

Original Article

CLINICAL ANALYSIS OF PULMONARY TUBERCULOSIS FOUND BY
MASS SCREENING MEDICAL EXAMINATION

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Abstract Five hundred twenty-one patients with pulmonary tuberculosis were diagnosed in our three affiliated hospitals during past 10 years. Among them, 43 cases (22 men and 21 women; mean age 54.8 years) who were detected by active case-finding were clinically evaluated. Most of them were detected in an annual mass screening examination, but seven cases were found by contacts examination which was performed on subjects who were contacted with newly diagnosed patients with pulmonary tuberculosis. Fifteen of them were socially jobless on admission. Eighteen cases (41.9%) had underlying diseases, and gastrointestinal diseases and diabetes mellitus were most frequently observed. The final diagnosis was confirmed through bronchoscopic specimens in 18 cases in which *Mycobacterium tuberculosis* could not be detected from the sputum. Regarding radiological findings according to the criteria of the Japanese Society of Tuberculosis, most cases had unilateral distribution, and were classified as type III (active, non-cavitary) for characteristics and I (minimal) for the extent of lesions. Treatment using combination therapy with four drugs including pyrazinamide was performed for over half of these cases and subsequently the clinical efficacy was good except in one case who died due to worsen-

ing of the underlying disease.

Anti-tuberculous drugs were generally administered to cases suspected of having pulmonary tuberculosis on chest X-ray. However, early diagnosis using bronchoscopy and early treatment seems to be useful, when *Mycobacterium tuberculosis* is not detected in the sputum.

Key words: Mass screening medical examination, Periodical medical examination, Nonperiodical medical examination, Bronchoscopic examination

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EVALUATION OF THE MYCOBACTERIA GROWTH INDICATOR TUBE SYSTEM FOR DETECTION AND QUANTIFICATION OF MYCOBACTERIA FROM CLINICAL SPECIMENS

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Abstract The Mycobacteria Growth Indicator Tube (MGIT) system, a broth system for detection of mycobacterial growth, has been shown to be more sensitive and rapid compared with the egg-based Ogawa solid media, while the lack of ability to quantitate bacterial growth is the problem. We compared mycobacterial growth in the MGIT and the Ogawa systems, and evaluated the relationship between detection time in the MGIT system and bacterial CFU on Ogawa egg medium. A total of 413 respiratory specimens from 245 patients were included in the study, of which *Mycobacterium tuberculosis* (MTB), *M. avium* complex (MAC) and *M. kansasii* were recovered from 127, 42 and 6 specimens, respectively. Recovery rates were significantly higher and detection time was significantly shorter in the MGIT than in the Ogawa for MTB and MAC. Detection time in the MGIT was significantly shorter in smear positive specimens than in smear negative ones for MTB and MAC. There was a significant negative

correlation between CFUs on Ogawa egg medium and detection time in the MGIT system for the MTB, therefore, this system may have an ability to quantitate live mycobacteria according to the detection time.

Key words: Mycobacteria Growth Indicator Tube (MGIT), Culture techniques for mycobacteria, Quantification of mycobacteria

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A SUSPECTED CASE OF MASS OUTBREAK OF TUBERCULOSIS INFECTION IN A SMALL COMPANY SEPARATED INTO TWO FLOORS

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Abstract The number of tuberculosis outbreak among adult groups has increased. In some of them, it is difficult to identify the route of infection and sometimes many people are involved in the outbreak. We experienced a suspected case of mass outbreak in a small company separated into 2 floors.

The first patient, who lived in another city, was diagnosed as pulmonary tuberculosis in April with bilateral extensive cavitory lesions complicated with pleurisy on chest X-ray, and his sputum smear was Gaffky No. 8 and culture (+) (resistant to isoniazid).

We conducted tuberculin skin test (TST) for those under-30 year-old. In TST, 4 persons showed strong positive reaction. After consulting with tuberculosis specialists, three were diagnosed as newly infected with tuberculosis and one as hilar lymph node tuberculosis. So we added 25 staffs under 60s for TST and found that another 13 people were suspected to be infected with tuberculosis.

From the initial information, the index cast was said to work only in the 2nd floor, so the staffs in 7th floor were

excluded from the survey. Through the interview with staffs by a public health nurse and an inspection of the work place with sanitary inspectors, it was concluded to expand the survey to the staffs working in the 7th floor, and another newly infected persons were found. Staffs in a small company do not belong to "danger group", but the importance of investigations by public health officials was suggested in the case of suspected outbreak.

Key words: Outbreak, Air born disease, Small company staff, Tuberculin skin test

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————— Case Report —————

A CASE OF ISONIAZID SODIUM METHANESULFONATE
INDUCED INTERSTITIAL PNEUMONIA

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Abstract A 71-year-old male was admitted to our hospital with dyspnea on effort. He had been prescribed rifampicin, isoniazid sodium methanesulfonate (IHMS), and ethambutol for pulmonary tuberculosis, and ursodesoxycholic acid for alcoholic liver dysfunction. The chest HRCT revealed diffuse ground-glass attenuation with interlobular interstitial thickening. BALF showed lymphocytosis, and TBLB revealed organizing pneumonia. All medications were interrupted, and his respiratory failure and chest HRCT findings were improved. He started again medications excluding IHMS, his condition continued to improve further. DLST to causative IHMS was negative with peripheral blood lymphocytes, but was positive with lymphocytes from BALF. Therefore, we diagnosed this case as having IHMS induced interstitial pneumonia. In the past, 5 cases of isoniazid induced interstitial pneumonia were reported, but IHMS induced interstitial

pneumonia has not been reported. Clinicians need to be aware of drug induced interstitial pneumonia by anti-tuberculosis drugs including IHMS in patients receiving anti-tuberculosis drugs.

Key words: Drug-induced interstitial pneumonia, Isoniazid sodium methanesulfonate, Isoniazid, Bronchoalveolar lavage fluid, Drug lymphocyte stimulation test

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A CASE OF TUBERCULOUS PERICARDITIS, THE DIAGNOSIS OF WHICH WAS COMPLICATED BY THE DELAY IN THE RISE OF ADENOSINE DEAMINASE IN THE PERICARDIAL EFFUSION

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Abstract An 81-year-old man was admitted to our hospital because of pericardial effusion and sputum PCR positive for *Mycobacterium (M.) tuberculosis*. Since adenosine deaminase (ADA) value of the pericardial effusion was not high and the sputum smear and culture were negative, anti-tuberculous therapy was not started. Two months later he was admitted again because of high fever and cardiomegaly. Chest computed tomography showed deterioration and the sputum culture revealed *M. tuberculosis*. The ADA value of the pericardial effusion which was not high at the first admission, was elevated in the second admission, and the diagnosis was made as tuberculous pericarditis two months later. We had better start anti-tuberculous therapy at the first admission, in

spite of low value of ADA, as his pericardial effusion showed lymphocyte predominance.

Key words: Tuberculous pericarditis, Pericardial effusion, Adenosine deaminase

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