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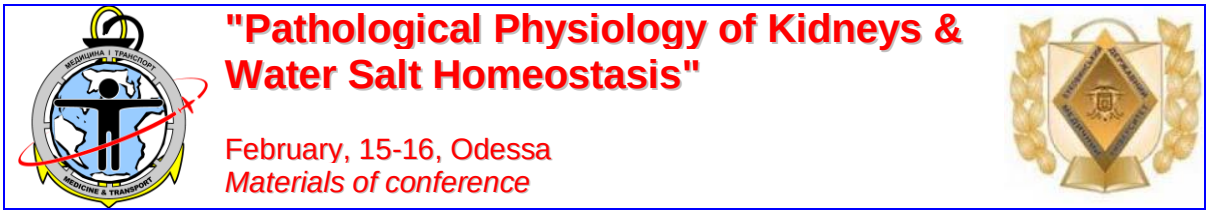

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EFFECT OF THERAPEUTIC WATER OF SKHIDNITSA REGION ON REHABILITATION OF PATIENTS AFTER NEPHRECTOMY FOR KIDNEY CANCER

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Abstract

Among all oncourgical pathologies, in its prevalence, kidney cancer (KC) ranks third after prostate cancer and bladder cancer, and 10th among all malignant neoplasms [1; 3]. KC combines variants of malignant neoplastic transformation of renal tissue in the pathomorphological plan. In adults, kidney-cellular kidney cancer is observed in 80-85% of all primary malignant tumors of the kidney. In Ukraine annually, about 4 thousand new cases of KC are registered [14]. Nearly 60% of new cases are accidentally detected during preventive examinations. [2; 3]. The main method of treatment for KC is to carry out surgical

intervention, and the presence of single metastases is often not a contraindication to the operation.

Chronic kidney disease (CKD) - occurs due to kidney damage. The most common occurrence of CKD leads to high blood pressure, diabetes mellitus, infectious and inflammatory processes of the kidneys, disorders of urine outflow and tumor lesion of the kidneys. One of the earliest signs of CKD development is the appearance of so-called uric syndrome [14; 15].

Urinary tract syndrome (UTS) in the broad sense, includes all qualitative and quantitative urine changes, and in the narrower - changes in urine sediment: proteinuria, hematuria, leukocyturia. Often, there are some combination of these urinary components (proteinuria with leukocytes, proteinuria with hematuria, etc.). Less commonly, "isolated" proteinuria or hematuria is observed, when other signs are absent or they are expressed insignificantly.

As already mentioned, urinary syndrome is considered one of the most important signs of disorders in the urinary system, based on laboratory evidence (statistically significant) and a clear deviation from the norm of urine [5; 16].

In the event that this syndrome is the only manifestation of kidney disease, then an isolated kidney syndrome is diagnosed.

Isolated kidney syndrome may occur in primary or secondary glomerulonephritis, as well as in other kidney diseases.

However, in order to prevent the development and slow down of the progression of the existing CKD, there is an increased need for adequate rehabilitation therapy in the postoperative period [6; 8; 11; 13].

Consequently, as mentioned above, the issue of the influence of the use of mineral waters of the Skhidnitsky region in the metaphysics of development and progression of chronic renal disease in renal cancer patients undergoing radical nephrectomy remains open today and has not been fully studied [4; 7; 9; 10].

Key words: radical nephrectomy, kidney cancer, chronic kidney disease, urinary tract syndrome.

Resume: Conducting radical nephrectomy leads to the progression of existing urinary syndrome and a decrease in GFR below 90 ml / sec already in the first 6 months after surgical treatment. The use of rehabilitation spa treatment does not affect the progression of urinary syndrome.

The aim of the study: to evaluate the effect of treatment water of the Skhidnytsya region on the rehabilitation of patients after nephrectomy with regard to renal cell carcinoma of the renal complicated CKD.

Material and methods

The study was conducted from 2007 to 2014. 116 histories of diseases of patients with renal cell carcinoma with concomitant chronic CKD were worked out. With therapeutic purpose, all patients had a radical nephrectomy. All patients were randomized to two study groups.

