

Original Article

PULMONARY NONTUBERCULOUS MYCOBACTERIOSIS
IN PATIENTS WITH LUNG CANCER

¹Atsuhisa TAMURA, ²Akira HEBISAWA, ¹Yuzo SAGARA, ¹Junko SUZUKI,
¹Kimihiko MASUDA, ¹Motoo BABA, ¹Hideaki NAGAI, ¹Shinobu AKAGAWA,
¹Naohiro NAGAYAMA, ¹Yoshiko KAWABE, ¹Kazuko MACHIDA, ¹Atsuyuki KURASHIMA,
¹Hikotaro KOMATSU, and ¹Hideki YOTSUMOTO

Abstract [Objectives] To clarify the clinical features of the coexisting lung cancer and nontuberculous mycobacteriosis of the lung.

[Materials and methods] We analyzed clinical data on 11 admitted cases of coexisting lung cancer and pulmonary nontuberculous mycobacteriosis at National Organization Tokyo Hospital during the period from 1997 to 2002.

[Results] There were 10 men and 1 woman, with a mean age of 66 years. Five of 11 patients had underlying pulmonary disorders, such as healed tuberculosis and lung cyst. Histological types of lung cancer were squamous cell carcinoma in 4, adenocarcinoma and small cell carcinoma in 3 each, and 8 out of 11 cases were in stages III to IV. We classified the 11 cases into 2 groups: (1) lung cancer concurrently detected with mycobacteriosis (8 cases) and (2) lung cancer sequentially detected during the follow-up of mycobacteriosis (3 cases). Lung cancers in the latter group were in relatively early stages and all patients of this group received resection of the cancer, while most of lung cancers in the concurrent group were in far-advanced, and palliative and/or supportive treatment for lung cancer were frequently selected. The strains of mycobacteria were as follows: *M. avium* complex (6 cases) and *M. kansasii* (5 cases). The incidence of lung cancer among patients with nontuberculous mycobacteriosis was 2.5 percent (2 percent of *M. avium* complex diseases patients and 8.2 percent of *M. kansasii* disease patients), while the incidence of

nontuberculous mycobacteriosis in untreated lung cancer patients was 1.4 percent. Analysis of anatomical relationship between lung cancer and non-tuberculous mycobacteriosis revealed that the two diseases located in the same lung in 8 cases, and also in the same lobe in 4 out of the 8 cases. Outcome of treatment for nontuberculous mycobacteriosis was good especially in patients with *M. kansasii* disease, and it seemed that coexisting nontuberculous mycobacteriosis did not influence on the prognosis of lung cancer patients.

[Conclusion] In the management of lung cancer, physicians should consider the possibility of coexisting pulmonary nontuberculous mycobacteriosis, as well as coexisting pulmonary tuberculosis.

Key words: Lung cancer, Pulmonary nontuberculous mycobacteriosis, Coexistence of lung cancer and nontuberculous mycobacteriosis, Clinical findings

Department of ¹Respiratory Diseases, and ²Pathology, National Organization Tokyo Hospital

Correspondence to: Atsuhisa Tamura, Department of Respiratory Diseases, National Organization Tokyo Hospital, 3-1-1, Takeoka, Kiyose-shi, Tokyo 204-8585 Japan.
(E-mail: tamura@tokyo.hosp.go.jp)

CURRENT STATUS OF THE CRITERIA FOR DISCHARGING PATIENTS WITH PULMONARY TUBERCULOSIS

—Results of Questionnaire Survey on the Criteria for Discharging Patients from Tuberculosis Wards of the Hospitals in Kanto Area—

Naoshi YANAGISAWA, Hisato SHIMADA, Motofumi RINN, Kazumi NISHIO,
Hirotooshi AOKI, Masamitsu TAKAHASHI

Abstract [Introduction] Emphasis in treating patients with infectious pulmonary tuberculosis has come to be laid on the execution of reliable standard chemotherapy. As a result, hospitalization for a prolonged period has become unnecessary any more. However, few attempts have been made so far on the determination of discharging criteria.

[Methods] We performed a questionnaire survey to hospitals with wards for tuberculosis in Kanto area and asked questions on the current status of discharging criteria.

[Results] The effective response rate to the survey was 63.0%. Sputum smear examination carried out mainly by Ziehl-Neelsen method and fluorescence method in 17.2% and 72.4% of the hospitals, respectively. Sputum culture examination was carried out using mainly Ogawa medium and a liquid medium in 62.1% and 27.6% of the hospitals, respectively. Discharging criteria were standardized in 79.3% of hospitals. Negative sputum smear was used as the criterion for determining discharge in 11 sets of criteria. Negative sputum culture was used as the criterion for determining discharge in 17 sets

of criteria. In the remaining one hospital, patients were to be discharged after 2-month treatment. There was no consistency in the procedure and the frequency of sputum examinations, how many negative results are needed to confirm negative status and the criteria for judgment.

[Conclusion] These results suggest that further evaluation must be made on the treatment outcome at each hospital, and the standard discharging criteria should be worked out taking into account the capacity of each hospital and the care situation of local community.

Key words : Pulmonary tuberculosis, Discharging criteria, Questionnaire survey

Division of Respiratory Disease, Kawasaki City Ida Hospital

Correspondence to : Naoshi Yanagisawa, Division of Respiratory Disease, Kawasaki City Ida Hospital, 2-27-1, Ida, Nakahara-ku, Kawasaki-shi, Kanagawa 211-0035 Japan.

