

Original Article

EVALUATION OF RISK FACTORS FOR FAILED/DEFAULTED ON TREATMENT OUTCOMES OF PULMONARY TUBERCULOSIS IN OSAKA CITY

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Abstract [Objective] In this study, we analyzed the relationship between the risk of discontinuing medication and patient outcomes.

[Methods] Newly registered patients with pulmonary tuberculosis from Osaka City who required outpatient treatment in 2011 were included in the study. We assessed the number of patient cures and the number of patients who completed medication as outcomes for successful treatment and the number of failed treatments and the number of treatments that were discontinued by patients as outcomes for failed and discontinued treatments. As related factors, we examined the risk of discontinuing medication, implementation of directly observed treatments, short course (DOTS), and planned duration of treatment. To assess the risk of discontinuing medication, we examined the following medical risk factors: (1) drug resistance to isoniazid or rifampicin, (2) diabetes, (3) use of immunosuppressive/anticancer drugs, (4) use of adrenal corticosteroid, (5) artificial dialysis, (6) human immunodeficiency virus infection/acquired immunodeficiency syndrome, (7) liver damage, and (8) side effects. The social risk factors were (1) being without a fixed address at the time of registration, (2) a history of discontinuing treatment, (3) lack of assistance with medication, (4) being elderly and requiring nursing care, (5) alcohol/drug dependence, (6) serious mental disease, (7) financial problems, (8) lack of the awareness of being ill, (9) keeping irregular hours, and (10) others.

[Results] We identified 568 cases of successful treatment and 41 cases of failed and discontinued treatment. Multiple logistic regression analysis was performed, with successful

treatment considered as the dependent variable 0 and failed and discontinued treatment considered as the dependent variable 1. The medical/social risk factors, positive/negative sputum smear test results, the planned duration of treatment (6 months/9 months or more), and the implementation of B type or higher DOTS were included as independent variables. The significant medical risk factors were drug resistance to isoniazid or rifampicin, the use of immunosuppressive/anticancer drugs, and side effects, with odds ratios of 4.55, 4.68, and 2.68, respectively. Further, a planned duration of treatment of 9 months or more and the implementation of B type or higher DOTS were associated with odd ratios of 4.51 and 0.35, respectively.

[Conclusion] These results highlight the need to assess risk factors for discontinuing treatment and to adopt measures to overcome these factors, such as the type of DOTS being implemented, in each case.

Key words: Pulmonary tuberculosis, Risk factors for failed/defaulted, DOTS, Treatment outcome, Scheduled duration of treatment

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Case Report

A CASE OF PULMONARY NONTUBERCULOUS MYCOBACTERIOSIS
CAUSED BY *MYCOBACTERIUM BRANDERI*

Masami YAMAZOE and Ryuji TAKAHASHI

Abstract The patient was a 56-year-old man, who was found to have a cavitory lesion surrounded by small nodules in the left upper lobe (S¹⁺²) on the chest computed tomography (CT) scan prior to surgery for oropharyngeal cancer. Both sputum and bronchial lavage smears for acid-fast bacilli were positive, but a polymerase chain reaction for *Mycobacterium tuberculosis* and *Mycobacterium avium* complex failed to identify the isolates. *Mycobacterium* species were cultured in 4 weeks. *Mycobacterium branderi* was identified by determining the nucleic acid sequences of the 16S ribosomal RNA (16S rRNA) and RNA polymerase *B* (*rpoB*) genes. Chemotherapy and radiotherapy for esophageal cancer were started 5 months after the surgery for oropharyngeal cancer. The patient developed fever during the second round of chemotherapy. After chemotherapy and radiotherapy, the wall of the cavitory lesion thickened and a consolidation shadow was noted in the lower portion of the cavitory lesion on the chest CT scan. Combined therapy with clarithromycin, ciprofloxacin, and ethionamide

improved the clinical symptoms; further, the abnormal chest shadows disappeared, and the sputum smears and cultures for acid-fast bacilli were negative. Although, currently, there are no recommended therapeutic regimens for pulmonary nontuberculous mycobacteriosis caused by *M. branderi*, combined therapy including the drugs used in this case may have a beneficial effect on this disease.

Key words : *Mycobacterium branderi*, Nontuberculous mycobacteriosis, 16S rRNA gene analysis, *rpoB* gene analysis

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Case Report

A CASE OF RAPIDLY RUPTURED PERICOSTAL TUBERCULOSIS
FROM CALCIFIED PLEURAL MASS

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and Hiroshi MUKAE

Abstract A 25-year-old Chinese man with no medical history of pulmonary tuberculosis visited to a hospital for an evaluation of chest X-ray abnormal findings of routine health checkup. Chest computed tomography (CT) demonstrated chest wall mass surrounded by calcified walls in the right anterior chest wall. Eighteen months later, he found subcutaneous mass lesion in the right hypochondriac lesion, and this mass became painful in 5 days. Therefore he visited our hospital, and his chest CT showed low density mass with thickened calcified walls in the right anterior thoracic space, small amount of right pleural effusion and subcutaneous localized mass. A needle aspiration of the right subcutaneous mass demonstrated that the specimen were all negative for acid-fast bacilli smear, culture and PCR for *M.tuberculosis*. On the contrary, right pleural effusion showed positive for PCR for *M.tuberculosis*, in spite of negative results of acid-fast bacilli smear and culture. Pericostal tuberculosis that was progressed by the rupture of old calcified tuberculous empyema in the chest wall was

confirmed. Antituberculous chemotherapy, chest tube drainage for right subcutaneous mass and pleural decortication and empyema were successfully performed. Pericostal tuberculosis should be differentially considered when the calcified mass in the chest wall changes its shape.

Key words : Pericostal tuberculosis, Tuberculous empyema, Chest drainage

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Report and Information

TUBERCULOSIS ANNUAL REPORT 2012**— (1) Summary of Tuberculosis Notification Statistics and Foreign-born Tuberculosis Patients —**

Tuberculosis Surveillance Center (TSC), RIT, JATA

Abstract This brief summary report is the first of a series of reports based on the Tuberculosis Annual Report 2012. It includes a summary of tuberculosis (TB) statistics, and an overview of foreign-born TB patients notified and registered in 2012 in Japan.

A total of 21,283 patients with all forms of TB were notified in 2012, a rate of 16.7 per 100,000 population. Since 2000, the TB notification rates continued to decline until 2012. A total of 8,237 sputum-smear positive pulmonary TB patients were notified in 2012, a rate of 6.5 per 100,000 population. The number of patients with latent TB infection drastically increased from 4,930 in 2010 to 10,046 in 2011, and declined to 8,771 in 2012.

The number of foreign-born TB patients increased from 739 in 1998 to 1,069 in 2012. These patients accounted for 2.1% of all new TB patients in 1998, and this percentage increased to 5.2% in 2012. New foreign-born TB patients aged 20–29 years accounted for 37.0% of all new TB patients of the same age group in 2012. Among the foreign-born TB patients, more than half were from China (27.5%) and the Philippines (27.1%). In most cases, foreign-born TB patients entered Japan within 5 years, including 66.7% of those aged 10–19 years,

and 57.9% of those aged 20–29 years. These foreign-born TB patients were largely regular employees (28%) other than service workers, health care workers, and teachers, followed by unemployed persons (21%) and students (20%).

With an increase in the number of immigrants in Japan, the proportion of foreign-born TB patients is also expected to increase, particularly that of young adults and those from countries with a high TB burden. Comprehensive programs are required to ensure that these patients adhere to their anti-TB treatment.

Key words: Tuberculosis, Notification rate, Latent tuberculosis infection, Country of origin, Occupation

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