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INVESTIGATION AND MANAGEMENT OF A CLUSTER OF TB INFECTION IN A NURSING HOME

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Purpose: Tuberculosis (TB) in the nursing home is an increasing problem in Taiwan. Detecting and diagnosing TB is challenging as the manifestations are not obvious in elders. Along with the growing elders' population and the increase of long-term care facilities, more emphasis should be placed on TB detection and prevention.
Methods: March 2012, in midland of Taiwan, two nursing home residents persistently coughed and their sputum samples were collected and cultured. Six weeks later, both residents were reported Mycobacterium tuberculosis and were diagnosed TB. The doctor subsequently informed the Centers for Disease Control (CDC) following the mandatory communicable disease procedure. We found the infected residents lived next door at the same floor of the nursing home, thus the possibility of TB cluster can't be excluded. The infection control measures were immediately taken as follows: 1. Transferring both residents to isolated hospital wards and accepted the anti-TB drug treatment. 2. Listing the list of contact persons including 36 residents and 19 health care workers, and arrange them to take the chest X-ray. 3. Sending their sputum samples to CDC and make a genotyping matching.
Results: May 5 2012, the results of genotyping matching by CDC showed the two TB strains were different illustrated it is not a TB cluster in the nursing home. And all contacts were normal.
Conclusions: Advices were made after discussion of this incident such as: 1. Providing the report of chest X-ray within 3 month before moving to long-term care facilities. 2. Educating lessons of TB prevention, and remind the health care workers take the residents to OPD when they had the symptoms of cough over 5 days. 3. Always wear mask during working. 4. All residents and health care workers should take annual chest X-ray examination.

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USE IMMEDIATELY ALARM SYSTEM TO FOLLOW UP THE TUBERCULOSIS PATIENTS AFTER ANTI-TB MEDICATIONS TREATMENT

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Background: TB patients may develop fatal adverse reactions after anti-TB medications treatment. The TB treatment guideline, published from Taiwan CDC, suggests that TB patients should receive blood biochemical test to avoid these adverse responses. However, these data delayed to be notified frequently by routine reported systems.
Objective: To evaluate whether a new reported system, immediately information alarm system, for abnormal laboratory data to prevent side effects in TB treatment.
Methods: The immediately information alarm system included these components; 1. TB patients must receive GOT, GPT, total bilirubin, direct bilirubin, creatine, uric acid and complete blood cell count before the TB treatment and in 2nd, 4th, and 8th week after treatment. 2. At outpatient department, TB patients, without any one of the clamed data within 7 days, the information system would automatically show up those items for examination. 3. The abnormal test data were notified by short message to physicians and TB case managers immediately. 4. The physicians would evaluate these data to avoid side effects and the case manager would contact the TB patient for medical education.
Results: From March 1, 2013 to February 28, 2014, 161 TB patients with 504 abnormal test data were notified by short message to physicians and TB case managers immediately; included 204 (40.5%) abnormal renal function test, 84 (17.5%) abnormal liver function test, and 84 (16.7%) abnormal uric acid data. Among these patients, total 43 patients (26.7%) with 24 abnormal uric acid (56%), liver dysfunction, 16 (37%), and renal dysfunction 3 (7%) were informed immediately to adjust the anti-TB medications.
Conclusion: Forty-three patients (26.7%) were informed via this immediately alarm system to prevent fatal outcome. This system may benefit to TB patients to reduce side effects after treatment effectively and complete the treatment course for TB patients.

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COMPARISON OF THE INCIDENCE OF ADVERSE EVENTS AT THE DIFFERENT PERIODS OF ANTI-TUBERCULOSIS TREATMENT IN A REGIONAL HOSPITAL IN SOUTH TAIWAN

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Purpose: The side effects of anti-tuberculosis drugs are not uncommon in patients with tuberculosis (TB). Furthermore, anti-TB treatment will last at least six months. The adverse events (AEs) may occur at any time during the course of anti-TB treatment. However, there are few studies about the most likely time that AEs happen. Thus, we analyze the incidence of AEs among the different periods of anti-TB treatment.
Methods: We conducted a study from January 1, 2013 to December 31, 2013 in a regional hospital in South Taiwan. We retrospectively collected AEs during the course of anti-TB treatment. The patients with pulmonary or extrapulmonary TB were included except multiple-drug-resistant TB. We divided the duration of anti-TB treatment into five periods. These five periods were the durations of the first week, the second week, from the third week to the fourth week, from the fifth week to 60^{th} day and from 61^{th} day to the day of complete treatment, respectively. We calculated the incidence of AEs at these five periods.
Results: Eighty-three patients were eligible in this study. The incidence of AEs was 48.2% during the complete course of anti-TB treatment. The highest incidence of AEs among these five periods occurred in the third period (25.3%). There was no significant difference in the incidence of AEs between the patients older than 65 and 65 or younger. The incidence of AEs didn't significantly differ between the patients with pulmonary TB and extrapulmonary TB.
Conclusions: This study showed that the highest incidence of AEs occurred at the period of the third week and the fourth week. Although AEs may occur at any time during the course of anti-TB treatment, we should take more care of the patients taking anti-TB drugs in this period.

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SERIAL TESTING OF INTERFERON-GAMMA RELEASE ASSAY FOR DIAGNOSIS OF TUBERCULOSIS IN HIV-INFECTED ADULTS

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Purpose: To determine the usefulness of interferon-gamma release assay (IGRA) in serial testing for predicting development of active tuberculosis in HIV-infected adults.
Methods: A prospective, cohort study enrolled HIV-infected adults in one medical center and one regional hospital in Southern Taiwan. QuantiFERON-TB Gold (QFT,N=802) and in-tube test (QFT-IT, N=303) was done at baseline and serial testing performed at 6-12 months intervals using QFT in 310, and QFT-IT in 68 subjects.
Results: 927 HIV-infected adults entered the study, 892 men and 35 women, with a mean age of 36.9 years (range 20.0-77.2years), including men-who-have-sex-with-men (27.9%), heterosexual (9.3%) and intravenous drug users (61.8%). The median CD4 count was 473 cells/uL, with 6.8% CD4<200, and 73.6% CD4>=350. The median log HIV viral load was 3.46 copies/mL, and viral suppression was achieved in 60.0% and 72.7% of MSMs and heterosexuals, respectively, and 5.3% in IDUs due to differential uptake of antiretrovirals. Lower CD4 cell counts (<200cells/uL) affected the performance of QFT resulting in lower positive rates and higher indeterminate rates (10.9%), but not QFT-IT. QFT conversion occurred in 19 (6.1%) and reversion in 32 (10.3%). QFT-IT conversion was found in 4 (5.9%) and reversions in 3 (4.4%). The conversion rate of QFT and QFT-IT was 0.429 and 0.343 per 100 person-months, respectively. The study subjects were followed up for a median of 7.23