormones and electrolytes in the blood was studied and the results were analyzed.

RESULTS: In our control patients, levels of climacteric syndrome were determined using the Kupperman questionnaire. Patients without climacteric syndrome were not included in the control group. The number of patients with mild climacteric syndrome was 35, the number of patients with moderate climacteric syndrome was 23, and the number of patients with severe climacteric syndrome was 12. These patients underwent laboratory and instrumental examinations before recommending replacement therapy and 90 days after recommending replacement therapy, the obtained results were analyzed.

Laboratory biochemical tests were performed in 35 patients with mild climacteric syndrome **Table 1.**

TABLE 1: MILD LEVEL CLIMACTERIC SYNDROME

Name	Control group	The 1st group		
		Before treatment	After treatment	P
Magnesium	0,90±0,05mmol/l	0,4±0,03	1,3±0,32	P<0,01
Calcium	1,82±0,1mmol/l	1,6±0,04	2,01±0,043	P<0,001
Potassium	3,6±0,3 mmol/l	4,9±0,16	4,85±0,11	P>0,05
Parathyroid hormone	12,0±2,13 пг/мл	629,7±56,57	469,0±41,86	P<0,05
Vitamin D	20±15,03 мМЕ/л	10,2±1,33	25,8±1,95	P<0,001
FSG	10,0±1,04МЕ/л	29,9±2,98	25,36±2,634	P>0,05
LG	5,0±0,88МЕ/л	26,4±2,64	21,35±2,149	P>0,05
Estradiol	0,3±0,04нмоль/л	0,1±0,01	0,9±0,06	P<0,001

Explanation: * - differences are significant compared to the control group (* - P<0, 05, ** - P<0, 01, *** - P<0,001).

Analyzing the indicators given in **Table 1**, in patients with a mild degree of climacteric syndrome, compared to the control group, there was a reliable increase in Parathyroid hormone, and a reliable decrease in Estradiol hormone. We can see that these changes have a negative effect on the course of the disease, as hormonal changes are observed in patients in the early stages of climacteric syndrome. As a result of recommending calcium, vitamin D, magnesium and phytoestrogen medicine as replacement therapy in patients of our group 1, in addition to traditional treatment, magnesium was up to 1.3±0.52 mmol/l (P<0.05), calcium content was 2, 01±0.043 mmol/l (P<0.05), vitamin D increased positively by 25.8±1.95 mME/l. In patients of our group 1, with the increase of estradiol hormone in the blood to 0.9±0.06 (P<0.05) nmol/l, the decrease of

parathyroid hormone to 469.0±41.86 pg/ml (P<0.05) was achieved. In the rest of the parameters (potassium, FSH, LH) changes were observed at an unreliable level as a result of treatment in our group. Patients in our group 2, in contrast to our group 1, were not recommended phytoestrogens as adjunctive therapy to conventional treatment. We obtained the following results when laboratory tests were observed in patients of this group **Table 2.**

TABLE 2: MILD CLIMACTERIC SYNDROME

Name	Control group	The 2nd group		P
		Before treatment	After treatment	
Magnesium	0,90±0,05mmol/l	0,33±0,02	1,0±0,49	P<0,001
Calcium	1,82±0,1mmol/l	1,4±0,041	1,62±0,039	P<0,001
Potassium	3,6±0,3 mmol/l	4,7±0,13	4,66±0,12	P>0,05
Parathyroid hormone	12,0±2,13 пг/мл	615,4±51,07	574,0±45,06	P>0,05
Vitamin D	20±15,03 мМЕ/л	11,1±1,02	19,5±1,02	P<0,001
FSG	10,0±1,04 МЕ/л	28,5±1,98	28,02±3,34	P>0,05
LG	5,0±0,88 МЕ/л	25,6±1,84	24,08±2,01	P>0,05
Estradiol	0,3±0,04нмоль/л	0,11±0,02	0,2±0,04	P>0,05

When studying the changes in our **Table 2**, magnesium content in blood increased from 0.33±0.02 mmol/L to 1.0±0.49 mmol/L, Vitamin D from 11.1±1.02 mmol/L to 19.5±1.02 mmol/L /l was observed, estradiol in the blood increased from 0.11±0.02 nmol/l to 0.2±0.04 nmol/l, and the remaining parathyroid hormone, FSG, LG levels decreased during the treatment.

