

A CASE OF PULMONARY TUBERCULOSIS COMPLICATED WITH  
SPINAL CARIES IMPROVED BY THE NUTRITION MANAGEMENT OF  
PERCUTANEOUS ENDOSCOPIC GASTROSTOMY

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**Abstract** The case was 71-year-old woman. She was diagnosed as drug sensitive pulmonary tuberculosis (*bII3* by the GAKKAI classification) and the chemotherapy with INH, RFP, EB and PZA was started. Two months later back pain and hemiparesis of both lower limbs appeared and it was diagnosed as caries of the 10th thoracic vertebrae. Because she was confined to bed and impossible to eat orally, the parenteral-hyperalimentation therapy was started with the central vein catheter. However, nutritional state, pulmonary tuberculosis lesions and caries symptoms deteriorated. Then percutaneous endoscopic gastrostomy was performed and enteral nutrition was started. Since then nutritional state and tuberculosis lesions including caries improved gradually. It was estimated that the enteral nutrition brought about recovery of function and immunity of her digestive tract. For patients with advanced tuberculosis with poor nutritional state, the

enteral nutrition is a useful adjuvant therapy, and the gastrostoma is considered to be one of the effective administrative routes when oral ingestion is difficult.

**Key words:** Spinal caries, Pulmonary tuberculosis, Percutaneous endoscopic gastrostomy (PEG), Engastrostoma, Enteral nutrition, Nutrition support team (NST)

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**Case Report**

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**A CASE OF MILIARY TUBERCULOSIS AND ESOPHAGEAL PERFORATION  
SECONDARY TO TUBERCULOUS MEDIASTINAL LYMPHADENITIS**

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**Abstract** An 80-year-old woman was admitted to a local hospital following transient disturbance of consciousness after a fall. High intermittent fever developed after hospitalization and she was diagnosed as having mediastinal abscess with esophageal perforation. She underwent mediastinal drainage and surgical repair of the esophagus. Acid-fast bacilli were detected in her sputum. Chest CT scanning showed a diffuse granular shadow. Then she was diagnosed as having miliary tuberculosis and treated with combination of INH, RFP, EB, and PZA. However, five days after treatment was initiated, fever and skin eruption appeared and treatment has to be stopped after one month. Then she was referred to our hospital. We gradually increased the dosages of INH and RFP, which resulted in pyrexia. Therefore, we changed EB to SM. Fever subsided and we were able to administer the full dose of drugs from the beginning of January 2007. Thereafter, the patient improved gradually. However, she died in February 2007. At

autopsy, we identified tuberculous mediastinal lymphadenitis, inflammatory granuloma under the esophageal mucosa and miliary tuberculosis. We report this case as a rare case of miliary tuberculosis and esophageal perforation secondary to tuberculous mediastinal lymphadenitis.

**Key words** : Esophagomediastinal fistula, Lymphadenitis, Miliary tuberculosis

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## RESEARCH AGENDA OF INTERFERON-GAMMA RELEASE ASSAYS

Kazue HIGUCHI and Nobuyuki HARADA

**Abstract** Recently, new diagnostic tests for tuberculosis infection that are more specific than tuberculin skin tests have been developed and have become commercially available. These tests determine interferon-gamma production after stimulation with *M. tuberculosis*-specific antigens, ESAT-6 and CFP-10, and are named Interferon-Gamma Release Assays (IGRA). Currently, two IGRA formats are available. One is QuantiFERON®TB-2G (QFT-2G, called QuantiFERON®TB Gold outside Japan), which uses the whole blood and has been approved as a diagnostic test for tuberculosis infection in Japan. The use of QFT-2G was recommended for contact investigations in the revised guidelines in 2006. The other format of IGRA is T-SPOT®.TB (T-SPOT), which uses peripheral blood mononuclear cells. T-SPOT has not yet been approved in Japan. IGRA was developed just recently, so there are many research questions to be addressed. In 2007, Pai et al. reported a comprehensive research agenda on

IGRA<sup>1)</sup>. We introduced a review of Pai et al. in Japanese with reference to our published reports. The references in the review of Pai et al. appear as they are, and our new references are numbered with Roman numerals.

