

## TRENDS AND CLINICAL CHARACTERISTICS OF FOREIGN-BORN TUBERCULOSIS PATIENTS

<sup>1,2</sup>Junji OTSUKA, <sup>1,3</sup>Yoritake SAKODA, <sup>1,2</sup>Kunihiro KUDO, <sup>1</sup>Toyoshi YANAGIHARA,  
<sup>1</sup>Satoshi IKEGAME, <sup>1</sup>Kentaro TANAKA, <sup>1</sup>Takako NAKANO, <sup>1</sup>Michihiro YOSHIMI,  
<sup>1</sup>Yoshiaki TAO, and <sup>1</sup>Shohei TAKATA

**Abstract** [Purpose] In the present study, we clarified the current problems of tuberculosis (TB) control in foreign-born patients by analyzing the trend and clinical characteristics of such patients in our hospital and using that data to create a plan to manage the expected future increase in foreign-born TB patients.

[Subjects] We targeted foreign-born TB patients who received medical care in our hospital from January 2011 to December 2015.

[Method] We examined their characteristics, such as birth country, occupation, period from entry to diagnosis, image findings, and bacteria elimination status, according to medical records.

[Results] The number of foreign-born TB patients was 42. The median age was 24 (range: 19–70) years old, and 34 (81.0%) were in their twenties. Among them, 28 (66.7%) were international students. The most common opportunity for diagnosis was a checkup examination, by which 23 (54.8%) were diagnosed. Fifteen patients (35.7%) had cavities on a chest X-ray, and 22 (52.4%) patients tested positive for mycobacterium in a smear of sputum. The birth country of 18 patients was China (42.9%), and that of 17 patients was Nepal (40.5%). The number of patients from Nepal has increased. Twenty-two (52.4%) patients were diagnosed within one year of entry. There were some serial cases, such

as residents of the same house and students at the same school, and there were cases in which exogenous infections were suspected after entering Japan.

[Conclusion] The number of foreign-born TB patients has increased. Immediate medical examination after entering Japan is important for tuberculosis control among foreigners, and it is also important to perform regular checkups throughout their stay in Japan in order to detect tuberculosis onset not only from previously infected but also newly infected after entering Japan.

**Key words:** Tuberculosis, Foreign nationals, International student, Language school, Health examination

<sup>1</sup>Department of Respiratory Medicine, National Hospital Organization Fukuoka Higashi Medical Center; <sup>2</sup>Department of Respiratory Medicine, National Hospital Organization Fukuoka National Hospital; <sup>3</sup>Department of Respiratory Medicine, St. Mary's Hospital

Correspondence to: Junji Otsuka, National Hospital Organization Fukuoka National Hospital, 4-39-1, Yakatabaru, Minami-ku, Fukuoka-shi, Fukuoka 811-1394 Japan.  
(E-mail: ootsuka.junji.dx@mail.hosp.go.jp)

## NATIONWIDE SURVEY OF ANTI-TUBERCULOSIS DRUG RESISTANCE IN JAPAN: 2012–2013

Tuberculosis Research Committee (RYOKEN)

**Abstract** [Objective] To clarify the anti-tuberculosis drug resistance in Japan in 2012–2013 through 15th nationwide survey by Tuberculosis Research Committee (Ryoken).

[Method] A total of 8,681 *Mycobacterium tuberculosis* drug susceptibility testing (DST) data to isoniazid (INH), rifampicin (RFP), streptomycin (SM) and ethambutol (EB) was collected from 49 medical facilities in Ryoken consortium with confirmed quality through external quality assurance. Accordingly, we could link a total of 2,560 patients' clinical information with DST results utilising a part of National Epidemiological Surveillance of Infectious Diseases (NESID) system, and the drug susceptibilities were analysed according to the patients' treatment history, nationality, comorbidities and other factors.

