

CLINICORADIOLOGIC CHARACTERISTICS OF PATIENTS WITH RENAL TUBERCULOSIS

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ABSTRACT — In recent years there has been an increase in the incidence of extrapulmonary tuberculosis, often occurring under clinical simulation of various non-specific diseases. Among extrapulmonary forms urogenital tuberculosis predominates. In addition to social significance, the medical and social problem of nephrotuberculosis and tuberculosis of the genital organs is caused by the late diagnosis of these conditions, when conservative treatment becomes ineffective, thus causing disability and social disadaptation in working age patients. This article aims to increase the alertness of general practitioners to early detection of tuberculosis.

KEYWORDS — tuberculosis of the kidneys, urogenital sphere, disability, diagnosis.

RELEVANCE

In the structure of extrapulmonary forms of tuberculosis, tuberculosis of the genitourinary system occupies a leading position; its share in different countries is 30–40% [6]. Abroad in patients who have ever undergone pulmonary tuberculosis, renal tuberculosis develops in 8–10% of cases [5]. In the Russian Federation, the number of patients with extrapulmonary forms of tuberculosis varies and does not tend to stabilize; on the contrary, there is an increase in the number of newly diagnosed patients with nephrotuberculosis. The discrepancy between the dynamics of the incidence rate of respiratory tuberculosis and extrapulmonary localization is due to the lack of detection and diagnosis of extrapulmonary tuberculosis, especially in the early stages in the absence of manifestation of the pulmonary process.

According to the literature, genitourinary tuberculosis manifests, averagely, in 5 years after the primary infection in 75% of cases, and in 25% of cases this period lasts 15 years or more [7].

One of the causes of torpid, sometimes prolonged course of tuberculosis of urogenital organs, is not always justified use of fluoroquinolones having tuberculostatic effect, which leads to the formation of atypical forms of *Mycobacterium tuberculosis* with weakened virulence and altered morphological properties. In such situations, extrapulmonary tuberculosis often oc-



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curs under clinical simulation of other diseases and is diagnosed at the last stage of tubercular process, when conservative treatment has little effect. It should be noted that about a quarter of patients have multidrug-resistant strains of *Mycobacterium tuberculosis*, which significantly complicate medical treatment, worsens the prognosis of the disease and causes a high percentage of organ-resecting operations leading to disability of patients.

Therefore, it is necessary to introduce practical health care strategies to improve clinical and diagnostic measures for early detection of extrapulmonary tuberculosis and its timely and effective treatment.

Aim

To determine the prevalence, clinical peculiarities of genitourinary tuberculosis and to evaluate its interaction with the pulmonary localization of a specific process.

MATERIALS AND METHODS OF STUDY

The research was approved by the ethical committee of Astrakhan State Medical University. Protocol No 2 from March 18, 2014. In our work with patients we followed the ethical principles laid down by the Helsinki Declaration of the World Medical Association (1964, 2000). Voluntary informed consent of all patients for participation in the research was obtained.

The study involved 26 patients with tuberculosis of the urinary system, undergoing hospital treatment in Astrakhan Regional Clinical Antituberculosis Dispensary in 2016: 18 males (69,2%), 8 females (30,8%). The age of the patients ranged from 25 to 46 years. There were 12 residents of Astrakhan (46,2%), 14 residents of the Astrakhan Region (53,8%); 17 newly diagnosed patients (65,4%), 9 patients with recurrence (34,6%). Non-employed persons amounted to 74%. Contact with a person infected with tuberculosis was traced in 11 (42,3%) patients. There were 4 (15,4%) patients in penitentiary institutions, 2 (7,7%) patients from the focus of death, 5 (19,2%) patients from family contact. Out of 26 patients, 17 (65,4%) started treatment with specific drugs for the first time. The treatment was carried out according to the specified standard modes of anti-tuberculosis chemotherapy, in particular, the draft amendments "Instructions for chemotherapy of TB patients" — Appendix No 6 to the Order of the Ministry of Health of the Russian Federation No 109 from March 21, 2003 "On improvement of anti-tuberculosis measures in the Russian Federation", Order of the Ministry of Health and Social Development No 109 from March 21, 2003

"On improvement of anti-tuberculosis measures in the Russian Federation", "The concept of chemotherapy and etiological (microbiological and molecular biological) diagnosis of tuberculosis in the Russian Federation at the present stage", developed in 2011 in Moscow, Order of the Ministry of Health of the Russian Federation No 951 from December 29, 2014 "On approval of methodological recommendations for improving the diagnosis and treatment of pulmonary tuberculosis."