**Key words**: Diagnostics for tuberculosis infection, Tuberculin skin test, Interferon-Gamma Release Assays, QuantiFERON®TB-2G, T-SPOT®.TB, Research questions

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## DEVELOPMENT AND PERSPECTIVES OF COMMUNITY DOTS

Chairpersons: <sup>1</sup>Tomoyo NARITA and <sup>2</sup>Noriko KOBAYASHI

**Abstract** The Japanese version of DOTS seems to have established itself. However, there is criticism that the primary purpose of DOTS expansion has often been supplanted by pressure to meet a quota. In this symposium, we returned to the starting point of DOTS, i.e., seeking a total cure of TB patients, and rededicated ourselves to our ultimate goal—TB elimination. In order to promote community DOTS more effectively, we should endeavor to build a community DOTS network with unified related information systems backed by government commitments. In so doing, we must continue to provide patients with support while respecting their rights and emphasizing their improved quality of life.

1. Achievements and challenges of DOTS conference: Yukiko SAITO (Fukujuji Hospital, JATA)

We conduct face-to-face DOTS for all patients from the time of their admission until the time they are discharged. The DOTS conference is a place where hospitals and public health centers can share patient information, linking hospital DOTS with community DOTS. This meeting is an indispensable process in order to prevent patients' defaulting and irregular treatment. The ultimate goal of DOTS is treatment completion of tuberculosis patients, and in order to achieve that goal, a partnership among clinical, public health, and social services is crucial. The DOTS conference provides an opportunity for several public health centers to come together and share information. Conducting hospital DOTS and the DOTS conference in parallel facilitates providing comprehensive patient support. Continuing to hold regular DOTS conferences is both a sign of achievement of DOTS and a challenge for the

future.

2. Achievements and challenges of cohort meeting in the TB control program in Kobe: Noriko TANAKA (Kobe City Public Health Office)

The TB control program of Kobe City is based on the Second Five-Year TB strategy targeting the reduction of the TB incidence rate. It has five policy pillars, prevention and IEC, early case-finding, standardized treatment, quality patient support, and research, which are implemented in twenty-four related activities including the cohort meeting. This meeting is held regularly and contributes greatly to the comprehensive patient care and support for their completion of regular treatment.

3. Development of TB clinical path in hospital-community health partnership— from public health centers' viewpoint: Yui ASO (Nishi Tama Public Health Center), Tomoyo NARITA (Bureau of Social Welfare and Public Health Tokyo Metropolitan Government)

In order to lead all TB patients to treatment success, public health centers of the Tokyo Metropolitan Government and Tokyo Metropolitan Fuchu Hospital developed a TB clinical path (TBCP) hospital-community health partnership with the cooperation of the local medical association, the pharmacists' association, and organizations for home recuperation of elderly people. In a questionnaire, all the patients who used TBCP answered that they could take medicine themselves. It was also found that over 50% of hospital doctors and nurses, pharmacists, and public health nurses who were involved in

TBCP were satisfied with good cooperation with other partners and patients' positive attitude toward their treatment. These trials revealed that the important keys to the effectiveness of TBCP include a) the shared informed consent by all the partners of the TBCP, b) timely sharing of information about patients, c) standardization of treatment and care for patients, and d) promotion of cooperation with other related players.

4. Development of TB clinical path in hospital-community health partnership—from a hospital's viewpoint: Akira FUJITA (Department of Pulmonary Medicine Tokyo Metropolitan Fuchu Hospital)

Health Centers of the Tokyo Metropolitan Government, Tokyo Metropolitan Fuchu Hospital, and other organizations developed a tuberculosis clinical path in a hospital-community health partnership (TBCP). Preliminarily, we applied TBCP for 23 patients with smear-positive tuberculosis. Information-sharing by TBCP booklets between patients and health care providers will improve patients' satisfaction. The instruction for phone- and/or fax-based communication enabled health-care providers to respond quickly in the event of variance. TBCP promoted the standardization of examinations and the actions to be taken in response to variances, as listed in the clinical path. The variance of controllable adverse effects due to anti-tuberculosis drugs was most common, having occurred 12 times.

