

## Clinical Course of Nephrotuberculosis in the Elderly Age

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### Summary.

The analysis of archival material was carried out and the case histories of 590 hospitalized elderly patients were studied. It was found that concomitant diseases in the elderly affect the clinical manifestations of nephrotuberculosis. Advanced forms of nephrotuberculosis and chronic renal failure occurred mainly in elderly patients.

### Keywords:

nephrotuberculosis, advanced age, clinical manifestation of the disease

**Introduction.** The XXI century is characterized by a fundamentally new demographic situation - an increase in the world population both in the absolute number and in the proportion of older people, that is, people who have crossed the 60-year mark. Along with the increase in life expectancy, the number of people with various diseases, including tuberculosis, also increases.

A significant increase in the incidence of tuberculosis and mortality is noted mainly among young and middle-aged people, therefore, insufficient attention has been paid to the problems of tuberculosis in old age. However, the number of tuberculosis patients in old age continues to increase, which determines the relevance of studying the course and results of tuberculosis treatment in the elderly [1; 2; 3; 7].

Over the past decade, the age composition of patients with nephrotuberculosis has changed: the proportion of people over 60 years of age increased by 4 times - from 6.1 to 25.5% [4; 5; 6;8;9]. This is due to the increasing life expectancy. The features of the clinical course of nephrotuberculosis in the elderly are insufficiently described in the available literature.

**Purpose.**To study the features of the clinical course of nephrotuberculosis in the elderly

**Materials and research methods.**The analysis of archival material was carried out and the case histories of 3420 patients suffering from nephrotuberculosis who were examined and treated at the clinic of the phthisiology and pulmonology center over the past 10 years were studied. Among hospitalized patients, 590 (17,3 ± 0,6%) were elderly people. The clinical course of the

disease was studied in 153 patients with nephrotuberculosis. Patients with nephrotuberculosis were divided into 2 groups: group 1 consisted of 69 elderly patients (60–74 years old), group 2 - 84 mature patients (20–59 years old).

**Results.** The research results showed that in group 1, common forms of nephrotuberculosis were observed in 45 ( $65.2 \pm 5.7\%$ ) patients, limited forms - in 24 ( $34.8 \pm 5.7\%$ ); in group 2 - in 29 ( $34.5 \pm 5.1\%$ ) and 55 ( $65.5 \pm 5.1\%$ ) patients, respectively ( $P < 0.001$ ). Thus, among the elderly, common forms of nephrotuberculosis were observed 1.9 times more often than among patients of mature age. Polycavernous, fibrous-cavernous forms of nephrotuberculosis and tuberculous pyonephrosis were found only in elderly patients (Table 1).

**Table 1**  
*Comparative characteristics of the structure of nephrotuberculosis in elderly and mature patients (%)*

Clinical forms of nephrotuberculosis	Elderly age n = 69	Mature age n = 84
Infiltrative	-	10 ( $1,2 \pm 1,0$ )
Papillitis	24( $34,8 \pm 5,7$ )	54 ( $64,3 \pm 5,2$ )*
Cavernous	11( $15,9 \pm 3,8$ )	16 ( $19 \pm 4,2$ )
Polycavernous	8( $11,6 \pm 3,6$ )	-
Fibrous-cavernous	6( $8,7 \pm 3,4$ )	-
Tuberculous nephrocirrhosis	8( $11,6 \pm 3,6$ )	1 ( $1,2 \pm 1,0$ )*
Pyonephrosis	1( $1,4 \pm 1$ )	-
Single kidney tuberculosis	11( $15,9 \pm 3,8$ )	12 ( $14,3 \pm 3,8$ )

Assessing the features of the clinical course of nephrotuberculosis in elderly patients, it was found that the symptoms of this disease were often masked by symptoms of concomitant pathology.

**Table 2**  
*The incidence of concomitant diseases in elderly and mature patients with nephrotuberculosis*

No	The nature of the comorbidities	Elderly age n = 69	Mature age n = 84
1.	Chronic pyelonephritis	48 ( $70 \pm 5,4$ )	37( $44 \pm 5,2$ )*
2.	Nephrogenic hypertension	5 ( $7,2 \pm 3,0$ )	0
3.	Nephrolithiasis	11( $15,9 \pm 4,4$ )	0
4.	BPH	48 ( $70 \pm 5,4$ )	17 ( $20,2 \pm 4,3$ )*
5.	Diabetes	9( $13 \pm 4,0$ )	2 ( $2,4 \pm 1,6$ )**
6.	Arterial hypertension	41( $59,4 \pm 5,9$ )	12 ( $14,2 \pm 3,7$ )*
7.	Coronary heart disease	34 ( $49,3 \pm 6,0$ )	8 ( $9,5 \pm 3,1$ )*
8.	Chronic hepatitis	20( $29 \pm 5,3$ )	6 ( $6 \pm 2,5$ )*

Note: BPH is benign prostatic hyperplasia.

