Applying patient centered approach in management of pulmonary tuberculosis: A case report from Malaysia

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ABSTRACT
A 24 year university student with history of productive cough was registered as sputum smear confirmed case of pulmonary tuberculosis. During treatment, patient suffered from itchiness associated with anti tuberculosis drugs and was treated with chlorpheniramine (4mg) tablet. Patient missed twenty eight doses of anti tuberculosis drugs in continuation phase claiming that he was very busy in his studies and assignments. Upon questioning he further explained that he was quite healthy after five months and unable to concentrate on his studies after taking prescribed medicines. His treatment was stopped based on clinical improvement, although he did not complete six months therapy. Two major reasons; false perception of being completely cured and side effects associated with anti TB drugs might be responsible for non adherence. Non sedative anti histamines like fexofenadine, citrizine or loratidine should be preferred over first generation anti histamines (chlorpheniramine) in patients with such lifestyle. Patient had not completed full course of chemotherapy, which is preliminary requirement for a case to be classified as “cure” and “treatment completed”. Moreover, patient had not defaulted for two consecutive months. Therefore, according to WHO treatment outcome categories, this patient can neither be classified as “cure” or “treatment completed” nor as “defaulted”. Further elaboration of WHO treatment outcome categories is required for adequate classification of patients with similar characteristics. Likelihood of non adherence can be significantly reduced by applying the WHO recommended “Patient Centered Approach” strategy. Close friend, class mate or family member can be selected as treatment supporter to ensure adherence to treatment.

INTRODUCTION
Tuberculosis is a global tragedy with incidence rate of around 9 million cases per year. It is one of the foremost causes of adult deaths every year. Fundamental objectives of tuberculosis (TB) control are to detect disease as early as possible and to make sure that those diagnosed complete their treatment and be cured. In mid 1990s, Directly Observed Treatment Short course (DOTS) strategy was adopted as basis of tuberculosis control. Isoniazid (H), pyrazinamide (Z), rifampicin (R), ethambutol (E) and streptomycin (S) are recommended as first line treatment[1]. Treatment outcome of tuberculosis is reported on the basis of classification (table 1) which is developed and recommended by the working group of WHO and International Union against Tuberculosis and Lung disease (IUATLD)[1].

Adherence to T.B treatment is crucial in achieving “cure”. One of the major barriers to successful treatment outcome is default from treatment. In 2006, WHO has reported 5% default rate for smear positive pulmonary tuberculosis patients[1]. In developing countries, major causes of default include, feeling of being completely cured once sign and symptoms are resolved[2], lack of patient motivation, side effects of drugs, economic and transportation problems and socio-psychological factors[3]. Default or interruption from treatment may result in persistent infectiousness[4], relapse, drug resistance[5] and increased morbidity & mortality. In order promote drug adherence, WHO has emphasized on patient centered approach. Regular supply of drugs, high quality continuous ambulatory care, and positive activities to remove barriers to TB treatment are the key elements of patient centered approach[1].

KEY WORDS
Pulmonary tuberculosis; patient centered approach; treatment outcome; itchiness non-sedative anti histamines.

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of itchiness. Patient was still sputum smear positive (S + 1) with minimal cough. In order to subside itchiness, doctor prescribed one tablet of chlorpheniramine (4 mg) to be taken at night or when required. Patient was advised to continue anti TB treatment and report at chest clinic after another one month. At appointment date (after one month), patient claimed no cough. Sputum smear was also negative for acid fast bacilli (AFB). Patient still complained occasional itchiness. After careful examination, patient’s therapy was changed to continuation phase (CP). During CP, patient was advised to take isoniazid (250mg), rifampicin (600mg) and vitamin B12 (10 mg) daily for 4 months at primary health care unit. He was also counseled to take chlorpheniramine tablet (4mg), when required. Patient was informed to visit chest clinic after two months to evaluate treatment progress. On appointment date patient claimed no cough and his chest X-ray was better. Patient was again advised to visit chest clinic after two months and continue treatment at primary health care unit. Patient continued his treatment for another one month at primary health care unit and then defaulted from treatment. He also refused to answer phone calls from chest clinic. Patient returned to the chest clinic after 28 days of defaulting treatment and explained that he was busy at work place. He also claimed that he was quite healthy after five months of treatment and unable to concentrate on his studies once he takes medicine. Therefore, non sedative agents like fexofenadine, citrizine or loratidine [9] with equivalent anti histamine pharmacological action [8]. In current scenario, patient has to focus a lot on his studies as he is a university student. Upon questioning, patient himself stated his failure to concentrate on studies as he is a university student. Upon questioning, patient himself claimed that he was completely healthy after five months of treatment and on at least one previous occasion.

