

NEW PHENO-GENOTYPIC TECHNOLOGIES IN DIAGNOSIS OF TUBERCULOSIS

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Abstract

Widespread drug-resistant tuberculosis is a global problem and can have a negative impact on the global tuberculosis situation. Rapid diagnosis of the disease and early initiation of effective treatment based on the selection of personalized chemotherapy regimens are the basis for preventing the spread of tuberculosis. Microbiological methods which can justify the etiology of the process and determine the drug susceptibility of the pathogen are of particular importance for the diagnosis of tuberculosis.

The review is focused on current methods of microbiological diagnosis of tuberculosis, including classical microbiological (diagnostic microscopy; solid and liquid media cultures) and modern molecular genetic tests (DNA strips; GeneXpert; multiplex PCR and other).

The article presents data on modern methods of bacteriological and molecular genetic diagnosis of tuberculosis, their effectiveness and role in verifying the diagnosis of tuberculosis. The effectiveness of their integrated use to improve the quality of research and rapid detection of patients with *M. tuberculosis* has been proven. The place of the described methods in the diagnostic algorithm of tuberculosis laboratories is estimated. Further prospects for the diagnosis of tuberculosis associated with the use of new technologies are considered. The information on the current state of microbiological diagnostics of tuberculosis is generalized, the importance of development and introduction of the latest technologies in the diagnostic process is emphasized.

Key words: tuberculosis, mycobacteria tuberculosis, drug resistance, methods of bacteriological diagnostics, molecular genetic technologies, PCR, sequencing.

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