RESULTS AND DISCUSSION

Extrapulmonary tuberculosis was identified in 16 (61.5%) patients who were seeking medical assistance and had complaints, in 10 (38.5%) patients by means of fluorography. According to clinical forms of urogenital tuberculosis, patients were distributed as follows (Table 1).

Table 1 shows that the tubercular papillitis was diagnosed more often — 19 cases (73,1%) ($r = 0,9$; $p < 0,01$).

The distribution of clinical symptoms in patients with tuberculosis of the urogenital system is shown in Table 2.

The coupling of the urinary system tuberculosis with pulmonary localization of a specific process was revealed in 9 cases (34,6%).

A radiological picture of a specific process in the pulmonary tissue was characterized in the majority of cases by an extensive (lobar, polysegmental) lung tissue involvement — 7 (26,9%) ($r = 0,7$) and by a limited (within 1–2 segments), often unilateral damage — 2 (7,6%) ($r = 0,9$).

The frequency of concomitant pathology in patients is shown in Table 4.

Table 4 shows that socially significant diseases such as alcoholism (17 (65,4%) ($r = 0,5$)), diabetes mellitus and symptomatic hypertension were more often detected in the group of patients with isolated urinary tract infection.

In addition, the attention was paid to the fact of untimely diagnosis of renal tuberculosis due to a prolonged dispensary observation of patients in the general treatment network for nonspecific diseases. Prolonged course of the diseases torpid to conventional management is likely to get the attention of general practitioners to a specific damage of the urinary tract.

Microscopic examination of urine for the presence of *Mycobacterium tuberculosis* (MBT), was positive in 55 patients (82.1%), by the method of inoculation of medium was confirmed in 100% of cases. Drug susceptibility of *Mycobacterium tuberculosis* to antituberculosis drugs is preserved in 44 (65.7%) cases, mono resistance to isoniazid in 1 (1.5%) case, multid-

Table 1. Distribution of patients with the urinary tract tuberculosis according to clinical forms

Clinical form of tuberculosis	Number of patients	
	abs	%
Cavernous renal tuberculosis	7	26,9
Tuberculous papillitis	19	73,1
Total	26	100

Table 3. The incidence of the urinary tract tuberculosis in combination with tuberculosis of the respiratory system

Form of urogenital tuberculosis	Form of tuberculosis of the respiratory system					
	Disseminated		Infiltrative		Cavernous	
	abs	%	abs	%	abs	%
Cavernous renal tuberculosis	-	-	-	-	1	3,8
Tuberculous papillitis	6	19,2	2	7,6	-	-
Total	6	23	2	7,6	1	3,8

Table 4. The frequency of concomitant pathology in patients with isolated urinary tract involvement and the associated pulmonary localization of a specific process

Concomitant pathology	Patients with isolated urinary tract infection		Patients with conjugate pulmonary localization of a specific process	
	abs	%	abs	%
Anemia	4	15,4	1	3,8
Alcoholism	17	65,4	5	19,2
Symptomatic hypertension	8	30,8	2	7,6
Kidney disease (history of pyelonephritis)	7	26,9	5	19,2
Drug addiction	1	3,8	1	3,8
Diabetes mellitus	6	23,1	4	15,4
Syphilis	4	15,4	1	3,8

rug resistance to isoniazid and ethambutol in 2 (3%) cases, isoniazid and pyrazinamide — in 1 (1.5%) case, and in 8 patients (11.9%), multiple drug resistance was determined (simultaneous resistance to isoniazid and rifampicin).

CONCLUSIONS

Tuberculosis of the urinary organs is widespread, both in the Russian Federation and, in particular, in the Astrakhan region. Pulmonary papillitis with a subclinical course is predominantly present. Comor-

Table 2. Severity of clinical symptoms in patients with the urinary tract tuberculosis

Symptoms	Number of patients	
	abs	%
Weight loss	4	15,4
Weakness	8	30,8
Subfebrile body temperature	10	38,5
Night sweats	2	7,7
Loss of appetite	3	11,5
Frequent urination	9	34,6
Hematuria	6	23,1
Pain in the lumbar region	7	26,9
Arterial hypertension	8	30,8
Objective data: satisfactory state	21	80,8
the state of moderate severity	5	19,2

bid pathology are diseases that are of medical and social importance, such as diabetes mellitus, anemia, alcoholism, symptomatic hypertension, which, in the presence of symptoms of intoxication and torpidity of general clinical treatment, may be the reason for targeted search for specific damage to the organs of the urinary system.

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