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## **MODERN METHODS OF DIAGNOSIS OF TUBERCULOSIS**

**Resume:** Most of the examined patients had concomitant diseases and most often these are various non-specific diseases of the bronchopulmonary system. And some patients were observed for several diseases at the same time. Erased clinical symptoms, lack of alertness of doctors of polyclinics of alertness in relation to tuberculosis, leads to late diagnosis of the disease.

In 32 patients, bacterial excretion was established by bacterioscopy using the real-time PCR method GeneXpert Rif in addition, Mycobacterium tuberculosis was detected in 11 patients, and in 7(10.4%), multidrug resistance was established.

**Keywords:** tuberculosis in the elderly, Diaskin test, GeneXpert Rif (real-time PCR), clinical forms of tuberculosis, treatment effectiveness

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## **СОВРЕМЕННЫЕ МЕТОДЫ ДИАГНОСТИКИ ТУБЕРКУЛЕЗА**

**Резюме:** У большинства обследованных были сопутствующие заболевания и чаще всего это различные неспецифические заболевания бронхо- легочной системы. А некоторых пациентов наблюдалось по несколько заболеваний одновременно. Стертая клиническая симптоматика, отсутствие настороженности врачей поликлиник настороженности в отношении туберкулеза, приводит к поздней диагностики заболевания.

У 32 пациентов бактериовыделение установлено методом бактериоскопии применение метода ПЦР в реальном времени GeneXpert Rif дополнительно у 11 больных выявили микобактерии туберкулеза, причем у 7(10,4%) установлена множественная лекарственная устойчивость.

**Ключевые слова:** туберкулез у пожилых, Диаскин тест, GeneXpertRif (ПЦР в реальном времени), клинические формы туберкулеза, эффективность лечения

**Relevance:** tuberculosis in the elderly has tended to increase in recent years, and tuberculosis in these patients is detected late. The incidence and mortality from tuberculosis at this age is significantly higher than in other age groups. In the elderly, bacterial excretion is very often established, which creates an epidemiological danger for those around them, especially children and adolescents.

**The purpose of the study:** to study the methods of detecting tuberculosis in the elderly in a polyclinic, the features of the clinical course of tuberculosis and the importance of new innovative research methods for earlier detection of tuberculosis.

**Materials and methods:** we analyzed 67 medical records of elderly people who received treatment at the Andijan TB dispensary. 18 outpatient records of patients who were excluded from tuberculosis before the examination. All patients underwent traditional methods (a general blood test, sputum for CD by bacterioscopy and seeding, X-ray, biochemical studies, and a Mantoux test with 2 TE). In addition, they used: staging of Diaskintest, sputum examination on the GeneXpert Rif device (real-time

PCR method) for the detection of Mycobacterium tuberculosis and drug resistance to the main anti-tuberculosis drugs

*The results of the study and their discussion:* the distribution of patients by gender and age established that there were 28 women and 39 men. By age, the patients are distributed from 55 to 64- 13(19,4%); 65-74- 36(53.8%); and older than 75-18 (26.8%) patients, i.e. more than half of the patients were aged 65-74 years. Rural residents prevailed -38 (56.7%).

When studying the detection method, it was found that 77.6% of patients were transferred from various hospitals (mainly therapeutic departments, endocrinology dispensaries, private hospitals where the elderly were treated for various somatic diseases). Despite the fact that in our republic, elderly people are at risk for tuberculosis – only 12 people were identified during preventive fluorography. The analysis of the structure of clinical forms revealed: in 50(75%) patients, infiltrative tuberculosis (and in 28 the process was widespread, more than 2 percent and they also had decays, bacterial excretion was established by bacterioscopy in 22, in 6 a study on the GeneXpert Rif device, and in 2 multi-drug resistance was detected). The next most frequent detection was disseminated tuberculosis in 8 (12%), followed by fibrocavernous tuberculosis in 3 and focal tuberculosis in 6 patients. In 32 patients, bacterial excretion was established by bacterioscopy and 11 by real-time PCR GeneXpert Rif, and in 7(10.4%) patients, multidrug resistance was established.

Various non - specific diseases of the bronchopulmonary system (from banal bronchitis to chronic pneumonia) come to the fore, there were 23 such patients, and the duration of the disease was up to a year in 10, up to 3 years-9, more than 3 years-4, it was in this group that 2 were diagnosed with fibrocavernous tuberculosis. The fact is that these patients also had pathology of the cardiovascular system (hypertension, CHD, chronic heart failure), even the presence of shortness of breath and cough with mucus sputum were regarded as signs of decompensation of the cardiovascular system. All 3

patients did not undergo fluorography for 2 to 3 years, this was due to the fact that they were most often treated in private hospitals.

