

Features of Diagnostics and Treatment of Drug-Resistant Forms of Pulmonary Tuberculosis

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ABSTRACT

The prevalence of MDR -tuberculosis has increased by 5.9 times over the past 14 years. A serious problem for the TB service, only in a quarter of the newly detected bacterial excretors, due to poor laboratory equipment, the presence of Mycobacterium tuberculosis in the diagnostic material was determined by the cultural method, which means that in 3/4 of the newly detected bacterial excretors there is no possibility of determining the drug sensitivity of the pathogen, and such patients are treated without determining sensitivity to anti-tuberculosis drugs. These data indicate that at present there are a number of obstacles to the effective fight against tuberculosis, where drug resistance (DR) of MBT to anti-tuberculosis drugs, as well as the state of the immunobiological forces of the body is the main ones.

Introduction. Much attention is currently being paid to the study of multidrug-resistant tuberculosis (MDR), where Mycobacterium tuberculosis is resistant to at least isoniazid and rifampicin. A high level of MDR -tuberculosis has a significant impact on the spread of tuberculosis through the accumulation of sources of infection due to the low effectiveness of treatment. The prevalence of MDR -tuberculosis has increased by 5.9 times over the past 14 years [1,9,11,4]. A serious problem for the TB service, only in a quarter of the newly detected bacterial excretors, due to poor laboratory equipment, the presence of Mycobacterium tuberculosis in the diagnostic material was determined by the cultural method, which means that in 3/4 of the newly detected bacterial excretors there is no possibility of determining the drug sensitivity of the pathogen, and such patients are treated without determining sensitivity to anti-tuberculosis drugs [3,4,13,20].

Thus, against the backdrop of a global epidemic of multidrug-resistant or extensively drug-resistant tuberculosis, it is necessary both to optimize the diagnosis of resistant forms of tuberculosis and to early prescribe a course of controlled chemotherapy, selected based on the drug sensitivity of the pathogen, and to include new anti-TB drugs effective against drug-resistant tuberculosis in the course of chemotherapy. form x of tuberculosis. Among the reasons explaining this process, the leading role is played by the presence of a significant reservoir of tuberculosis infection, a significant number of patients excreting multiresistant forms of Mycobacterium tuberculosis [2,5,7,25].

Materials and methods of the study. The data of a survey of 152 patients with drug-resistant forms of tuberculosis who received inpatient treatment at the Bukhara Regional Center for Phthisiology and Pulmonology in the period 2016-2019 were analyzed. The age of the patients varied from 19 to 79 years, the mean age was 62.8 years. In men, the disease occurred 2.04 times

more, and 73.0% of patients were over the age of 50 years. More often the disease occurred in the rural population in 110 (72.4%) cases, and in urban - 42 (27.6%). In 23 (15.1%) cases, the patients were secondary. In 3 (2.0%) cases, it was diagnosed - focal, in 143 (94.0%) - infiltrative, in 3 (2.0%) - disseminated, and in 3 (2.0%) - fibrous-cavernous pulmonary tuberculosis .

All patients underwent a comprehensive laboratory study (general clinical and bacteriological), instrumental (lung x-ray, MSCT, ultrasound, spirometry) and a 6-minute walk test.

In the clinical course, cough with sputum production was observed in all patients, severe intoxication syndrome - in 134 (88.2%), hemoptysis - in 32 (21.1%), in 14 (9.2%) patients with periodic short-term attacks suffocation. The duration of complaints of patients before diagnosis ranged from 0.8 to 6 months, on average - 1.2 months.

A bacterioscopic (according to the Ziehl-Nielsen method) and bacteriological examination of sputum with molecular genetic (Gene Expert, HAIN Test) methods and methods of inoculation on liquid (MGite BACTEK 960) and solid (Levenshtein-Jensen) medium were carried out, followed by detection of sensitivity of *Mycobacterium tuberculosis* to anti-tuberculosis drugs.

Taking into account resistance to anti-TB drugs, second-line drugs of six drugs were prescribed according to the WHO standard: aminoglycosides (capreomycin, kanamycin, ...), cycloserine, PAS, prothionamide, pyrazinamide, fluoroquinolones (levofloxacin, ofloxacin, moxifloxacin). During the treatment period, patients underwent a general analysis of blood and urine, biochemical blood tests, bacteriological analyzes (microscopy, culture methods), X-ray examination of the lungs every month.

