

Modern algorithms of geno-phenotypic diagnosis of tuberculosis in Ukraine

O.A. Zhurylo, A.I. Barbova

SI "National Institute of Phthiisology and Pulmonology named after F.G. Yanovsky of the NAMS of Ukraine", Kyiv, Ukraine

Conflict of interest: none

BACKGROUND. To ensure timely and accurate detection of tuberculosis (TB), including TB with multiple drug resistance in Ukraine, the document "Health Standards for TB" (Order of the Ministry of Health of Ukraine № 2161 of 06.10.2021), which the basis of laboratory diagnosis of TB is the use of modern molecular genetic methods and tested in the Central Reference Laboratory of Ukraine for microbiological diagnosis of TB.

RESULTS AND DISCUSSION. The article presents complex algorithms for the diagnosis and monitoring treatment of pulmonary TB using rapid molecular genetic methods. The basic principles and approaches to the diagnostic process, on which the domestic normative document is based, corresponds to those recommended by World Health Organization experts for the countries of the European region. When testing for TB, a molecular genetic test must be performed to detect the presence of *Mycobacterium tuberculosis* DNA in the diagnostic sample. Then (depending on the capabilities of the laboratory) one or another technology is used to detect mutations associated with the resistance of *M. tuberculosis* to the maximum possible range of AMBP I and II lines. After receiving the results of seeding in the automated system BACTEC MGIT, which is currently the gold standard for the study of drug sensitivity of *M. tuberculosis* to AMBP I and II lines, the treatment regimen is adjusted if necessary according to the phenotypic test of drug sensitivity.

CONCLUSIONS. According to the latest international guidelines for the diagnosis of TB, preference should be given to molecular genetic diagnostic tests and culture studies in liquid nutrient media. Microscopic and cultural studies are important and remain necessary to monitor treatment.

KEY WORDS: algorithm for microbiological diagnosis of tuberculosis, rapid molecular genetic tests.