Abstract

Purpose

In order to monitor the trend of anti-tuberculosis drug resistance in Taiwan by using standardized methods, both Lowenstein-Jensen (L-J), Mycobacteria Growth Indicator Tube (MGIT) 960 and agar 7H10 methods were compared in parallel. The overall goal of this project is to improve the performance of the national tuberculosis control program.

Materials and Methods

In this study, reference stains obtained from ATCC, 21 tested strains from supernational reference laboratory and 44 *Mycobacterium tuberculosis* strains from local clinical laboratories have been tested using standardized L-J and MGIT 960 drug susceptibility tests.

Results and Discussion

The overall performance of both methods in ATCC reference strains were 100% satisfaction, while, L-J method was more stable and accurate than MGIT method when evaluating clinical and tested strains. The discrepancy results obtained from MGIT method were mainly due to operational issues, including drug concentration, inoculums concentration, suspension homogeneity, contamination, etc. The MGIT method provides drug-resistant final results faster than L-J method.

Conclusion and Suggestions

The laboratory proficiency, particularly the sensitivity and specificity of drug susceptibility testing, may affect the prevalence result of drug resistance. For drug resistance surveillance, the L-J method might be the better choice; while, in clinical laboratory MGIT method might be able to provide results for early patient treatment.

Keywords: Mycobacterium tuberculosis；Drug susceptibility test；Mycobacteria Growth Indicator Tube method