We observed the following differences in the amount of hormones in the blood during treatment in patients in our control groups **Diagram 1.**

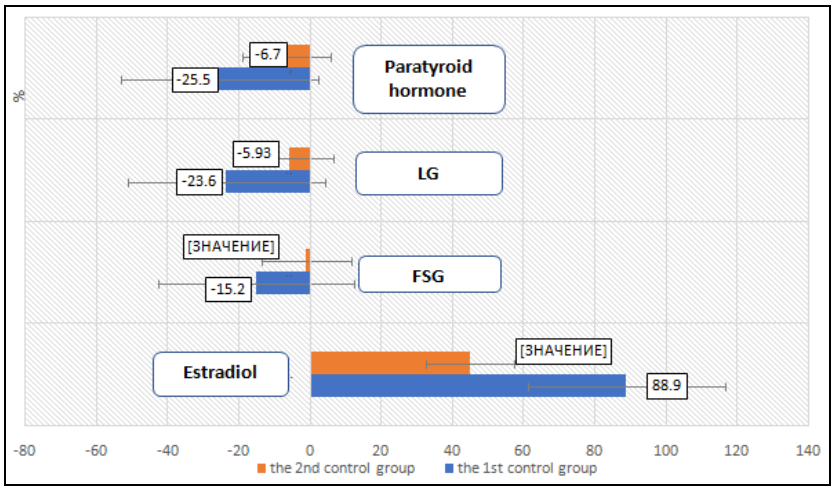
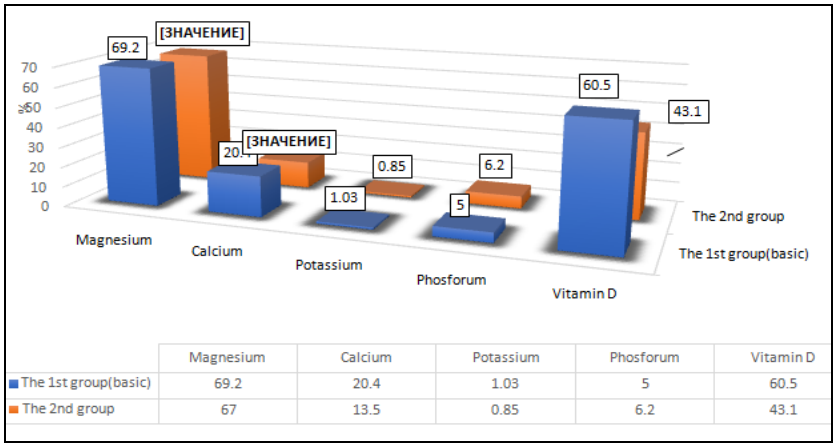


DIAGRAM 1:

If we pay attention to the data given in the table, as a result of 90 days of treatment, in our group 1, i.e., in our patients who were recommended replacement hormone therapy, as a result of treatment, the amount of Estradiol in the blood of patients increased by 88.9%. Estradiol levels in blood were also increased in our group 2, but significantly different compared to group 1. Inversely proportional to the amount of estradiol, compared to the pre-treatment indicator, parathormone in the blood decreased by 25% in group 1, and by 6.7% in group 2, and Luteinizing hormone decreased by 23.6% (R-) in group 1, while this indicator decreased in group 2 Unbelievably low of 5.93%. FSG decreased in both groups. This indicator, in accordance with other hormones, was achieved in our 1st group, better reduction than in our 2nd group. It can be seen that in our group 1, where replacement hormone therapy was recommended, the amount of all controlled hormones was reliably changed in a positive direction. In addition to studying the hormonal changes in the blood, we compared the levels of electrolytes and vitamin D in the blood during treatment in both groups **Diagram 2.**



	Magnesium	Calcium	Potassium	Phosforum	Vitamin D
The 1st group(basic)	69.2	20.4	1.03	5	60.5
The 2nd group	67	13.5	0.85	6.2	43.1

DIAGRAM 2:

During the examination, the quantitative indicators of magnesium, calcium, potassium and phosphorus in the blood during the treatment were observed at an unreliable level, compared to the indicators of the patients in the 1st group compared to the indicators of the patients in the 2nd group. Only the amount of vitamin D in the blood increased by 60.5% after treatment compared to the pretreatment value in the first group, and by 43.1% in the second group. Changes in the amount of vitamin D in both groups showed a more pronounced difference compared to the rest of the parameters. This can be attributed to the relief of climacteric syndrome in our group 1 due to the reliable improvement of estradiol levels during treatment. We obtained the following results for patients in our group 1 when laboratory analyzes of patients with moderate climacteric syndrome were included in the study **Table 3.**