Table 1

Distribution of patients by groups

I group (n – 67)	**m. (n - 31)**	**UTS* > 3 month.**	**(n - 7)**
		GFR< 90 ml/sec.**	**(n – 24)**
	f. (n – 36)	**UTS > 3 month.**	**(n – 5)**
		GFR < 90 ml/sec.	**(n – 31)**
II group (n – 49)	**m. (n – 21)**	**UTS > 3 month.**	**(n – 4)**
		GFR < 90 ml/sec.	**(n – 17)**
	f. (n – 28)	**UTS > 3 month.**	**(n – 9)**
		GFR < 90 ml/sec.	**(n – 19)**

***** urinary tract syndrome over 3 months

****** glomerular filtration rate

The first group consisted of 67 patients (31 men and 36 women), in which the group was dominated by patients who had been diagnosed with urinary symptoms that lasted more than 3 months. Only in 12 patients the SCF was <90 ml / sec. Patients in the first group did not undergo sanatorium treatment in the postoperative period. The second group consisted of 49 patients (21 men and 28 women). As in the case of patients in the first group, most patients in the second group experienced urinary tract syndrome for more than three months. SCF <90 ml / s was observed only in 13 patients in the second group.

All patients in the second group performed spa treatment in conditions of the balneological resort Skhidnytsya. All patients who passed spa treatment apart from carrying out a complex of physiotherapeutic procedures, medical physical education, the appointment of dietary nutrition, the use of therapeutic water "Naftusya" was used. As a result of the research carried out in 1995 by the Ukrainian Research Institute of Medical Rehabilitation

and Resortology, a comprehensive study of water sources No. 25 and 26, recommendations and schemes for the use of the above-mentioned waters in chronic pyelonephritis, cystitis and post-renal operations were developed.

It is in this scheme that patients received medicinal mineral water in a complex rehabilitation therapy. Consequently, patients were referred to spa treatment for 7 to 10 days after minor invasive surgical interventions, and at 12 to 15 days after open operations in the kidneys. On the basis of the conducted research, developed a methodology, which recommended the use of 10 to 15 milliliters of mineral water per kilogram of weight.

To take water, it is recommended to cold or warm up to 18 - 20 degrees, an hour before meals, 5 times a day.

The observation period was 2 years, the frequency of visits to the resort - every six months, in general 4 courses spa treatment, duration of each course - 17,9 ± 1,3 days. In dynamics, creatinine and glomerular filtration rate GFR was evaluated in both groups, every 6 months, in total 4 control visits.

The GFR was determined by the Cokroft-Holta formula and measured in milliliters per 1.73 m^2 area (ml / min / 1.73 m^2).

Research results

At the beginning of the study, immediately after the operative treatment, there were no statistical differences between the study groups in the above-mentioned evaluation criteria. Medians creatinine level in group 1 and group 2 were 92.6 ± 1.7 mmol / l, and 90.3 ± 2.1 mmol / l, respectively, p> 0.05. The average glomerular filtration rate in group 1 and group 2 was 72.3 ± 5.8 ml / min / 1.73 m^2, and 74.5 ± 4.7 ml / min / 1.73 m^2 respectively, p> 0, 05

The dynamics of changes in the studied parameters in both groups of patients every 6 months of observation is shown in tables 2 and 3.