5. Attempts of DOTS conference in the outpatient department: Yoko NAGATA (Research Institute of Tuberculosis, JATA), Kayoko MIZUKAMI, Satomi OKAWA (Daiichi Dispensary, JATA)

The outpatient DOTS conference is a place where public health centers and clinics can share information on treatment and adherence support. Patient support under community DOTS targeting outpatients who do not need hospitalization requires closer cooperation between public health centers and related organizations now more than ever before. From the point of view of continuing treatment, it is thought necessary to focus on young Japanese patients, not just foreign-born patients.

**Key words** : Tuberculosis control, DOTS, Clinical path, DOTS conference, Cohort meeting

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## The 83rd Annual Meeting Mini-Symposium

THE CURRENT AND FUTURE SITUATIONS OF  
TB/HIV (CO-INFECTION OF TUBERCULOSIS AND HIV) IN JAPANChairpersons: <sup>1</sup>Norio YAMADA and <sup>2</sup>Hideaki NAGAI

**Abstract** While HIV epidemic is still low in Japan, reported HIV infected persons and AIDS cases have been increasing and the tuberculosis epidemiologic situation in Japan is categorized as a intermediate level. Therefore it is necessary to understand the current situations of TB/HIV and identify issues to be addressed for better understanding of the epidemiologic situation of TB/HIV co-infection and improvement of disease control programmes and clinical practice to prevent and treat the TB/HIV.

In the symposium, four panelists presented the current situations of TB/HIV in Japan from the views of epidemiology, clinical characteristic, treatment, prognosis and prevention and discussed the issues of them.

2. Clinical characteristics of patients with HIV and tuberculosis: Hideaki NAGAI (Department of Pulmonary Medicine, National Hospital Organization Tokyo National Hospital)

The number of cases with HIV and tuberculosis will increase because of the increment of HIV-infected patients and high morbidity rate of tuberculosis in Japan. It is difficult to diagnose tuberculosis in HIV-infected patients because of atypical chest X-ray, atypical clinical characteristics, extra-pulmonary tuberculosis. Side effects, drug-drug interaction, and immune reconstruction syndrome must be considered when the concurrent treatment to HIV and tuberculosis is administered. It is unclear when to start antiretroviral therapy after the initiation of tuberculosis treatment. Careful consideration is needed to initiate antiretroviral therapy.

3. The situation of early detection, the prevention, the treatment and the problem of tuberculosis patients with Human Immunodeficiency Virus infection: Yuka SASAKI (Department of Thoracic Disease, National Hospital Organization Chiba-East National Hospital)

We investigated the situation of early detection, the prevention, the treatment and the problem of tuberculosis patients with Human Immunodeficiency Virus infection by the questionnaires. In Japan, many of national organization hospitals with division of thoracic disease did the examination for the patients who were contacted with infectious tuberculosis.

Many of physicians expected in the QFT-2G to detect the latent tuberculosis infection in HIV/AIDS patients. The prognosis of the patients with tuberculosis and AIDS has been improving gradually. In future, the specialists of tuberculosis treatment would detect HIV infected patients in tuberculosis patients as possibly early, would do the treatment for the latent tuberculosis infection, and most hospitals would be able to do the AIDS and tuberculosis treatment.

4. Issues in estimating current and future TB/HIV situation in Japan: Norio YAMADA (Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association)

The information on HIV seroprevalence of newly diagnosed tuberculosis cases is limited. We carried out cross-sectional seroprevalence survey of hospitalized TB cases. Thirty-three out of 282 hospitals returned the results by the end of March 2008. There are 222 eligible patients at the 33 hospitals. Only one of them is HIV-infected. The prevalence of HIV co-infection adjusted for distribution of notified tuberculosis cases is 0.13%. Taking into account other estimates based on the previously reported studies and AIDS surveillance, it is thought that recent prevalence of HIV co-infection among newly diagnosed tuberculosis cases is at least 0.1% in Japan. Considering low participation rate in the seroprevalence survey and the low epidemic level of HIV in Japan, it might be sensible to establish sentinel surveillance as well as improve the reporting of HIV status included in the tuberculosis surveillance to monitor TB/HIV situation in Japan.

**Key words:** HIV, Tuberculosis, Co-infection, Latent tuberculosis infection, Anti-retroviral treatment, Epidemiology

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