TABLE 3: MODERATE CLIMACTERIC SYNDROME

Name	Control group	The 1st group (n=23)		P
		Before treatment	After treatment	
Magnesium	0,90±0,05mmol/l	0,33±0,024	1,0±0,04***	P<0.001
Calcium	1,82±0,1mmol/l	1,5±0,04	1,8±0,033	P<0.001
Potassium	3,6±0,3 mmol/l	4,5±0,14	4,65±0,15***	P>0.05
Parathyroid hormone	12,0±2,13 пг/мл	833,4±54,7	559,0±45,6***	P<0.001
Vitamin D	20±15,03 мМЕ/л	9,1±0,33	20,3±0,05***	P<0.001
FSG	10,0±1,04 МЕ/л	35,9±2,51	26,06±2,04**	P<0.01
LG	5,0±0,88 МЕ/л	31,4±1,94	23,01±2,09**	P<0.01
Estradiol	0,3±0,04нмоль/л	0,09±0,01	0,65±0,05***	P<0.001

Explanation: * - differences are significant compared to pre-treatment values (* - P<0,05, ** - P<0,01, *** - P<0,001).

In patients with moderate climacteric syndrome, magnesium, calcium, parathyroid hormone, estradiol in the blood increased reliably (R<0.001), and FSG, LG hormone (R<0.01) compared to the pre-treatment level during the treatment, while the amount of potassium in the blood increased during the treatment (R>0.05) was observed to change at an unreliable level. When the laboratory indicators observed above were observed in our group 2, the following results were obtained **Table 4.**

TABLE 4: MODERATE CLIMACTERIC SYNDROME

Name	Control group	The 2nd group		P
		Before treatment	After treatment	
Magnesium	0,90±0,05mmol/l	0,34±0,019	0,65±0,08	P<0.05
Calcium	1,82±0,1mmol/l	1,45±0,044	1,65±0,038	P<0.01
Potassium	3,6±0,3 mmol/l	4,52±0,17	4,62±0,18	P>0.05
Parathyroidhormone	12,0±2,13 пг/мл	830,6±53,5	652,1±48,4	P<0.05
Vitamin D	20±15,03 мМЕ/л	9,3±1,21	12,7±1,01	P<0.05
FSG	10,0±1,04 МЕ/л	34,8±2,51	32,04±2,15	P>0.05
LG	5,0±0,88 МЕ/л	31,4±1,94	26,05±2,09	P>0.05
Estradiol	0,3±0,04нмоль/л	0,09±0,01	0,15±0,05	P>0.05

Explanation: P - differences are significant compared to pre-treatment values.

In patients of this group, during conventional treatment, magnesium in blood only increased from 0.34±0.019 mmol/l to 0.65±0.08 mmol/l (R<0.05), calcium from 1.45±0.044 mmol/l to 1.65±0.038 mmol/l. (R<0.01), vitamin D increased from 9.3±1.21 mME/l to 12.7±1.01 mME/l (R<0.05), and parathyroid hormone increased from 830.6±53.5 pg/ml to 652, A decrease to 1±48.4 pg/ml (R<0.05) was observed.

The amount of potassium, FSG, LG and estradiol in the blood was observed to change at an unreliable (R>0.05) level.

In both groups of patients with moderate climacteric syndrome, we observed the following differences between our groups when the level of hormones in the blood was studied during treatment **Diagram 3.**

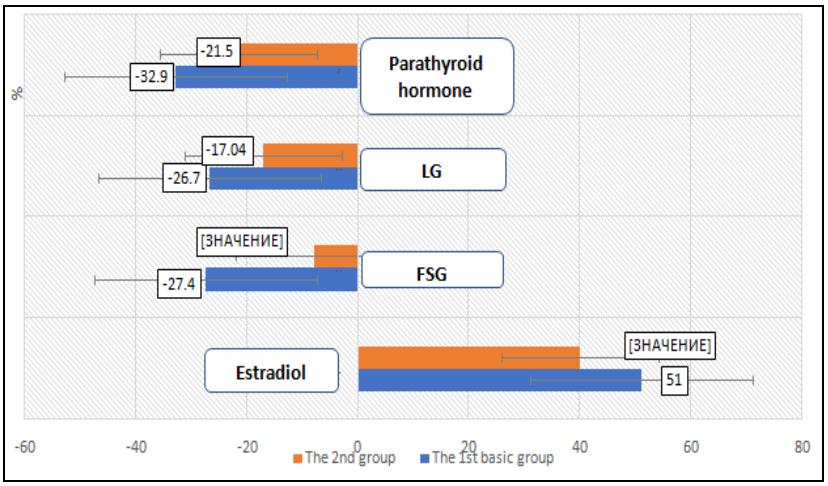


DIAGRAM 3:

On the basis of the data shown in the diagram, it can be concluded that in the patients of our group 1, who were recommended replacement therapy with moderate climacteric syndrome, all hormone parameters changed reliably, while in the patients of our group 2, we can see that only the parathyroid hormone (R<0.05) changed reliably. It was observed that the amounts of the remaining FSG, LG and estradiol hormones changed at an unreliable level (R>0.05). In our group 1 patients with severe climacteric syndrome, replacement treatment with standard treatment was recommended, and the following results were obtained when laboratory parameters were observed before treatment and at 90 days of treatment **Table 5.**

TABLE 5: SEVERE CLIMACTERIC SYNDROME

Name	Control group	The 1st group		P
		Before treatment	After treatment	
Magnesium	0,90±0,05mmol/l	0,23±0,031	0,34±0,04	P<0,05
Calcium	1,82±0,1mmol/l	1,15±0,03	1,44±0,032	P<0,001
Potassium	3,6±0,3 mmol/l	3,61±0,15	4,02±0,13	P<0,05
Parathyroid hormone	12,0±2,13 пг/мл	925,3±49,6	791,3±41,5	P<0,05
Vitamin D	20±15,03 мМЕ/л	8,1±1,01	11,6±0,9	P<0,05
FSG	10,0±1,04 МЕ/л	54,6±3,01	45,01±2,9	P<0,05
LG	5,0±0,88 МЕ/л	40,11±1,88	35,21±2,01	P<0,05
Estradiol	0,3±0,04нмоль/л	0,07±0,01	0,1±0,005	P<0,01

Explanation: P - differences are significant compared to pre-treatment values.

In this group of patients, we can observe a reliable positive change in all parameters compared to pre-treatment parameters. But compared to other indicators, the amount of calcium in the blood is from 1.15±0.03 mmol/l to 1.44±0.032 mmol/l (p<0.001), and Estradiol is from 0.07±0.01 nmol/l to 0.1±0.005 nmol It was observed to increase to /l (p<0.01). It is clear from this that we can have a positive effect on the hormonal and electrolyte imbalance in the blood by recommending replacement therapy even in the severe stages of the climacteric syndrome. But in our group 2

patients who were not recommended for replacement therapy, we could see that during the standard treatment only the blood calcium increased significantly (P<0.05) compared to the pretreatment level. Therefore, we can show that these patients took calcium supplements as part of standard treatment **Table 6.**

TABLE 6: PATIENTS WITH SEVERE CLIMACTERIC SYNDROME

Name	Control group	The 2nd group		P
		Before treatment	After treatment	
Magnesium	0,90±0,05mmol/l	0,23±0,012	0,24±0,03	P>0.05
Calcium	1,82±0,1mmol/l	1,10±0,04	1,21±0,03	P<0,05
Potassium	3,6±0,3 mmol/l	3,5±0,15	3,6±0,11	P>0.05
Parathyroid hormone	12,0±2,13 пг/мл	928,4±58,4	905,8±53,6	P>0.05
Vitamin D	20±15,03 мМЕ/л	8,0±1,01	9,2±0,85	P>0.05
FSG	10,0±1,04 МЕ/л	54,6±3,01	50,01±2,9	P>0.05
LG	5,0±0,88 МЕ/л	40,11±1,88	35,21±2,01	P>0.05
Estradiol	0,3±0,04нмоль/л	0,08±0,009	0,09±0,008	P>0.05

Explanation: P - differences are significant compared to pre-treatment values (* - P>0.05).