[Results] The combined/total frequencies of drug-resistant *M.tuberculosis* isolates were as follows; INH, 5.3% (95% CI, 4.8–5.8); RFP, 1.6% (95% CI, 1.3–1.8); SM, 7.2% (95% CI, 6.6–7.7); and EB, 1.9% (95% CI, 1.6–2.2). As to the linked data (n=2,560), the frequencies of drug-resistant isolates from new cases were as follows; INH, 4.2% (95% CI, 3.4–5.0); RFP, 1.3% (95% CI, 0.9–1.8), SM, 7.1% (95% CI, 6.1–8.2); and EB, 1.7% (95% CI, 1.2–2.3). The frequencies of drug-resistant isolates from previously treated cases were as follows; INH, 17.5% (95% CI, 11.7–25.3); RFP, 10.0% (95% CI, 5.8–16.7), SM, 15.0% (95% CI, 9.7–22.5); and EB, 8.3% (95% CI, 4.6–14.7). The frequencies of multidrug-resistant *M. tuberculosis* isolates from new and previously treated cases

were 0.9% (95% CI, 0.6–1.4%) and 10.0% (95% CI, 5.8–16.7%), respectively. A significant differences were observed in INH, RFP and SM resistances in new cases between domestic and foreign born patients.

[Discussion] In the current study, INH showed a statistically significant increase in combined and new resistances compared to those of 14th survey in 2007, as other drug resistances showed increasing trends. The foreign-born new tuberculosis patients showed high drug resistances, compared to domestic patients. However, as to the analyses of 2,560 DST data with clinical information, the effective links of these data was limited to approximately 1/3 of total DST data collected, and the origins of linked data were mainly from Kanto and Kinki area. So the clinical analyses of the laboratory data will be representing some metropolitan area but not a whole country. It was a major limitation of this study, but the data will be useful to consider updated increasing trend of tuberculosis drug resistances in Japan.

**Key words:** *Mycobacterium tuberculosis*, Drug susceptibility testing, External quality assessment, Drug resistance

Correspondence to: Satoshi Mitarai, Department of Mycobacterium Reference and Research, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, 3-1-24, Matsuyama, Kiyose-shi, Tokyo 204-8533 Japan.  
(E-mail: mitarai@jata.or.jp)

---

**Case Report**

---

**A CASE OF HETEROCHRONIC PYOTHORAX-ASSOCIATED LYMPHOMA  
WITH PAST HISTORY OF TUBERCULOUS PYOTHORAX**

Daisuke JINGU, Takehiro YAJIMA, Satoshi UBUKATA, Makoto SHOJI,  
Kazuhisa KONISHI, and Hiroshi TAKAHASHI

**Abstract** [Background] This is a report of pyothorax-associated lymphoma (PAL), a diffuse large B-cell lymphoma (DLBCL) that developed in the pleural cavity after more than a 20-year history of pyothorax resulting from artificial pneumothorax treatment for pulmonary tuberculosis or tuberculous pleuritis. The clinical course of PAL is not clear.

[Case] A 78-year-old man with right chest pain and bloody sputum entered our hospital. He had past history of tuberculosis pleuritis at age 18, and resection of a right chest wall tumor at age 61. Chest computerized tomography (CT) on admission revealed a tumor of the right chest wall. A biopsy was performed, and was diagnosed as DLBCL, which we diagnosed as PAL. In addition, we reexamined the specimen collected at age 61, and identified the same histopathological features in the new specimen.

[Conclusions] This is the first case report of heterochronic PAL, from which we could observe the process of PAL development for a 17-year period.

**Key words:** Pyothorax-associated lymphoma: PAL, Tuberculosis, Diffuse large B-cell lymphoma: DLBCL, Epstein-Barr virus: EBV, Malignant lymphoma, Heterochronic

Department of Respiratory Medicine, Saka General Hospital

Correspondence to: Daisuke Jingu, Department of Respiratory Medicine, Saka General Hospital, 16-5, Nishiki-cho, Shiogama-shi, Miyagi 985-8506 Japan.

(E-mail: d.jinguuu@gmail.com)