\* - significant difference between indicators  $P \leq 0.05$ ;

\*\* - significant difference between indicators  $P \leq 0.01$ ; \*\*\* - significant difference between indicators  $P \leq 0.001$

Concomitant diseases were more often detected in elderly patients with nephrotuberculosis (Table 2). Thus, in elderly patients with nephrotuberculosis

significantly more often than in group 2, chronic pyelonephritis was noted - 1.6 times ( $P < 0.05$ ); benign prostatic hyperplasia - 3.5 times ( $P < 0.001$ ); diabetes mellitus - 5.4 times ( $P < 0.01$ ); arterial hypertension - 4.1 times ( $P < 0.001$ ); ischemic heart disease - 5.2 times ( $P < 0.001$ ); chronic hepatitis - 4.8 times ( $P < 0.001$ ). Nephrogenic arterial hypertension and nephrolithiasis were observed only in patients of group 1 [10; 11].

Analysis of the frequency of occurrence of symptoms of nephrotuberculosis showed that the most frequent complaints in elderly patients are: pain in the lumbar region ( $79.7 \pm 4.8\%$ ), dysuria ( $53.6 \pm 6.0\%$ ) and weakness ( $58.0 \pm 5.9\%$ ).

Comparative analysis showed that elderly patients significantly more often have an increase in body temperature, weakness and weight loss than younger patients with nephrotuberculosis (Table 3).

**Table 3**  
*Comparative analysis of complaints of patients with nephrotuberculosis old and mature age (%).*

Patient complaints and symptoms	1 group (n=69)	2 group (n=84)
Back pain	54(79,7±4,8%)	57(67,9±5,1%)
Elevated temperature	14(20,3±4,8%)	7(8,3±3,0%)*
Weakness	40(58,0±5,9%)	24(28,6±4,9%)*
Weight loss	11(15,9±4,4%)	4(4,8±2,3%)*
Loss of appetite	15(21,7±4,9%)	2(2,4±1,7%)*
Increased blood pressure	24(34,8±5,7%)	8(9,5±3,2%)*
Dysuria	37(53,6±6,0%)	50(59,5±5,4%)
Leukocyturia	43(62,3±5,8%)	56(66,7±5,1%)
Proteinuria	35(50,7±6,0%)	40(47,6±5,4%)
Tuberculous mycobacteriuria	15(21,7±5,0%)	17(20,2±4,4%)

Note: the data are not summarized, as one patient had several complaints.

\* - significant difference between indicators  $P \leq 0.05$ .

According to the laboratory analysis of urine, leukocyturia, proteinuria and tuberculous mycobacteriuria are found with the same frequency in patients with nephrotuberculosis in both groups. And hematuria in the elderly is observed 1.4 times less often than in patients of mature age. In elderly patients with nephrotuberculosis, the functional state of the kidneys was impaired more significantly than in elderly patients (Table 4).

**Table 4**  
*The severity of chronic renal failure (CRF) in elderly and mature patients with nephrotuberculosis*

No	The severity of chronic renal failure	Elderly age n=69	Mature age n=84
1.	CRF-1	1 (1,4±1,0)	0
2.	CRF-2	29 (42±6,0)	20 (23,8±4,6)
3.	CRF-3	7 (10,1±3,6)	0
4.	Total	37 (53,6±6,0)	20(23,8±4,6)*

Note: \* - significant difference between indicators  $P \leq 0.05$ ; \*\* -

Nephrotuberculosis was complicated by chronic renal failure (CRF) in 37.3% of 153 patients examined. In particular, in group 1, chronic renal failure was detected 2.3 times more often than in patients of group 2 ( $P < 0.05$ ). Moreover, chronic renal failure of 1 and 3 stages was found only in patients of group 1.

**Conclusion.** Thus, with an increase in the life expectancy of the population, there is an increase in the number of elderly people among patients with nephrotuberculosis. Over the past 10 years, according to our clinic, the proportion of elderly patients among those hospitalized for nephrotuberculosis has increased by 1.5 times.

Under the conditions of modern pathomorphosis of tuberculosis, nephrotuberculosis in the elderly occurs with back pain, dysuria, weakness, fever, leukocyturia, proteinuria, hematuria and tuberculous mycobacteriuria. In elderly patients with nephrotuberculosis, concomitant diseases are more common than in mature patients. In half of elderly patients, nephrotuberculosis progresses and is complicated by chronic renal failure. Therefore, in the group of elderly patients, it is necessary to carry out clinical examination in order to early detection of tuberculosis and prevention of complicated forms of nephrotuberculosis.

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