Patients were treated for 20 months according to the standard, patients received treatment in the hospital for 3-8 months in the intensive phase, with continued treatment on an outpatient basis. In stationary conditions, in 34.6% of patients who had a severe cough with sputum production, bronchodilators, mucolytics, expectorants were prescribed; hemoptysis - 32 (21.1%) prescribed hemostatic drugs such as aminocaproic acid 5% -100.0 etamsylate 125 and 250 mg - 1.0 ml, eufillin was prescribed in 14 (9.2%) patients with periodic short-term attacks of suffocation 2.4% - 5.0 or 10.0 sometimes with glucocorticosteroid drugs like dexamethasone, prednisone. During treatment, to reduce the toxicity or side effects of anti-tuberculosis drugs, patients were prescribed vitamins, cardiotropic, hepatotropic, antifungal, drugs that normalize the intestinal microflora and general strengthening drugs.

Results and discussion. The effectiveness of treatment depends on adequate anti-tuberculosis therapy, pathogenetic therapy and compliance with sanitary-epidemiological and rehabilitation measures. The effectiveness of bacteriological research methods was studied. A comparative analysis revealed that the sensitivity of the method is higher for the molecular genetic method - $88.6\pm 5.7\%$ of cases, and the seeding method is more specific and amounted to $37.9\pm 15.7\%$.

Sputum abacillation after 1 month was registered in 85 (55.9%), after 2 months - 49 (32.2%), after 3 months - 9 (5.9%), after 4 months - in 7 (4.6 %)), after 5 months - in 1 (0.7%) and after 6 months - in 1 (0.7%) cases. Clinical symptoms disappeared after 1-5 months. In the analysis before inpatient treatment, the six-minute walk test in 9.2% of patients was at a normal level, in 25.7% of cases the patients were III and IV FC, and after inpatient treatment, those entering the IV FC were not observed, and the III th FC occurred in 1.3% of patients. All patients observed an improvement in the general condition and quality of life. There was no death, 15 (9.9%) patients are registered with the dispensary, and 128 (84.2%) have recovered.

Conclusions

1. Researched patients - in 73.0% of cases were over the age of 50 years and 15.1% of patients were secondary, who had previously received treatment for sensitive forms of pulmonary tuberculosis.
2. More often, the disease occurred in the rural population - in 72.4% of cases and most often - in 94.0% of patients, infiltrative pulmonary tuberculosis was found, and in 2.0% of cases, focal pulmonary tuberculosis was diagnosed.
3. In bacteriological verification, sensitivity is higher for molecular genetic methods - $88.6\pm 5.7\%$, and specificity - for seeding methods - $37.9\pm 15.7\%$ of cases.
4. With adequate use of anti-tuberculosis therapy, the timing of sputum abacillation after 3 months was - in 94.1% of cases.

LITERATURE

1. Usmonov, Isomiddin, and Umrzok Shukurov. "Features of the Clinical Course, the State of Diagnosis and Treatment of Hiv-Associated Pulmonary Tuberculosis in Modern Conditions Literature Review." *Annals of the Romanian Society for Cell Biology* (2021): 1809-1828.
2. Kh, Usmonov I., Bahodir R. Muazzamov, and Muhtor F. Jumaev. "Features of diagnostics and treatment of drug-resistant forms of pulmonary tuberculosis." *International journal of pharmaceutical research* 13.1 (2021): 2484-2489.
3. Kh, Usmonov I. "Clinical Course and Modern Diagnosis of Resistant Forms of Pulmonary Tuberculosis." *American journal of social and humanitarian research* 3.2 (2022): 250-260.
4. Khaydarovich, Usmonov Isomiddin, and Shukurov Umrzoq Zarifboevich. "CHALLENGES OF DIAGNOSTICS AND FEATURES OF TREATMENT FOR LUNG TUBERCULOSIS IN HIV INFECTED PATIENTS." *EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE* 2.2 (2022): 92-97.
5. Aslonov, F. I., S. A. Rustamova, and K. M. Raxmonova. "Immunopatological aspects in patients with first detected pulmonary tuberculosis." *World Bulletin of Public Health* 4 (2021): 91-95.
6. Ismoilovich, A. F. "Modern Diagnostic Test for Tuberculosis." *European Multidisciplinary Journal of Modern Science* 4 (2022): 408-412.
7. Ulugbek o'gli A. M. Factors Predicting Mortality in Pulmonary Tuberculosis //Central Asian Journal of Medical and Natural Science. – 2022. – Т. 3. – №. 3. – С. 362-367.
8. Ulugbek o'gli A. M. Test for Procalcitonin as a Way to Predict Patients with Respiratory Tuberculosis //European Multidisciplinary Journal of Modern Science. – 2022. – Т. 4. – С. 486-491.
9. Муаззамов Б. Р., Жумаев М. Ф. О преподавании фтизиатрии на лечебном и медико-педагогическом факультетах //Материалы VIII Съезда фтизиатров и пульмонологов Узбекистана. Тошкент. – 2018. – С. 109-110.
10. Erkinova, Nigora. "OBSERVATION OF ALBUMINURIA IN CHRONIC HEART FAILURE AND SOME OF ITS CLINICAL FEATURES." *Galaxy International Interdisciplinary Research Journal* 9.05 (2021): 442-446.
11. Bahodirovna, T. Z. (2022). CURRENT TRENDS IN FORMATION OF URINARY SYSTEM DISEASES IN SCHOOL AGE CHILDREN AND FEATURES OF THEIR COURSE. *Galaxy International Interdisciplinary Research Journal*, 10(11), 293-297.

