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Title: Effectiveness of real-time polymerase chain reaction for mycobacterium tuberculosis in bronchoscopic mucosal biopsy specimens for rapid diagnosis of endobronchial tuberculosis

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Body: Instruction The diagnosis of enndobronchial tuberculosis(EBTB) is difficult and challenging. Rapid diagnosis of EBTB is critical. But the diagnostic yield of real-time PCR applied to bronchoscopic biopsy tissue is underdetermined. Objective To evaluate the role of real-time PCR of bronchoscopic biopsy specimens for the rapid diagnosis of EBTB.Methods Real-time PCR for M tuberculosis DNA in bronchial tissue from EBTB was performed in addition to histological analyses, sputum smear and bronchial brush smear (BBS). Results Totally 74 cases of EBTB and 75 cases of lung cancer as control were analysized. EBTB classified into 6 types according to bronchial findings. The yields of sputum smear and BBS by rapid AFB auramine O fluorescent stain, and bronchoscopic biopsy tissue by real-time PCR were 4.1%, 39.2% and 82.4% respectively. The sensitivies of real-time PCR when using 35 and 40 as the cycle threshold(CT) cut-off values were 82.4% and 89.2%, respectively, while the specificities were 90.7% and 80%. A significant difference was found between bronchoscopic types of EBTB in the yields of real-time PCR (CT35) detection of bronchial biopsy tissue (P<0.05). The diagnostic yield of DNA real-time PCR (CT35) of bronchial biopsy samples was greater than that of BBS in granular and caseating types (P<0.05).Conclusions The detection of M. tuberculosis DNA in EBTB biopsy tissue by real-time PCR is more sensitive than bronchoscopic brush smear. Its yield could be influenced by the bronchoscopic type of EBTB; the early stages appear to have higher diagnostic yields.