

**INCREASING EFFECTIVENESS OF MYCOBACTERIA ISOLATION
FROM CLINICAL MATERIAL OF PATIENTS WITH PULMONARY
TUBERCULOSIS USING A LIQUID NUTRIENT MEDIUM
MIDDLEBROOK 7H9 IN BACTEC MGIT 960:
AN EXPERIMENTAL STUDY**

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Abstract

The aim of the study was an increase of effectiveness and standardization of bacteriological diagnostics of tuberculosis, using liquid medium Middlebrook 7H9 system BACTEC MGIT.

Material and methods. For the decontamination, dilution and concentration of bacilli in the sputum BBL Mycoprep with NALC-NaOH was used. Tubes with samples were centrifuged at 3000 g for 20 min. To enrich liquid medium Middlebrook 7H9 RANTA-reagent was added after dilution to each MGIT tube immediately before sowing the material. The tubes were placed in BACTEC MGIT and incubated. Samples were kept 42 days according to the protocol. An immunochromatographic analysis was used for identification of the isolated strains of mycobacteria.

Results. 698 sputum samples were examined using both Middlebrook 7H9 liquid medium in BACTEC MGIT system and Lowenstein-Jensen dense medium. 547 samples (78,4 %) were positive on dense medium. From dense medium negative samples 96 appeared positive by culturing in liquid medium (13,7 %). Diagnostic effectiveness of BACTEC MGIT system liquid medium was 1,2 times higher than those of solid medium culture. The average duration of M. tuberculosis growth in a liquid medium was 3,1 times less comparing with solid medium. The average length of subculturing of positive species from the MGIT tubes on a modified dense medium was 1,8 times less than on the classic Lowenstein-Jensen medium. The average duration of isolation of mycobacterium using Middlebrook 7H9 liquid medium and modified Lowenstein-Jensen medium for subculturing was 18,9 days, i.e. 1,3 times less than the duration of the isolation of mycobacterium using Middlebrook 7H9 liquid medium and classic Lowenstein-Jensen medium for subculturing.

Key words: tuberculosis bacteriological diagnostics, liquid medium Middlebrook 7H9, system BACTEC MGIT 960

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