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HEPATITIS C VIRUS INFECTION IS ASSOCIATED WITH AN INCREASED RISK OF ACTIVE TUBERCULOSIS DISEASE

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Purpose: Tuberculosis (TB) and Hepatitis C virus (HCV) infection contribute to major disease morbidity and mortality worldwide. However, the causal link between HCV infection and TB risk remains unclear. We conducted a nationwide population-based study to elucidate the association between HCV infection and TB disease by analyzing large-scale data from the Taiwan National Health Insurance.
Methods: This retrospective cohort study involved 5,454 Taiwanese persons with HCV infection and 54,274 age- and sex-matched non-HCV infected persons between January 1998 and December 2007. The diagnosis of HCV infection was established using ICD-9-CM codes. Incident tuberculosis disease was identified using codes and medication records. Time-dependent Cox proportional hazards regression analysis was used to measure the association between HCV infection and active TB disease.
Results: Incidence rate of active TB disease was higher among HCV infection than in control (134.1 *vs.* 89.1 per 100,000 person-years; incidence rate ratio 1.51; $p = 0.014$). HCV infection was significantly associated with active TB disease in multivariate Cox regression (adjusted HR, 3.20; 95% CI, 1.85 - 5.53; $p < 0.001$) and competing death risk event analysis (adjusted HR 2.11; 95% CI, 1.39-3.20; $p < 0.001$). Multivariate stratified analysis further revealed that HCV infection was a risk of active TB disease in most strata.
Conclusions: HCV infection is associated with a higher risk of developing active TB disease. Primary health care providers should pay close attention to HCV patients with chronic cough, fever, and other manifestations of TB disease.

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INCREASED RISK OF ACTIVE TUBERCULOSIS IN PATIENTS WITH DERMATOMYOSITIS AND POLYMYOSITIS — A NATIONWIDE COHORT STUDY

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Purpose: The risk of active tuberculosis (TB) in patients with dermatomyositis/polymyositis (DM/PM) is poorly understood. Therefore, we conducted a nationwide retrospective cohort study to investigate the effects of DM/PM on the risk of active TB.
Methods: We identified patients with newly diagnosed DM/PM in Taiwan between 1998 and 2008 using the National Health Insurance Research Database and the Catastrophic Illness Patient Database. A nationally representative cohort of 1,000,000 enrollees was included for comparison. Each DM/PM patient was frequency-matched to four control patients according to age, sex, and index date. All of the patients were observed from the index date until the occurrence of active TB disease, death, or until December 31, 2008. We calculated the hazard ratios (HRs) and 95% confidence intervals (CIs) of active TB disease in the DM/PM and comparison cohorts using the modified Cox proportional hazards regression model by competing death risk adjustment. The cumulative incidences of active TB disease were generated using the modified Kaplan—Meier method.
Results: The study group consisted of 4,958 DM/PM patients and 19,832 non-DM/PM controls. During the study period, a total of 85 (1.7%) DM/PM patients developed active TB disease, yielding a rate that was significantly higher than that of non-DM/PM patients (0.64%; $p < 0.001$). Incidence rate of active TB disease was higher among DM/PM patients than in controls (305 vs. 103 per 100,000 person-years; incidence rate ratio 2.95; 95% confidence interval [CI], 2.24 to 3.88). Modified Cox's regression model adjusted for age, sex, underlying medical disorders, and competing death risk, a significantly higher active TB disease rate was maintained for DM/PM patients compared with non-DM/PM patients (adjusted hazard ratio, 2.64; 95% CI, 1.97 to 3.54; $p < 0.001$).
Conclusions: DM/PM patients have a greater risk of active TB disease than in non-DM/PM patients.

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EXPERIENCE OF IMPROVING TUBERCULOSIS CONTACT TRACING USING TRM IN A TEACHING HOSPITAL

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Purpose: To control Tuberculosis (TB), we should prevent further TB transmission via early diagnosis and treatment of latent TB, especially in the group of contacts with TB suspect/case in hospital. After exposure to an infectious case, 1—2% of contacts will develop TB, one third will be infected with TB (but won't have TB disease) and two thirds will remain uninfected. Of the one third who is infected, about 10% will develop TB disease. 50% of these patients will get TB in 2 yrs after exposure. From 2011 to 2013, the TB exposure index cases are 54, 29, and 29 respectively, and the numbers of TB contact tracing after exposure is 825, 609, and 600 for each year in this hospital. By the team resource management (TRM), it improved adherence to contact tracing and the TB outbreak did not happen in this hospital.To find out 1) whether the TRM screen strategy increasing adherence to TB contact tracing 2) whether the strategy identified more at-risk contacts and increasing TB prevention..
Methods: We use team resource management (TRM) strategy to improve TB contact tracing. This team includes the members of infectious control unit, labor safety office, human resource room, and the division of infectious disease. From 2011 to 2013, when the TB index case was confirmed in our hospital or informed from the centers for disease control and prevention (CDC), the associated laboratory data including sputum acid fast stain, TB culture, and/or PCR in the index case were checked by infectious control unit. Then the contacts with the TB index case by definition are list. The relevant data of contact, including the healthcare-workers and patient and their family/friend will be provided by human resource room and labor safety office will be informed. CXR examination will be arranged for each TB contacts, and the result will be followed. Finally, the TB contact case will be confirmed and closed by infection control unit.
Results: In 2011, the TB exposure index cases are 54 and 825 persons needed contact tracing. Of 825 persons, 794 (96%) completed the tracing. In 2012, the TB exposure index cases are 29 and 609 persons needed contact tracing. Of 609 persons, 586 (96%) completed the tracing. In 2012, the TB exposure index cases are 29 and 600 persons needed contact tracing. Of 600 persons, 573 (95.5%) completed the tracing. All of following CXR in contacts revealed normal.
Conclusions: The TRM contact tracing model seems to work in easing hospital evaluation of TB patient contacts and improving adherence to screening procedures.

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LABORATORY EFFORTS TO PREVENT TUBERCULOSIS EPIDEMICS: IN-TIME DRUG SUSCEPTIBILITY REPORT AND DRUG-RESISTANT ANALYSIS

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Purpose: Successful containment of tuberculosis (TB) begins from accurate treatment for new patients. The arising of drug-resistance, possibly caused by drug-resistant strains, might induce prolonged treatment, even treatment failure. Therefore, it could be helpful for the clinicians to make adequate anti-TB regiments in case of laboratory in-time TB drug