Table 2

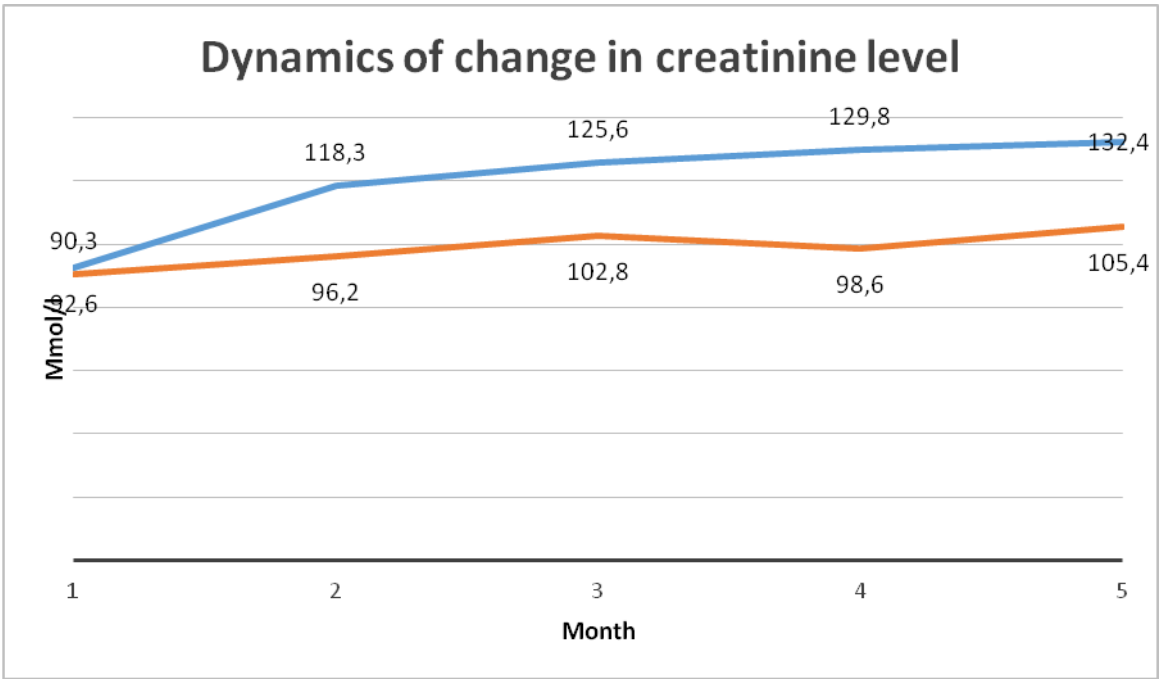
Dynamics of changes in serum creatinine level

month	Creatinine level, mmol/l		p
	Group I	Group II (spa treament)	
0	92,6±1,7	90,3±2,1	>0,05
6	118,3±2,3	96,2±0,9	<0,05
12	125,6±2,9	102,8±1,6	<0,05
18	129,8±3,2	98,6±2,3	<0,05
24	132,4±3,8	105,4±3,1	<0,05

As can be seen from table 2, application in the complex rehabilitation therapy of patients with KC of medicinal mineral waters, allows to slow down the growth of creatinine level. During the 24 months of follow-up, creatinine levels in general increased by 39.8 ± 1.9 mmol / l in the group of patients who did not receive rehabilitation spa treatment and 15.1 ± 2.4 mmol / l in the group of patients undergoing rehabilitation spa treatment.

The obtained results are presented graphically in Fig. 1

Figure 1



The dynamics of change in the velocity of glomerular filtration in both groups of patients is presented in Table 2.

Table 3

Dynamics of changes in GFR

month	GFR, ml / min / 1.73 m^2		p
	Group I	Group II (spa treatment)	
0	72,3±5,8	74,5±4,7	>0,05
6	59,8±4,6	72,6±3,1	<0,05
12	54,3±5,0	70,4±2,9	<0,05
18	49,4±3,2	68,7±3,6	<0,05
24	45,6±4,3	65,3±5,4	<0,05

Analyzing the results presented in table 3, application in the complex rehabilitation therapy of patients with KC of medicinal mineral waters, allows to slow down the GFR. During 24 months of observation, GFR decreased by 26.7 ± 3.4 ml / min / 1.73 m^2 in the group of patients who did not receive rehabilitation spa treatment and 9.2 ± 2.7 in the group of patients receiving rehabilitation spa resort treatment in the postoperative period.

