

THE IMPACT OF DIFFERENT MICROBIOLOGICAL METHODS IN THE DIAGNOSIS OF RESISTANT TUBERCULOSIS

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The delayed diagnosis of the drug resistant tuberculosis represents an important obstacle for successful control of tuberculosis. Cultural methods remain the golden standard of tuberculosis diagnosis, despite of their low sensibility and long duration of cultivation. Modern development in microbiological diagnostics, especially of rapid molecular tests contributes permit an accurate detection of drug-resistant tuberculosis (MDR-TB). In and 69 % (66–72 %) of retreated cases were MDR-TB. Late detection and inadequate management of MDR-TB cases leads to the worsening of the regional epidemiological situation. That fact argued the strong necessity to perform a local survey targeting the role of different molecular genetics methods in the diagnosis of multi-drug resistant pulmonary 2015 in the Republic of Moldova 32 % (29%–34%) of new cases were MDR-TB tuberculosis.

Aim of the study consisted in the assessment of the clinical, radiological and microbiological characteristics of patients with multi-drug resistant pulmonary tuberculosis detected through GeneXpert molecular assay and drug sensitivity testing on conventional culture methods.

Material and methods

It was performed a retrospective, selective study targeting clinical, radiological and microbiological peculiarities of 75 MDR-TB pulmonary tuberculosis cases diagnosed and hospitalized in the frame of Chisinau Specialized Institutions in the period of 01.01.2015–31.12.2016. Statistical survey was performed using Microsoft Excel XP soft.

Results

In the frame of municipal specialized institutions were registered 84 new pulmonary tuberculosis patients with GeneXpert MTB/Rif positive and rifampicine resistant strains. From 85 cases 75 (89,3 %) were identified with MDR-TB and were included in the DOTS-Plus regimen. Rifampicine resistance without other drug resistance had 9 (10,7%) cases and were treated individualized. From 75

MDR-TB cases 2 (2,7 %) had only GeneXpert MTB/Rif positive without confirmation of drug resistance on conventional culture media. The data presented below were obtained by assessing 75 MDR-TB cases. The *gender analysis* identified 49 (63,3 %) men and 26 (34,7 %) women with male/female ratio = 1,88/1. Age distribution of patients into two groups identified that the most patients were young and middle-aged adults (18–44 years) 52 (69,3 %) and 23 (30,7 %) patients — were more than 45 years old. When performing of the drug sensitivity testing identified the following spectrum of drug resistance: 51 (68,0 %) were resistant to HRSE, 24 (32,0 %) to HRS, 43 (57,3 %) had associated resistance to ethionamid, to fluoroquinolones 2 (2,7 %), to amikacine 2 (2,7 %), 1 (1,3 %) had XDR-TB. Assessing case-management it was established that 42 (56,0 %) were detected at the primary health care level, including 30 (71,4 %) by passive way through the microbiological examination of the symptomatic patients and 12 (28,6 %) by high risk groups screening. The specialists detected only 21 (28 %) patients, from which 16 (76,2 %) by passive way and 5 (23,2 %) cases through the screening of high risk groups. By other ways of detection were identified 12 (16,0 %) patients. Clinical-radiological forms diagnosed at the selected patients were: infiltrative pulmonary tuberculosis — 68 (90,7 %) cases, pulmonary disseminated forms — 6 (8,0 %) cases and nodular tuberculosis — 1 (1,3 %) case. Radiological investigations revealed lung destruction in one lung at 21 (28,0%) patients and in both lungs at 2 (2,7 %) cases. One half of group, 31 (41,3 %) patients, was identified only with infiltrative opacities. Patients were treated according to the DOTS-Plus regimen, actually being registered outcomes: successfully treated were 13 (17,3 %) patients, completed the treatment 2 (2,7 %) patients, died 1 (1,3 %) case, failed the treatment 1 (1,3 %) case, were lost to follow-up 2 (2,7 %) cases and 56 (74,6 %) patients are still continuing the treatment.

Conclusions

Considering high MDR-TB burden in Republic of Moldova, the early detection of resistant strains of *Mycobacteria tuberculosis* will contribute to the onset of an

adequate treatment according to its susceptibility and will ensure an optimal treatment outcome with high cost-effectiveness rate.
