

—————Original Article—————

## CLINICAL FEATURES OF DIABETIC PATIENTS WITH PULMONARY TUBERCULOSIS ADMITTED TO A UNIVERSITY HOSPITAL

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**Abstract** Diabetes mellitus (DM) is a risk factor of tuberculosis (TB). We studied the clinical presentation of pulmonary TB among patients with DM in comparison with patients without DM who were admitted into the hospital of the University of the Ryukyus from 2006 to 2010. The clinical data were collected from medical records retrospectively. Ten cases (25%) of hospitalized patients with pulmonary TB had DM. The DM group showed lower Body Mass Index and higher incidence of chronic heart failure and chronic renal failure. The DM group also were more likely to have cavitory lesion, had longer period of hospitalization, and higher mortality. Their causes of deaths were mainly the co-morbidities and associated complications. Further studies are warranted in order to fully elucidate the relationships between pulmonary TB and DM.

**Key words :** Pulmonary tuberculosis, Diabetes mellitus, Clinical features, Hemodialysis, Seriously ill patient

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## Original Article

A STUDY OF GENETIC CHARACTERISTICS OF *MYCOBACTERIUM AVIUM* STRAINS FROM PATIENTS WITH PULMONARY *M. AVIUM* DISEASE IN JAPAN AND KOREA

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**Abstract** [Introduction] To determine the characteristics of *Mycobacterium avium* in Japan, we compared the genetic properties of *M. avium* isolated in different countries.

[Methods] A *Mycobacterium avium* tandem-repeat variable-number tandem-repeat (MATR-VNTR) analysis was performed using South Korean strains (n=119) and Japanese strains (n=76). In addition, we compared the frequencies of a new insertion sequence, IS*Mav6*.

[Results] A phylogenetic analysis identified different clusters between the two countries' strains. The prevalence of IS*Mav6* was significantly different between them, i.e., 75.0% in Japanese strains and 59.8% in the Korean ones (P<0.035). The frequency of strains with IS*Mav6* in the *Shine-Dalgarno* (SD) sequence of the *cfp29* gene that is involved in the interferon- $\gamma$  induction was also different, with stronger significance (Japan: 38.2%, Korea: 12.4%, P<0.001).

[Discussion] It is possible that *M. avium* strains prevalent in Japan and in Korea are genetically distinct. The analyses of the presence of IS*Mav6*, as well as the VNTR patterns of *M. avium* strains from many different countries would be a promising methodology in elucidating the causes of the recent increase in cases of pulmonary MAC diseases.

**Key words :** *Mycobacterium avium*, *Mycobacterium avium* tandem-repeat variable-number tandem-repeat (MATR-VNTR) analysis, IS*Mav6*, *cfp29*, Formed cluster

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Case Report

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## TWO CASES OF TUBERCULOUS UVEITIS

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**Abstract** Uveitis has many etiologies, but tuberculous uveitis is rare. We herein report 2 cases of uveitis due to tuberculosis infection. The first case was a 28-year-old man who was showed abnormal shadows in the chest radiographic examination performed in search of the etiology of uveitis. Computed tomography (CT) of the chest revealed hilar and mediastinal lymphadenopathy, small nodules, and consolidation, with a small cavity in the right upper lobe. An ulcerated nodule in the truncus intermedius and stenosis of the right middle lobe bronchus were found on bronchoscopy. The biopsy of the nodule in the truncus intermedius showed a small granuloma containing giant cells, consistent with mycobacterial infection. The culture of bronchial washings from the right upper lobe grew *Mycobacterium tuberculosis*. Diagnosis of pulmonary tuberculosis, tuberculous lymphadenitis, bronchial tuberculosis, and tuberculous uveitis was made. The patient was treated with antituberculosis drugs and his disease, including uveitis, improved.

