Original Article

TUBERCULOSIS COMPLICATED WITH LIVER CIRRHOSIS

Akira SAITO, Naohiro NAGAYAMA, Osamitsu YAGI, Nobuharu OHSHIMA, Atsuhisa TAMURA, Hideaki NAGAI, Shinobu AKAGAWA, Yoshiko KAWABE, Kazuko MACHIDA, Atsuyuki KURASHIMA and Hideki YOTSUMOTO

Abstract [Objectives] The aim of this study is to examine the clinical characteristics of tuberculous patients complicated with liver cirrhosis.

[Materials and Methods] 44 patients (39 males and 5 females) admitted to Tokyo National Hospital since 1991 till 2005 were analysed.

[Results] Eighteen patients died and liver failure was the leading cause of death (N＝10). Hepatitis C viral infection (N＝17), and excessive alcohol consumption (N＝13) were the major causes of liver cirrhosis. Twenty five patients followed-up for more than 3 months were further selected for the detailed analyses. Multi-drug combination chemotherapy including isoniazid, rifampicin and ethambutol was administered in 22 patients. Adverse effects were seen in 20 patients. The numbers of patients with leukopenia, thrombocytopenia and hyperbilirubinemia were 10, 9 and 3, respectively. They recovered following the alteration of chemotherapeutic regimen or drug desensitization.

[Conclusion] Tuberculous patients with liver cirrhosis are characterized with higher mortality rate and higher frequency of adverse effects of antituberculous chemotherapy. Multi-drug combination regimen could be tolerable under adequate surveillance of side effects even in the situation of preexisting liver dysfunction.

Key words: Tuberculosis, Liver cirrhosis, Side effect, Antituberculous drug, Drug induced liver dysfunction, Leukopenia

Department of Respiratory Disease, National Hospital Organization Tokyo National Hospital

Correspondence to: Akira Saito, Graduate School of Medicine, University of Tokyo, 7−3−1, Hongo, Bunkyo-ku, Tokyo 113−0033 Japan. (E-mail: asaitou-tky@umin.ac.jp)

Original Article

DECENTRALIZED DOTS SHORTENS DELAY TO TB TREATMENT SIGNIFICANTLY IN CAMBODIA

[1]Saint SALY, [2]Ikushi ONOZAKI, [2]Nobukatsu ISHIKAWA

Abstract [SETTING] Rural districts in Cambodia with and without decentralized health center based DOTS program. [OBJECTIVE] To compare delays to treatment and behavior of patients up to diagnosis, between the pilot districts where DOTS is decentralized through the health centers, and the control districts where DOTS is provided through hospitals. [DESIGN] A cross sectional study with structured questionnaire interviews to all new smear-positive TB patients aged 15 years or older who were registered in the study sites from May 1st to July 31st in 2002. [RESULTS] The total delay in the pilot districts was significantly shorter than that in the control districts (median 58 days vs. 232 days, $p < 0.01$). The median doctors' delay within TB service in the pilot districts was 10 days and that in the control was 6 days. The period between first consultation to any health care provider and first visit to a TB service center, subsequent contact delay, was longer than any other type of delay and significantly different (24 days in pilot vs. 185 days in control, $p < 0.01$). The distance and travel costs to a TB service center were the factors associated with delay in seeking diagnosis of tuberculosis. No other variables had any significant association with the delay. [CONCLUSION] Decentralizing DOTS to primary care health centers is highly effective in reducing the delay to TB treatment in Cambodia.

Key words: Tuberculosis, DOTS, Delay analysis, Cambodia, Decentralization

Original Article

DETECTION OF *rpoB* MUTATIONS IN RIFAMPICIN-RESISTANT *MYCOBACTERIUM KANSASII*

[1]Shiomi YOSHIDA, [1]Katsuhiro SUZUKI, [1]Kazunari TSUYUGUCHI, [4]Tomotada IWAMOTO, [2]Motohisa TOMITA, [1]Masaji OKADA, [3]Mitsunori SAKATANI

Abstract [Purpose] To detect rifampicin-resistant mutations in *Mycobacterium kansasii* (*M. kansasii*).

[Methods] We examined the *M. kansasii* isolates from sputum of patients at National Hospital Organization Kinki-chuo Chest Medical Center from January 1, 2001 to November 30, 2005 using drug-susceptibility testing, and analyzed 69-bp fragment of *rpoB* gene in rifampicin-resistant strains.

[Results] Three strains from 314 isolates were determined as rifampicin resistant using drug-susceptibility testing. Those strains showed a rise in minimum inhibitory concentration (MIC), and had the mutations in *rpoB* gene. These point mutations in codons 513 and 516 were common mutations found in rifampicin-resistant clinical isolates of *M.tuberculosis*.

[Discussion] We verified the association between *rpoB* gene mutations and rifampicin resistance in *M. kansasii*.

Key words: *Mycobacterium kansasii*, Rifampicin-resistance, *rpoB* mutations, Drug-susceptibility test

[1]Clinical Research Center, [2]Department of Clinical Laboratory, [3]Department of Respiratory Medicine, National Hospital Organization Kinki-chuo Chest Medical Center, [4]Kobe Institute of Health

Correspondence to: Shiomi Yoshida, Clinical Research Center, National Hospital Organization Kinki-chuo Chest Medical Center, 1180 Nagasone-cho, Kita-ku, Sakai-shi, Osaka 591−8555 Japan. (E-mail: dustin@kch.hosp.go.jp)

Original Article

GEOSPATIAL ANALYSIS OF TUBERCULOSIS IN TOKYO

[1]Hirotoshi WATASE and [2]Yoshiko NAKANISHI

Abstract [Purpose] To assess geographic variations in the incidence of tuberculosis in Tokyo.

