

Investigating the diagnosis for TB pleurisy using medical thoracoscopy; A novel specimen, targeted washing after pleural biopsy

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Background

This study aimed to investigate the additional diagnostic yield of medical thoracoscopy (MT) on microbiological confirmation of tuberculous pleural effusion (TPE).

Methods

Medical records of patients who underwent MT and were diagnosed as TPE with microbiological or histologic evidence between 2016 and 2021 at Incheon St. Mary's hospital were retrospectively reviewed. Sensitivity of microbiological results (acid-fast bacilli (AFB) culture or TB-polymerase chain reaction (PCR)) of pre-MT pleural fluid and those of targeted pleural washing fluid and pleural tissue obtained during MT were compared. Difference of sensitivity was verified with McNemar's test.

Results

A total of 56 patients were enrolled. As for pre-MT pleural fluid, sensitivity of AFB culture and TB PCR was 7.1% (4/56) and 1.8% (1/56), respectively. As for targeted pleural washing fluid, sensitivity of AFB culture and TB-PCR was 26.8% (15/56) and 14.3% (8/56), respectively. As for pleural tissue, sensitivity of AFB culture and TB-PCR was 23.2% (13/56) and 50.0% (28/56), respectively. MT showed additional 32.1% (95% CI: 15.4% - 46.6%, $p < 0.001$) of sensitivity gain in AFB culture and 50.0% (95% CI: 32.1% - 63.7%, $p < 0.001$) in TB-PCR. With targeted pleural washing, additional 21.4% (95% CI: 5.9% - 35.9%, $p = 0.004$) of sensitivity gain in microbiological confirmation was identified, whereas additional 46.4% (95% CI: 27.9% - 60.9%, $p < 0.001$) of sensitivity gain was identified with pleural biopsy.

Conclusion

With MT, 60.7% of additional sensitivity gain in microbiological confirmation of TPE was identified, which underscores the role of MT in diagnosis of TPE.