The second case was a 36-year-old man who presented with right hemiparesis, dysarthria, and visual loss of the left eye. He was diagnosed with neuro-Sweet disease causing optic neuritis and visual loss. His chest CT showed a nodule with centrilobular opacities in the left lower lobe that suggested mycobacterial infection. PCR of the bronchial washing from the left lower lobe was positive for *M. tuberculosis* and the diagnosis of pulmonary tuberculosis was established. Treatment

with antituberculosis drugs and corticosteroids was initiated and his pulmonary lesion improved. However, bilateral tuberculous uveitis developed 15 days after initiation of the treatment. The uveitis gradually deteriorated thereafter despite continuation of antituberculosis therapy. Photocoagulation finally halted the disease progression.

In both patients with uveitis presented here, chest radiographs and CT scans were important in determining the etiology of the uveitis. It is difficult to find the etiology of uveitis, and general examinations including the lungs are helpful to pinpoint tuberculosis as the etiology of uveitis. As tuberculous uveitis is sometimes asymptomatic and resistant to treatment, ophthalmological examination is recommended for patients with pulmonary tuberculosis.

**Key words:** Pulmonary tuberculosis, Uveitis, Corticosteroids, Photocoagulation, Anti-tuberculosis drugs

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## NATIONWIDE SURVEY OF SUITABILITY OF TUBERCULOSIS WARDS FOR IN-HOSPITAL CARE OF TUBERCULOSIS PATIENTS

Kunihiko ITO, Yoko NAGATA, Minako URAKAWA, and Seiya KATO

**Abstract** [Purpose] To clarify the situation and suitability of tuberculosis wards for in-hospital tuberculosis care, with a view toward establishing a national standard for tuberculosis wards.

[Methods] Data were obtained by sending questionnaires to all 321 tuberculosis wards in Japan.

[Results] Of the hospitals to which questionnaires were sent, 69.3% returned their responses. In most of these hospitals, the total number of beds in one tuberculosis ward was either less than 20 or more than 40. In approximately two-thirds of the hospitals, tuberculosis wards were incorporated into another (non-tuberculosis) ward. In more than 70% of the hospitals, the mean hospital stay of tuberculosis patients exceeded 40 days. This relatively long hospital stay implies that amenities are a very important issue in tuberculosis wards; however, amenities were generally far from sufficient in most of the hospitals. Of all the tuberculosis beds, 18.2% were in single-occupant rooms and 19.4% had a sufficient floor area (more than 15 m<sup>2</sup>). Beds in single-occupant rooms with sufficient floor area, equipped with a toilet, bath or shower,

washstand, negative-pressure control, and HEPA filter in an air exhaust duct, comprised 2.4% of all tuberculosis beds.

[Conclusion] In spite of the relatively long hospital stays, amenities were generally less than adequate. The conditions in most tuberculosis wards were far below the presumptive recommended standards. When national standards for tuberculosis wards are established, these findings should be taken into consideration.

**Key words** : Tuberculosis, Tuberculosis ward, Model tuberculosis bed, Standard for tuberculosis wards, Amenity

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**Report and Information**

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**TUBERCULOSIS ANNUAL REPORT 2010****— (1) Summary of Tuberculosis Notification Statistics in 2010 —**

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**Abstract** Annual reports of tuberculosis (TB) statistics in Japan have been compiled mainly from the database of the nationwide computerized tuberculosis surveillance system, which has been in operation since 1987. This system has been revised several times. The latest revision was conducted in 2007, and much new information was added. This summary of tuberculosis notification statistics is the first report of a new series for the *Tuberculosis Annual Report 2010*.

The statistics are summarized as follows: The TB notification rate fell below 20 per 100,000 in 2007 and continued to decline, reaching 18.2 in 2010. However, there were still 23,261 TB patients newly notified in 2010. For sputum-smear positive pulmonary TB, the patient count was 9,019, with an incidence rate of 7.0 per 100,000 in 2010. Since June 2007, it has been compulsory to notify patients with latent TB infec-

tions (LTBI) requiring treatment; the number notified in 2010 was 4,930.

**Key words:** Tuberculosis, Incidence rate, Trend, Sex-age specific number and rate, Monthly report, Latent TB infection, Extra-pulmonary TB

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