

Original Article

SOCIOECONOMIC FACTORS FOR TUBERCULOSIS IN TOKYO, JAPAN

— Unemployment, Overcrowding, Poverty, and Migrants —

Hiroshi NISHIURA

Abstract We investigated selected socioeconomic variables for incidence of tuberculosis and its rate of changes that might be relevant for the design of appropriate prevention and control programs. Retrospective ecological analysis was done to examine the association between eight socioeconomic measures from the 1992 census and both the average rate and the rate of change of standardized annual notification rates for tuberculosis from 1988 to 1997 for each of the 23 wards in Tokyo. Multivariate analysis identified the proportion of households with livelihood aid ($p < 0.001$), number of public bath per 100,000 person ($p < 0.001$), population density ($p = 0.012$), and proportion of households below standard house space ($p = 0.024$) as variables positively associated with average tuberculosis notification rates. The rate of change was negatively correlated with three variables; proportion of owner occupied households ($p = 0.001$), number of tatami (living space) per capita ($p = 0.021$), proportion of households

with livelihood aid ($p = 0.038$). The results showed there were certain clear socioeconomic risk factors in tuberculosis transmission, and that it might be possible to investigate the relation between the rate of change and each socioeconomic risk factor effectively with this method.

Key words: Tuberculosis, Socioeconomic factor, Poverty, Ecological study, Tokyo

Department of International Affairs and Tropical Medicine,
Tokyo Women's Medical University

Correspondence to: Hiroshi Nishiura, Department of International Affairs and Tropical Medicine, Tokyo Women's Medical University, 8-1, Kawada-cho, Shinjuku-ku, Tokyo 162-8666 Japan. (E-mail: Nishiurah@aol.com)

Original Article

A COMPARATIVE STUDY ON SEVERITY OF TUBERCULOSIS CASES BETWEEN THOSE FOUND BY PERIODICAL CHEST X-RAY EXAMINATION AND THOSE FOUND BY SYMPTOMATIC VISIT TO OPD IN JAPAN

¹Takashi YOSHIYAMA, ¹Jinichi KATO, ¹Masako WADA, ²Hideo OGATA, and ¹Kunihiko ITO

Abstract Background: Japanese national tuberculosis control program (NTP) has included indiscriminate chest X-ray examination for adult population.

Methods: A comparative study on the severity of pulmonary tuberculosis cases in a hospital in Tokyo by the mode of detection (between cases found by periodical check and cases found by symptomatic visit) and previous history of X-ray examination (among cases detected by periodical check, cases detected by symptomatic visit but with previous history of periodical check and cases without history of chest X-ray examination during the past 3 years).

Results: The comparison between patients found by symptomatic visit with and without previous history of periodical check showed that there was no difference in the grade of sputum smear positivity at the time of diagnosis but that those without previous history of periodical check were more serious as to chest X-ray findings. The comparison between patients found by symptomatic visit with previous history of periodical check and those detected by the periodical check showed that the grade of smear positivity was less

among those found by the periodical check but no difference as to chest X-ray findings, however, comparing cases of these two categories in the age group of 40–59, those detected by the periodical check were less serious as to both X-ray findings and smear result. There were 21 persons who were indicated requiring further investigation but actually were not examined. The severity of tuberculosis among these 21 persons were more serious as to the grade of smear positivity than those detected by periodical X-ray examination.

Key words: Tuberculosis, Active case finding, Early detection

¹Department of Research, Research Institute of Tuberculosis,

²Fukujuji Hospital, Japan Anti-Tuberculosis Association

Correspondence to: Takashi Yoshiyama, Department of Research, Research Institute of Tuberculosis, 3-1-24, Matsuyama, Kiyose-shi, Tokyo 204-8533 Japan.

(E-mail: yoshiyama@jata.or.jp)

Original Article

FACTORS RELATED TO EARLY CASE DETECTION OF TUBERCULOSIS
IN HEALTH SERVICE FACILITIES FOR THE ELDERLY

Masako OHMORI, Masako WADA, Takashi YOSHIYAMA, and Kazuhiro UCHIMURA

Abstract The proportion of newly notified tuberculosis cases aged over 65 years has been rising and reached 49.2% in 2001. For this reason, the Ministry of Health, Labor and Welfare recommended in 1999 to give preventive therapy for tuberculosis to elderly persons with fibrous lesions on chest X-ray. However, our research pointed out many problems in the matter and low public health benefits of preventive therapy.

At present, early case detection and treatment are considered to be the most effective tuberculosis control measures for the elderly in Japan. For the purpose of developing the most effective case finding method for the elderly, we investigated various aspects of tuberculosis in health service facilities for the elderly. Health service facilities for the elderly were established since 1988 to provide nursing care and rehabilitation services to enable elderly persons who no longer need hospitalized care to return home.

Questionnaires were mailed to 358 health service facilities for the elderly in a metropolitan city and 4 prefectures. One hundred and sixty-nine facilities (47.2%) responded. Among them, 61 (36.1%) are attached to hospitals, 21 (12.4%) are attached to clinics, and 87 (51.5%) are not attached to any medical facilities. The median duration from the opening of the facility was 3.5 years, and 113 (66.9%) facilities were founded within 5 years. The mean age was 83.2 years for facility-care users and 79.6 years for day-care users. The mean duration of care was 7 months for facility-care users and 13 months for day-care users.