Original Article

TUBERCULIN SKIN TEST REACTION OF HEALTH-CARE WORKERS
EXPOSED TO TUBERCULOSIS INFECTION

Eri TSUKISHIMA, Yuu MITSUHASHI, and Aiko TAKASE

Abstract [Objective] The objective of this study was to describe tuberculin skin test (TST) of health-care workers who had had contacts with a tuberculosis patient and to investigate whether the distributions of the size of TST were different by sputum-smear status of index cases and medical procedures done to the patient.

[Subjects] Health-care workers who were exposed to tuberculosis infection through contact with patients before diagnosis of tuberculosis were included in this study. Index cases had pulmonary tuberculosis with positive sputum smear and were registered at Sapporo Public Health Office from April 2001 to March 2002. Subjects without past history of BCG (bacilli Calmette-Guerin) vaccination were excluded, and final study subjects were 415 (52 male and 363 female, mean age 29.1 years).

[Method] Characteristics of index cases and contact status were obtained from the registration cards of tuberculosis cases at Sapporo Public Health Office. Subjects were divided into two or more categories by the characteristics of index cases and the contact status. Distributions of TST of the subjects in different categories were compared.

[Results] Contacts with patients received tracheal aspiration showed significantly larger TST reaction than contacts with patients not receiving tracheal aspiration. Among con-

tacts with patients showing minimum to moderately positive sputum-smear, TST reaction was significantly larger in contacts with patients received tracheal aspiration (mean diameter of erythema 35.8 mm) than those not receiving tracheal aspiration (24.8 mm). In contrast, among contacts with patients of severely positive sputum-smear, TST reaction was not significantly different between contacts of patients received tracheal aspiration (35.3 mm) and not receiving tracheal aspiration (33.1 mm).

[Conclusion] TST was significantly stronger in contacts with a tuberculosis patient received tracheal aspiration, which indicates medical procedures such as tracheal aspiration increases the risk of tuberculosis infection in health-care workers.

Key words : Tuberculosis, Nosocomial transmission, Health-care worker, Tuberculin skin test, Tracheal aspiration

Sapporo Public Health Office

Correspondence to : Eri Tsukishima, Sapporo Public Health Office, Nishi 19, Odori, Chuo-ku, Sapporo-shi, Hokkaido 060-0042 Japan. (E-mail: eri.tsukishima@city.sapporo.jp)

————— Case Report —————

MULTI-DRUG RESISTANT LUNG TUBERCULOSIS DUE TO
DOUBLE INFECTION OF MDR STRAIN

¹Kunihiko ITO, ²Mitsuyoshi TAKAHASHI, ¹Takashi YOSHIYAMA,
¹Masako WADA, and ³Hideo OGATA

Abstract The case is 47-year-old, homeless man. He was diagnosed as cavitary, sputum smear positive pan-sensitive lung tuberculosis, and admitted to TB ward of our hospital. At the age of 4-year-old he had tuberculous hilar lymphadenopathy and took medicine. He had no other associated disease, and HIV test was negative. He started standard chemotherapy and 2 months later his sputum culture was converted to negative. His adherence to medicine was thought to be good. But about 2 weeks after the sputum conversion, his sputum culture was re-converted to positive for *Mycobacterium tuberculosis*. Thereafter, during and after the completion of standard chemotherapy, his sputum culture had been intermittently positive. The drug sensitivity tests of the strain after re-conversion showed multi-drug resistance. RFLP analysis revealed that the strain before conversion was totally different strain from the strain after re-conversion to positive. The case was considered to be caused by the double infection of MDR

strain of *Mycobacterium tuberculosis* during the course of treatment for tuberculosis due to a sensitive strain of *Mycobacterium tuberculosis*.

Key words : Isolation, Multi-drug resistant tuberculosis, Exogenous reinfection, Double-strain infection, RFLP

¹Department of Research, ²Division of Molecular Epidemiology, Mycobacterium Reference Center, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association (JATA), ³Department of Respiratory Medicine, Fukujuji Hospital, JATA

Correspondence to: Kunihiko Ito, Department of Research, Research Institute of Tuberculosis, JATA, 3-1-24, Matsuyama, Kiyose-shi, Tokyo 204-8533 Japan.
(E-mail: ito@jata.or.jp)

CT IMAGING FINDINGS IN CONGENITAL TUBERCULOSIS, PART I:
USEFULNESS OF PERIportal HYPODENSITY
IN THE DIAGNOSIS OF CONGENITAL TUBERCULOSIS

¹Shinya KONDO, ¹Masaki ITO, and ²Gen NISHIMURA

Abstract We treated three newborns and early infants with congenital tuberculosis between 1996 and 2001. We reported imaging presentations of the three cases born in and after 1996 when new CT equipment (CT-HAS-SGS, GE-Yokokawa, Tokyo) was introduced in our institute. These three cases of congenital tuberculosis showed periportal hypodensity, in addition to pulmonary infiltrate, mediastinal and abdominal lymphadenopathy on CT images. Early diagnosis of congenital tuberculosis is urgently needed, however, it is very difficult. Our findings suggested that clinical suspicion supplemented by careful imaging examinations may facilitate the early diagnosis of congenital tuberculosis, and the detection of periportal hypodensity may offer a new additive diagnos-

tic option to congenital tuberculosis.

Key words : Congenital tuberculosis, CT imaging, Periportal hypodensity

Division of ¹Respiratory Disease, and ²Radiology, Tokyo Metropolitan Children's Hospital

Correspondence to: Shinya Kondo, Division of Respiratory Disease, Tokyo Metropolitan Children's Hospital, 1-3-1, Umezono, Kiyose-shi, Tokyo 204-0024 Japan.
(E-mail: shykondo@chp-kiyose-tokyo.jp)