12. Ваходировна, Т. З. (2021). Risk factors, clinical and laboratory features and prevention of oxalate nephropatia in children. *ACADEMICIA: An International Multidisciplinary Research Journal*, 11(11), 133-138.
13. Erkinovna, Erkinova Nigora. "PRE-AND POST-TREATMENT INDICATIONS IN CHRONIC HEART FAILURE WITH VARIOUS COMORBID DISEASES." *Galaxy International Interdisciplinary Research Journal* 10.11 (2022): 302-308.
14. Алимова Г. С. Массовый Скрининг Для Выявления Туберкулезной Инфекции У Детей В Возрасте От 2 До 8 Лет //Central Asian Journal of Medical and Natural Science. – 2022. – Т. 3. – №. 3. – С. 368-376.
15. Salimovna A. G. Diagnosis of Tuberculosis Infection Activity by ELISA and Transcription Analysis Methods //European Multidisciplinary Journal of Modern Science. – 2022. – Т. 4. – С. 492-497.
16. Рахмонова К. М. Разработка Методов Ранней Диагностики, Лечения И Профилактики Хронической Дыхательной Недостаточности При Туберкулёзе Легких (Обзорная Литературы) //Central Asian Journal of Medical and Natural Science. – 2022. – Т. 3. – №. 3. – С. 262-272.
17. Рахмонова К. М. Туберкулез Легких И Сопутствующие Заболевания //Central Asian Journal of Medical and Natural Science. – 2021. – Т. 2. – №. 6. – С. 137-144.
18. Mizrobovna R. K. Accompanying Diseases of the Respiratory System Pulmonary Tuberculosis //European Multidisciplinary Journal of Modern Science. – 2022. – Т. 4. – С. 244-250.
19. Muzrobovna R. K. Diagnosis and Treatment Patients with Pulmonary Tuberculosis with Concomitant Bronchoobstructive Syndrome //Research Journal of Trauma and Disability Studies. – 2022. – Т. 1. – №. 10. – С. 109-118.
20. Rakhmonova K. TUBERCULOSIS AND IRON-CONTAINING CHEMOTHERAPEUTIC DRUGS //Eurasian Journal of Medical and Natural Sciences. – 2022. – Т. 2. – №. 10. – С. 40-45.
21. Жумаев М. Ф. СЛОЖНОСТИ ДИАГНОСТИКИ И ЛЕЧЕНИЯ ЛЕКАРСТВЕННО-УСТОЙЧИВЫХ ФОРМ ТУБЕРКУЛЁЗА ЛЕГКИХ //Вопросы науки и образования. – 2021. – №. 15 (140). – С. 21-27.
22. Жумаев М. Ф. ДИАГНОСТИКА ЛЕКАРСТВЕННОЙ УСТОЙЧИВОСТИ ПРИ ТУБЕРКУЛЕЗЕ ЛЕГКИХ У ПАЦИЕНТОВ МОЛОДОГО ВОЗРАСТА И ПРИЧИНЫ ЕЕ ФОРМИРОВАНИЯ //BARQARORLIK VA YETAKSHI TADQIQOTLAR ONLAYN ILMIIY JURNALI. – 2022. – Т. 2. – №. 10. – С. 358-362.
23. Fatullaevich J. M. DIAGNOSTICS OF DRUG RESISTANCE IN TUBERCULOSIS LUNG IN YOUNG PATIENTS AND CAUSES OF ITS FORMATIONS //BARQARORLIK VA YETAKSHI TADQIQOTLAR ONLAYN ILMIIY JURNALI. – 2022. – Т. 2. – №. 12. – С. 19-24.
24. Рустамова С. А. и др. Изучение причин и факторов, способствующих развитию рецидивов туберкулеза органов дыхания //Медицинский альянс. – 2015. – №. 1. – С. 115-115.
25. Рустамова С. А. и др. Спектр лекарственной устойчивости и эффективность лечения впервые выявленных больных туберкулезом легких //Медицинский альянс. – 2015. – №. 1. – С. 116-116.
26. Yitmasova T. BASIC RESEARCH METHODS IN TUBERCULOSIS PREVENTION AND TREATMENT //Theoretical aspects in the formation of pedagogical sciences. – 2022. – Т. 1. – №. 5. – С. 55-56.