Changes in the amount of remaining electrolytes and hormones in the blood were observed at an unreliable level (p>0.05) compared to the pre-treatment index. When we compared the levels of hormones in the blood during treatment in patients with severe climacteric syndrome in our two groups, the indicators in our group 1 differed significantly from the indicators in our group 2 **Diagram 4.**

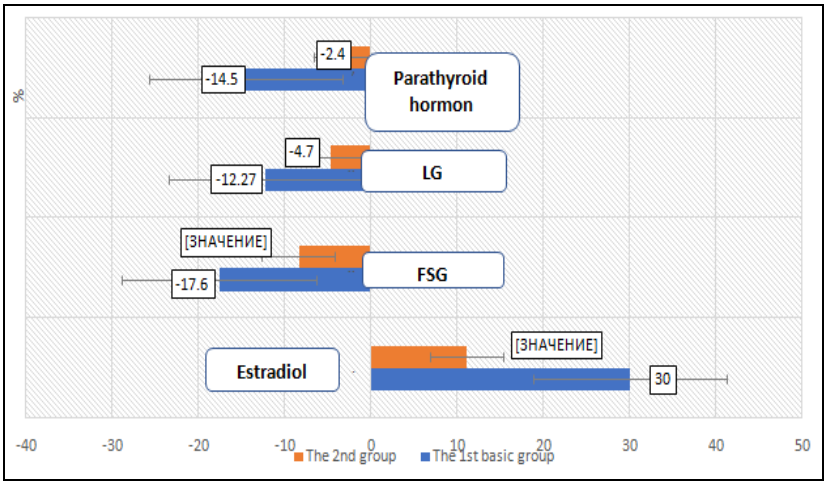


DIAGRAM 4:

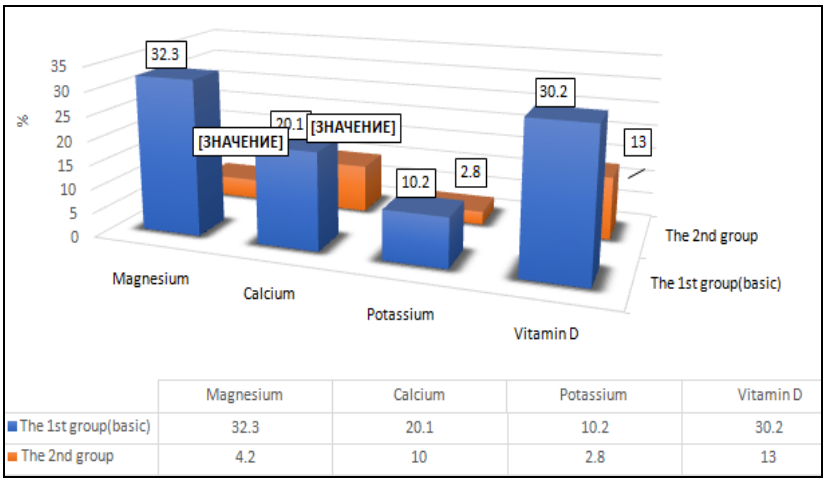


DIAGRAM 5:

Based on the data shown in the diagram, it can be concluded that in our group 1 patients with severe climacteric syndrome, who were recommended replacement therapy, we observed a reliable change in all hormone parameters, but in our group 2 patients, there was an unreliable change in all hormones compared to the pre-treatment indicator. In our group 2, there were reliable differences during treatment compared to the changes in our group 1. Along with the differences in the hormonal changes in the blood, there were also differences in the indicators of electrolytes in the blood **Diagram 5**. Blood electrolytes were significantly different in group 2 compared to group 1 after treatment. In our group, in which replacement therapy was recommended, positive changes were observed in all indicators, and various complications that could be observed in patients were reduced.

CONCLUSION: When examining blood electrolytes and hormones in climacteric patients with 5 stages of chronic kidney disease, there were reliably negative changes from the indicators of healthy people in the control group. We observed that these changes increase with the severity of climacteric syndrome. When these patients were recommended magnesium preparation (Tab. Biolektra) and a replacement (Kap. Monopauz essel) phytoestrogen drug in addition to traditional treatment, it was observed that the disturbances in blood electrolyte and hormone parameters were improved close to normal values in all patients. On the contrary, in our group, where substitute hormonal therapy was not recommended, there were no changes in blood electrolyte and hormone levels compared to the pre-treatment level. From the above results, we can conclude that by recommending magnesium and substitute phytoestrogen drugs to patients with hormonal changes in climacteric age in the early stages of the disease, it is possible to get relief from the disease and prevent the development of complications.

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