[Methods] Using information on tuberculosis incidence, 2000 to 2002, from the annual notification report, patients were categorized into 8 groups by sex and age. We then calculated the Standardized Incidence Ratio (SIR) for each of the 23 wards in Tokyo. The SIR map was described by spatial interpolation and evaluated by cross validation. Spatial scan statistics were used to detect the significance of high-risk areas across the region. We compare this with the proportional distribution of those receiving public assistance and according to the SIR.

[Results] The geographic variations of SIR did not show a uniform pattern for each group. Spatial scan statistics clearly identified locations, that were significantly high for male groups over 20 years old. Groups under 20 years old and all female groups did not produce high incidence cluster, which are likely to demonstrate spatial features of the proportion of those receiving public assistance.

[Conclusions] The geographic distribution of the proportion of those receiving public assistance should impact upon the geographic distribution of the high incidence clusters. However, considering the results of the young age group and each female group, we suggest that recent infection risk among local habitants was almost uniform, with a slightly higher tendency in urban locations of Tokyo.

Key words: Tuberculosis, Spatial interpolation, High risk group, Standardized incidence ratio, Geographic distribution

[1]Fukagawa Health Consultation Bureau, [2]Koto Public Health Center

Correspondence to: Hirotoshi Watase, Fukagawa Health Consultation Bureau, 3−4−301, Shirakawa, Koto-ku, Tokyo 135−0021 Japan. (E-mail: h-watase05@city.koto.tokyo.jp)

TSUKAMURELLA TYROSINOSOLVENS CULTURED FROM SPUTUM OF A PATIENT WHO RECEIVED TOTAL GASTRECTOMY FOR GASTRIC CANCER

[1]Takemasa MATSUMOTO, [1]Motokimi SHIRAISHI, [2]Hisae YOSHIMURA, [1]Keiji SOGEN, [1]Taishi HARADA, [1]Chikara YOSHIMURA, [1]Ryutaro ARAMAKI, [1]Fumio YAMAMOTO, [1]Takashige KURAKI, and [1]Kentaro WATANABE

Abstract A 79-year old woman underwent total gastrectomy under the diagnosis of gastric cancer in Feb. 2003. In the beginning of Jan. 2005, she noticed hemosputum and was admitted to our hospital. Chest radiograph and CT disclosed bilateral upper lobe-dominant nodular opacities in the subpleural areas and ground-glass opacities in right S^6. Transbronchial lung biopsy was performed, but no useful information for the diagnosis was obtained. Ziehl-Neelsen stain was negative for the smear of the sputum at admission, but weakly stained acid-fast bacilli were grown in the MGIT culture. By the analysis of mycolic acid and menaquinone of the cell membrane, the bacilli were identified as *Tsukamurella*. Since she was asymptomatic and repeated sputum examination revealed negative bacilli, she has been observed at the outpatient clinic without any treatment.

Key words: *Tsukamurella*, *Nocardia*, *Mycobacterium*, Non-tuberculous mycobacteriosis

[1]Department of Respiratory Medicine, [2]Department of Laboratory Medicine, Fukuoka University Hospital

Correspondence to: Takemasa Matsumoto, Department of Respiratory Medicine, Fukuoka University Hospital, 7−45−1, Nanakuma, Jonan-ku, Fukuoka-shi, Fukuoka 814−0180 Japan.

CLINICORADIOLOGICAL DIAGNOSIS OF RESPIRATORY INFECTIONS: ESTIMATE OF PATHOGENS BY RADIOLOGICAL FINDINGS AND THE STRATEGY FOR TREATMENT

Jiro FUJITA

Abstract This review discusses the clinicoradiological findings of pulmonary tuberculosis as well as non-tuberculous mycobacteria. To make a differential diagnosis between pneumonia and mycobacterial infections, it is very important to analyze the radiological findings of inflammatory lung diseases based on normal anatomical structures. If clinicoradiological analyses could make these differentiations, the appropriate treatment strategy for respiratory infections could be established. To accomplish this, exact orientations of pulmonary lobulus, acinus, and respiratory bronchioles is very important. Then, through analyzing chest CT findings and distribution patterns based on normal anatomical structures, estimation of causative pathogens could be possible. To differentiate infections caused by *Mycobacterium tuberculosis* from non-tuberculous mycobacteria, several important criteria have been demonstrated. Briefly, in MAC respiratory infection, right middle lobe and left lingula are frequently involved and centrilobular nodules and diffuse bronchiectases are characteristic radiological findings.

Key words: Lobulus, Acinus, Pulmonary tuberculosis, Non-tuberculous mycobacteria

Department of Medicine and Therapeutics, Control and Prevention of Infectious Diseases (First Department of Internal Medicine), Faculty of Medicine, University of the Ryukyus

Correspondence to: Jiro Fujita, Department of Medicine and Therapeutics, Control and Prevention of Infectious Diseases (First Department of Internal Medicine), Faculty of Medicine, University of the Ryukyus, 207 Uehara, Nishihara-cho, Nakagami-gun, Okinawa 903−0215 Japan.
(E-mail: fujita@med.u-ryukyu.ac.jp)