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## UDC 616.6

# EFFECTIVENESS OF HEMODIALYSIS IN CHRONIC RENAL FAILURE

***Abstract****: The article presents a study of the effectiveness of hemodialysis in patients with chronic renal insufficiency and also examines the dynamics of the number of patients taking hemodialysis at the Khoja Ahmet Yasaui Clinical Diagnostic Center in the city of Turkestan.*

***Key words****: chronic renal failure, hemodialysis, dynamics*

***Language****: English*

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**BACKGROUND:**

Chronic renal failure is a syndrome caused by an irreversible decrease in renal function due to a significant reduction in the weight of active nephrons, which is manifested by changes in the parameters of homeostasis regulated by the kidneys with concomitant metabolic disorders and pathology of a number of organs and systems. The consequence of damage to the homeostatic functions of the kidneys are azotemia, diselectrolithy, hypervolemia and acidosis. Violations of the endocrine functions of the kidney lead to arterial hypertension, anemia and secondary hyperparathyroidism, and arterial hypertension, generally inherent in most kidney diseases [1].

The number of patients with renal pathology is growing all over the world, which is associated with an increase in the incidence of not only the kidneys, but also with an increase in the number of patients with diabetes mellitus, obesity, population aging, renal vascular injury. The pathology of the kidneys and urinary tract leads to the death of approximately 850,000 people each year, taking the twelfth place among the causes of death and the seventeenth as the cause of disability [2].

Terminal chronic renal failure - the outcome of kidney disease with a chronic progressive course - corresponds to the concept of renal death. Morphological basis of terminal chronic renal failure is nephrosclerosis, functional - the loss of renal functions, leading to disruption of homeostasis and death of the patient. The disease becomes irreversible long before the terminal chronic renal failure, almost from the moment of establishment of chronic renal failure.The annual incidence varies from 50 to 100 cases per 1 million population. The number of patients with terminal chronic renal failure in the world receiving renal replacement therapy has increased more than 4-5 times over the past 20 years. In the US, the prevalence of chronic renal failure from 1974 to 1981 reached 133.1 - 162.4, and in 1996 - already 268 per 1 million of the population [3].

Chronic renal failure is distinguished from other chronic diseases by a decrease in the quality of life, high death rate in the terminal stage and also by economically expensive substitution treatment. The urgency of this problem is proved by the number of patients that increases year after year. Despite the fact that chronic renal insufficiency ranks third among chronic diseases, this pathology has been paid insufficient attention. Only at the beginning of the 21st century, there was an increase in the proportion of chronic renal failure when foreign researchers began to conduct large studies. Along with this, the lack of hemodialysis service attracted the attention of the whole world. [4]. It was found

that the incidence of chronic renal failure is 10%, and among high-risk people it reaches 50% [5].

Hemodialysis is a blood purification procedure performed with the aid of the "artificial kidney" apparatus. This method allows to quickly clear the blood toxins and restore the salt balance. The main task of the kidneys is the filtration of blood and the withdrawal of toxic products with urine. However, with different diseases, the ability of the organ to purify the blood is markedly reduced. To perform purification outside the kidney and hemodialysis is usually used for normalize the water and electrolyte balance [6].

Hemodialysis is considered a relatively new technique, which is used in practice for no more than forty years. Thanks to this procedure, the blood of sick people who have no kidney or poor functioning of this body, is cleaned of toxins. In the presence of indications, unfortunately, patients are shown a lifelong course of hemodialysis. How many live with this method of treatment, interested in all sick people. Hemodialysis is based on the principle of the artificial kidney. In most cases of medical practice, it is thanks to this procedure that patients can live with acute and chronic renal failure [7].

Of course, there is another method to treat this condition - a kidney transplant, but organ transplantation is considered a very expensive procedure, and patients wait a long time for the donor body. If we consider the statistics, the procedure for hemodialysis extends life to man for dozens of years. Despite this, each case is individual and largely depends on the patient's lifestyle, his initial diagnosis and condition. Many patients are afraid of dialysis, explaining this by the fact that this procedure has a high risk of mortality. Of course, this method can cause the formation of a blood clot in the catheter, an incorrect prepared solution or a malfunction in the apparatus, but much more often the cause of death is inactivity in treatment, that is, when a person lingers with hemodialysis and dies of the main problem - kidney failure [8].

