Application of Diagnostic Techniques on Tuberculosis Diagnosis

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Abstract

Tuberculosis (TB) is a leading notifiable infectious disease primarily caused by *Mycobacterium tuberculosis* complex (MTBC). Bacteriological research and development is crucial for combating public health challenges caused by TB. According to the slow growth and other biological characteristics of MTBC, World Health Organization has recommended a few new TB tools, diagnosis policies and guidelines since 2006. To strengthen laboratory services, mycobacterial liquid culture method, lateral flow immunochromatographic assays and molecular tests for rapid identification and detection of drug resistance were implemented in Taiwan. Consequently, enhanced TB diagnosis and treatment strategies have been successfully adopted in the National TB program. In addition, due to the completion of whole genome sequence of *M. tuberculosis,* several genes detection and genotyping technologies significantly enhance public health efforts on TB outbreak investigations. Currently, clinical mycobacteriology laboratories are categorized and authorized by Taiwan Centers for Disease Control based on their biosafety level, competence and capacity. Depend on available resources, new diagnostics and algorithms are gradually evaluated, introduced and implemented in routine clinical services. Overall improvement of laboratory services could meet the goals of TB control in Taiwan.

Key words: tuberculosis, laboratory diagnosis, tuberculosis control