The obtained results are presented graphically in Fig. 2

Figure 2

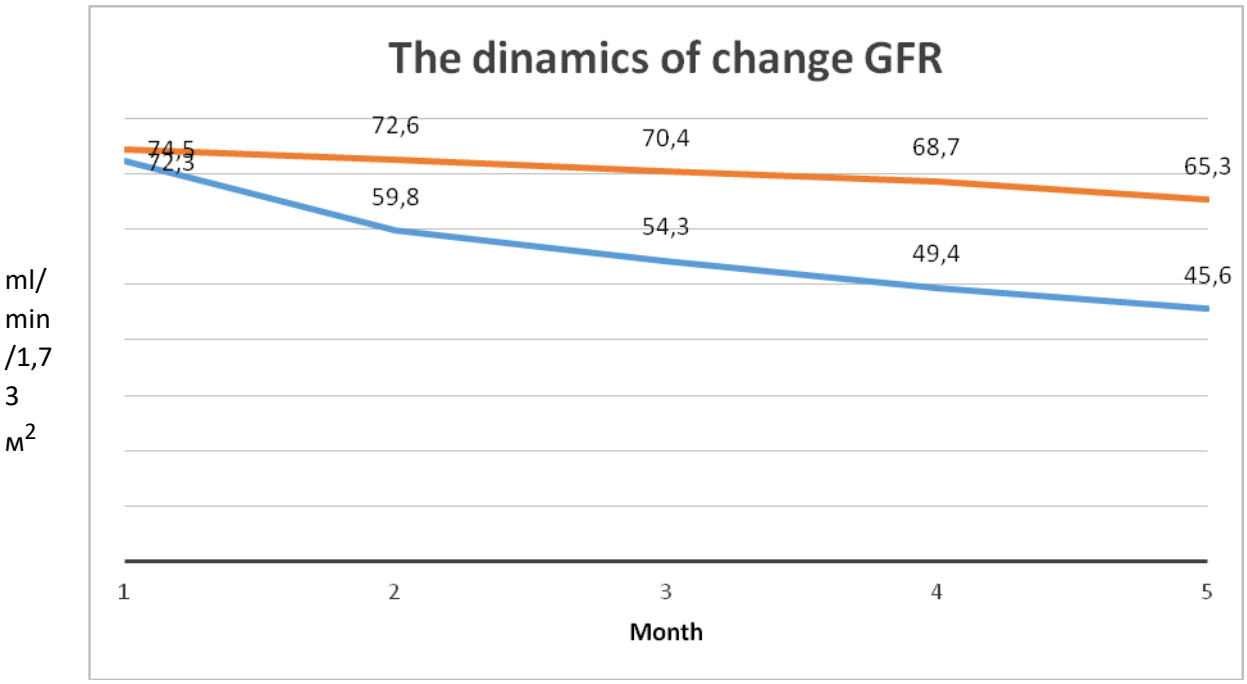


Table 4

Progression of urinary syndrome after radical nephrectomy

month	Group I (n-67)							
	m. (n - 31)		f. (n – 36)		m. (n – 21)		f. (n – 28)	
	UTS > 3 month.	GFR< 90 ml/sec	UTS > 3 month.	GFR< 90 ml/sec	UTS > 3 month.	GFR< 90 ml/sec	UTS > 3 month.	GFR< 90 ml/sec
0	7	24	5	31	4	17	9	19
6	2	29	1	35	2	19	4	24
12	1	30	0	36	0	21	1	27
18	0	31	0	36	0	21	0	28
24	0	31	0	36	0	21	0	28

Analyzing the data presented in table 4, it can be noted that the conduct of radical nephrectomy leads to the progression of existing urinary syndrome and a decrease in GFR below 90 ml /sec, already in the first 6 months after the surgical treatment. The use of rehabilitation spa treatment does not affect the progression of urinary syndrome.

Conclusions:

Progression to creatinine level 24 months after surgery was on average higher than the creatinine level, which was higher at 24.7 ± 1.2 mmol / l in the group of patients who did not receive rehabilitation spa treatment after a surgical treatment for RCC.

The progression of CKD in the GFR index 24 months after surgery was, on average, lower by 17.5 ± 2.4 ml / min / 1.73 m 2 in the group of patients who did not receive rehabilitation spa treatment after a surgical treatment for RCC.

The progression of CKD for 24 months of observation is higher in the group of patients who, after a surgical treatment of RCC, did not undergo a rehabilitation complex treatment for the use of medicinal mineral waters.

Conducting radical nephrectomy leads to the progression of existing urinary syndrome and a decrease in GFR below 90 ml / sec already in the first 6 months after surgical treatment. The use of rehabilitation spa treatment does not affect the progression of urinary syndrome.

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