Pre-admission chest X-ray was conducted for facility-care users in 72 (42.6%) facilities, and for day-care users in 40 (23.7%) facilities. Comparing with 84.3% (Shishido, 2002) in special nursing homes for the elderly, the rate was significantly lower in health service facilities for the elderly. Periodic TB screening during care utilization was also less frequently carried out in health service facilities for the elderly (45.6% for facility-care users and 15.4% day-care users). A possible reason is that special nursing homes for the elderly are mandated to conduct periodic TB screening as provided by the TB Control Law, while health service facilities for the elderly are not under such provision. Periodic TB screening

for employees was carried out in 160 (94.7%) facilities.

Respiratory symptoms were less frequently checked compared with anorexia or lassitude. Thirty-two facilities (18.9%) checked the facility-care user everyday for respiratory symptoms using a check-list, while 114 facilities (67.5%) checked only for anorexia or lassitude ($p < 0.01$).

When persistent respiratory symptoms were observed in facility-care users, 157 (93.5%) facilities referred them to hospitals with letters explaining their symptoms and 108 (63.9%) facilities requested chest X-ray and sputum tests. However, for day-care users, most facilities only advised them to visit medical institution without any letter of referral.

Within 5 years, 52 (30.8%) facilities reported 65 TB cases among facility users and 5 (3.0%) facilities reported 5 TB cases among employees. Based on person-year, case rate was calculated to be 104.6 per 100,000 among elderly facility users. This rate was compared with that of people aged 75 years over in the community. Rate ratio was 1.04 (95% CI: 0.82–1.34). The risk of developing tuberculosis was slightly higher in the elderly facility users, but the risk was not statistically significant. This result may be influenced by the low response rate from facilities with tuberculosis cases.

We conclude that it is very important to detect TB cases at the early stage of disease not only to protect the elderly from tuberculosis death but also to prevent outbreak of tuberculosis infection in health service facilities for the elderly. Effective and feasible tuberculosis control for the elderly should be provided under the TB control Law and be implemented with the cooperation from related medical institutions and public health centers.

Key words: Tuberculosis, Elderly, Health service facility for the elderly, Early case detection

Research Institute of Tuberculosis, JATA

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

————— Case Report —————

A CASE OF HEMOPHAGOCYTIC SYNDROME ASSOCIATED
WITH MILIARY TUBERCULOSIS

Rei FUJIKI, Kaori SHIRAIISHI, Kazuhito NODA, Yuichi OHSHITA, Shigeki FUKAHORI,
Hiroto JOHJIMA, Ken TANAKA, Toru RIKIMARU, and Hisamichi AIZAWA

Abstract We reported a case of a 76-year-female with hemophagocytic syndrome caused by miliary tuberculosis. The patients had complained high fever over 38.0°C and anorexia. Her chest X-ray and computed tomography revealed disseminated miliary shadows in both lung fields. Laboratory examinations revealed anemia, thrombocytopenia and liver dysfunction. Bonemarrow aspirate revealed tuberculous granulomas and tubercle bacilli by acid-fast stains, and hemophagocytosis by macrophages. We diagnosed as miliary tuberculosis and tuberculosis-associated hemophagocytic syndrome, and started antituberculous and steroid therapy. After these therapy, fever, laboratory examinations dramatically improved.

In this case, serum IL-18, sICAM-1, sVCAM-1 were elevated. These cytokines and adhesion molecules were

reported to elevate in both hemophagocytic syndrome and tuberculosis correlating with disease activity. We conclude that IL-18, sICAM-1, sVCAM-1 may play important roles in pathogenesis of tuberculosis associated hemophagocytic syndrome.

Key words: Hemophagocytic syndrome, Miliary tuberculosis, IL-18, sICAM-1, sVCAM-1

First Department of Internal Medicine, Kurume University
School of Medicine

Correspondence to: Rei Fujiki, First Department of Internal
Medicine, Kurume University School of Medicine, 67 Asahi-
cho, Kurume-shi, Fukuoka 839-0011 Japan.

FOUR CASES OF PULMONARY TUBERCULOSIS AMONG DEEP-SEA FISHERMEN

Hidemaro ONO, Reiko MURAKAMI, Mia TSURUWAKA, and Yoshihiko SUZUKI

Abstract Pulmonary tuberculosis among deep-sea fishermen was reported. Four pulmonary tuberculosis cases among fishing boat members engaged in deep-sea fishing were registered at the Kesennuma Health Center during three years period from 2000 to 2002. Crew engaging in deep-sea fishing live together in a narrow cabin with inadequate air-conditioning for a long period of time, about 1 year. It is difficult to consult with a medical institution in an open sea. If a tuberculosis patient breaks out in a boat, the risk of transmission of tuberculosis to other members is high. In boats of all four cases in this report, about 30 to 70 percent of crew were Indonesian. Indonesia is one of the high burden countries of tuberculosis in the world. The Japanese fishing

boat members have received the medical checkup every year. Indonesians have also received the pre-employment medical checkup, however, the improvement in the quality of this medical checkup is required.

Key words : Deep-sea fishing, Pulmonary tuberculosis, Indonesian fishermen

Kesennuma Health Center

Correspondence to: Hidemaro Ono, Kesennuma Health Center, 18-5, Taya, Kesennuma-shi, Miyagi 988-0045 Japan.
(E-mail: kshc-s@pref.miyagi.jp)