Hemodialysis is the most convenient method of removing toxins from the body at the terminal stage of the disease. Hemodialysis can not completely replace kidney function, but it provides a certain degree of diffusion and ultrafiltration in the body. in chronic renal failure, hemodialysis is performed with a glomerular filtration of less than 15 ml / min / 1.73 m2. Foley RN, Collins AJ found in their studies that patients taking hemodialia significantly increased longevity [9]. Yun Li and Yan Jin in their work conducted in 1995 - 2012 investigated the effectiveness of hemodialysis in the glomerular filtration register. the results of this study show that patients with hemodialysis had a persistent increase in glomerular filtration, thus proving the effectiveness of hemodialysis in chronic kidney disease [10].

Domestic scientists A.K. Baygenzhin, S.K. Tuganbekova, O.Zh.Narmanova studied the data of chronic renal failure register in Kazakhstan. According to the results of this study, we can conclude that the proportion of men taking hemodialysis for chronic renal failure exceeds the number of women in our country. 73% of patients receiving hemodialysis were patients aged 21-50 years. Among the most common causes of chronic kidney disease in 60% of cases was chronic glomerulonephritis [11].

Currently, chronic renal failure as well as hemodialysis service remains an urgent problem attracting huge attention of all scientists of the world. On this basis this topic is important not only in the whole world but remains relevant in Kazakhstan, which requires further research in this direction.

**AIM.**

The main purpose of the study was to determine the hemodialysis regimen and hemodialysis efficiency of patients with chronic renal insufficiency in the Khodja Akhmet Yassawi clinical and diagnostic center in Turkestan.

**MATERIALS AND METHODS.**

In the study were studied 119 patients who underwent hemodialysis in the the Khodja Akhmet Yassawi clinical and diagnostic center in Turkestan during 2015-2017. The study was based on statistical analysis of the results of arterial blood pressure and biochemical blood test in 2017.

**RESULTS.**

The total number of patients received hemodialysis in Khodzha Ahmed Yasawi clinical and diagnostic center in Turkestan was 119 in 2015-2017. 29 patients in 2015, 36 patients in 2016, and 54 in 2017 received hemodialysis, and the number of patients receiving hemodialysis in the last 3 years has been increasing.

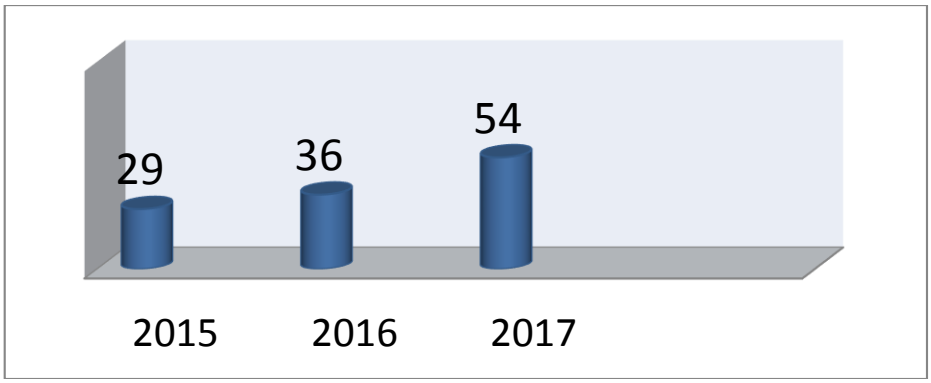


**Figure 1 - The number of patients received hemodialysis in Khodzha Ahmed Yasawi clinical and diagnostic center in Turkestan in 2015-2017.**