Upon admission to the hospital the 40 patients evaluated - as satisfactory, 12 - relatively satisfactory, moderate 9, heavy - 6. In the group of patients with a satisfactory and relatively satisfactory condition symptoms of tuberculosis was not pronounced, the reason for x-ray examination was prolonged low-grade fever, weakness, lack of effect of the treatment. The scarcity of clinical symptoms, inadequate assessment of their well-being, leads to the fact that patients do not go to the clinic. In moderate to severe condition, these patients were admitted to a therapeutic hospital with symptoms of bronchopulmonary disease, the most common diagnosis in the elderly is chronic obstructive bronchitis in the acute phase and community-acquired pneumonia.. Inconsistency of clinical symptoms (poor auscultative picture, prolonged cough (more than a month), shortness of breath, weight loss, weakness) led to X-ray examination followed by bacterioscopic examination for *Mycobacterium tuberculosis*.

All patients were given a Mantoux test, which was negative or doubtful in 36 patients. Hyperergic responses were not observed. A group of patients with negative and doubtful results of the Mantoux test with 2 TE was diagnosed with Diaskintest. The results were: negative test - in 4, doubtful-in 8, in the remaining 24 (66.6%) patients the result was positive (papule up to 10 mm - 19, up to 15 mm-13 to 20 mm-5). Thus, Diaskintest in elderly patients is a more informative method of investigation than the Mantoux test with 2TE. The intensity of the response to Diaskintest depends on the volume of the lesion and the severity of caseous-necrotic inflammation.

Depending on the result of drug sensitivity - 58 patients started standard therapy according to WHO recommendations with the main line of drugs. 9 patients with multidrug-resistant mycobacteria, also started treatment according to WHO standards for this category of patients. The presence of many concomitant diseases makes it difficult to carry out treatment, so along with antibacterial drugs, adequate symptomatic

therapy is carried out under the supervision of a therapist. Nevertheless, in 21 patients, despite the ongoing symptomatic therapy, drug intolerance was observed. Allergic reactions were observed in 9 patients, toxic effects in the form of nausea and vomiting were observed in 11 patients and 1 patient had an increase in transaminases, drugs were discontinued, anti-allergic, detoxification measures were carried out in 16 patients, the drugs were subsequently restored, 5 patients were prescribed alternative treatment without the drug that caused tolerability. The patient outcomes were as follows: sensitive tuberculosis: the end of 2 months of intensive phase of treatment of 32 patients stopped the bacterial discharge only 6 to the end of the third month 12, by the end of 4 months in 9, in the absence of bacteriologic patient with seeding from 2 patients showed multiple drug resistance, in 4 patients due to intolerance of drugs (most often rifampicin) converted to alternative treatment regimens, the percentage healing cavities was very low, so 30 patients with cavities in the lung parenchyma only 14, In 11 patients, the caverns decreased in size, and in 18 patients, the resolution of infiltrative shadows and dropout foci was achieved. In 17 patients, the process acquired a chronic course.

**Conclusions:** among the elderly, predominantly male, age 65-74 - 53,8%, mainly in rural areas. The main method of detection is X-ray examination during inpatient treatment, a total of 12 patients were identified during preventive fluorographic examination. This is due to the fact that most patients refuse to be examined in a polyclinic and are treated mainly in private hospitals, where there is no X-ray machine, in this regard, this contingent remains out of the field of view of therapists. From these positions, it is necessary for doctors of private hospitals and polyclinic doctors, it is necessary for mandatory X-ray examination

In 32 patients, bacterial excretion was established by bacterioscopy using the real-time PCR method GeneXpert Rif in addition, Mycobacterium tuberculosis was detected in 11 patients, and in 7(10.4%), multidrug resistance was established.

Diaskintest in elderly patients is a more informative method of investigation than the Mantoux test with 2TE. A comparative analysis of the relationship between the results of Diaskintest and the clinical forms allowed us to establish that negative and doubtful results were obtained in patients with limited processes (focal, infiltrates of small extent and without decay). Papule 15-20 mm, was observed in patients with pronounced infiltrates (process 2-sided, with the collapse of the lung parenchyma, the presence of large caseous foci of dropout). The intensity of the response to Diaskintest depends on the volume of the lesion and the severity of caseous-necrotic inflammation. The use of GeneXpert Rif and Diaskintest in the elderly allows, in combination with other studies, to confirm or exclude tuberculosis.

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