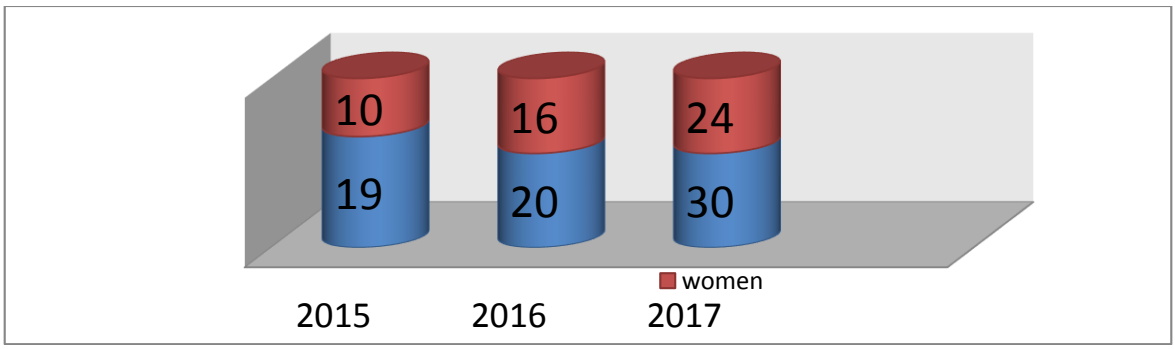


**Figure 2 - Indication of patients received hemodialysis due to gender**

As shown in Figure 2, the number of men with hemodialysis is significantly higher than women and the number of men and women are increasing year by year.

**Table 1**

**Indications of arterial blood pressure, biochemical blood test before, after hemodialysis in patients received hemodialysis in 2017.**

| Indicators | | N=54 |
|---|---|---|
| **Mean blood pressure** | *before hemodialysis* | 150/100 mmHg. |
| | *after hemodialysis* | 140/90 mmHg. |
| **Average creatinine** | *before hemodialysis* | 700-950 mkmol / l |
| | *after hemodialysis* | 220-350 mkmol / l |
| **Average urea** | *before hemodialysis* | 29,0-33,0 mmol / l |
| | *after hemodialysis* | 8,0-12,0 mmol / l |

Table 1 shows the results of before, after hemodialysis indicators of blood pressure, biochemical blood test in patients received hemodialysis in 2017. The mean parameters blood pressure, creatinine and urea were compared before and after hemodialysis. The result of the study on tested parameters showed that hemodialysis treatment performed was effective.

**CONCLUSION.**

1. The number of patients receiving hemodialysis in Turkestan increases.
2. Among patients receiving hemodialysis a dominant group are men than women.
3. The mean value of arterial blood pressure, mean creatinine, and urea indicating low rates after hemodialysis compared before hemodialysis, that shows effectiveness in patients with chronic renal insufficiency.

**References:**

1. Nikolaev A.U., Milovanov U.S. (1999) Lechenie pochechnoy nedostatochnosti — M., Meditsina. — 1999.
2. Schiepati A., Remmuzi G. (2005) Renal disease as a public health problem. Epidemiology, social and economic implications.// Kidney Int. — 2005. — Vol. 68. — P.7-10.
3. Coresh V., Astor B.C., Green T., et al. (2003) Prevalence of chronic kidney disease and decreased kidney function in the adult US population: Third National Health and Nutrition Examination Survey // Am. J. Kidney Dis. — 2003.-Vol.41(1). — P.1-12.
4. (2012) Xronicheskaya bolezn pochek I nefroprotektivnaya terapiya. Metodicheskoe rukovodstvo dlya vrachey. Pod redakchiey doktora medicinskix nauk, professor E.M.Shilova, g.Moskva , 2012 g. str 4-5
5. Lancet. (2013) Evolving importance of kidney disease: from subspecialty to global health burden.Eckardt KU, Coresh J, Devuyst O, Johnson RJ, Köttgen A, Levey AS, Levin A.
6. Maduell F, C del Pozo, Garsia H, et al. (1999) Change from convectional to on line haemodiafiltration. Nephrol Dial Transplant 1999; 14; 1202-1207
7. Takenaka T, Itaya Y, et al. (2001) Fitness of biocompatible high-flux hemodiafiltration for dialusis-related amyloidosis. Blood Purif 2001; 19; 10-14
8. (1992) American National Standard for Hemodialysis Systems, Arlington VA, AAMI, 1992 (RD-5-1992)
9. J Am SocNephrol. (2007) End-stage renal disease in the United States: an update from the United States Renal Data System.Foley RN, Collins AJ.
10. J Medicine (2017) Explaining trends and variation in timingof dialysis initiation in the United StatesYun Li, PhDYan Jin, PhD, AlissaKapke, MS, Jeffrey Pearson, MS.
11. Baygenjin A.K., Tuganbekova O.J., Narmanova R.Z., Magzumova O. (2017) O register bolnix s zabolevaniyami pochek v Respublike Kazahstan. Nacionalniy nauchniy medicinskiy centr MZ RK, g.Astana, Kazahstan. Nefrologiya i dializ T.7, №3, p.276.