DISCUSSION
Family members, especially children and persons working in close contact (for example class mates) with an infected person are at higher risk for being infected [7]. In current case, time difference between onset of symptoms (productive cough) and start of treatment was more than one month. Moreover, patient was a student making close contact with friends and class mates rendering him at higher risk of getting tuberculosis. Transmission of Mycobacterium tuberculosis is positively associated with delay in diagnosis and start of anti TB treatment of infectious individual [6]. Another important consideration in current case is the patient’s default from treatment during intensive and continuation phase. Two major reasons; false perception of being completely cured and side effects associated with anti TB drugs might be responsible for non adherence. From case history it is evident that sign and symptoms (mainly cough and pleuritic chest pain) were resolved after two months. Patient himself reported that he was completely healthy after five months of treatment. Hence, resolution of sign and symptoms earlier than completion of treatment might be a reason for patient’s non adherence. Jaiswal et al [2] reported perception of being cured is one of the major reasons of default from TB treatment. It has been further stated that such patients are at higher risk of relapse and drug resistance [5]. WHO has recommended patient centered approach to eliminate barriers of TB treatment. This approach focuses on measures to identify and address physical, financial, social and cultural obstacles to accessing TB treatment services [1]. Convenient clinic hours with minimal waiting time, appointment of family member, close friend or general practitioner as treatment supporter, motivated health care workers with managerial support, provision of incentive packages and proper education of patient about nature and duration of therapy are few options to minimize chances of default in current case.

CONCLUSION
To reduce treatment delays, there is a strong need to educate patients so that they seek care more quickly. To avoid transmission of Mycobacterium tuberculosis, infectious patients must be counseled to wear specially designed masks. However it is a better option to isolate infected patients until they are noninfectious. By applying patient centered approach, we can trim down chances of non adherence. Anti histamines must be usedrationally according to patient’s lifestyle. Further elaboration of WHO treatment outcome categories is required for appropriate classification of patients with similar characteristics.

ETHICAL APPROVAL
Ethical approval was taken from Ministry of Health, Malaysia (ref. dim. KKM/NIHSEC/08/08/04P10-69).

COMPETING INTEREST
Authors declare that they have no competing interest.

Table 1: Tuberculosis treatment outcome categories according to WHO and IUATLD recommendations.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Cure</td>
<td>A patient whose sputum smear or culture was positive at the beginning of the treatment but who was smear- or culture-negative in the last month of treatment and on at least one previous occasion.</td>
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<tr>
<td>Treatment completed</td>
<td>A patient who completed treatment but who does not have a negative sputum smear or culture result in the last month of treatment and on at least one previous occasion.</td>
</tr>
<tr>
<td>Treatment failure</td>
<td>A patient whose sputum smear or culture is positive at 5 months or later during treatment. Also included in this definition are patients found to harbor a multidrug-resistant (MDR) strain at any point of time during the treatment, whether they are smear-negative or -positive.</td>
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<tr>
<td>Died</td>
<td>A patient who dies for any reason during the course of treatment.</td>
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<tr>
<td>Default</td>
<td>A patient whose treatment was interrupted for 2 consecutive months or more.</td>
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<tr>
<td>Transfer out</td>
<td>A patient who has been transferred to another recording and reporting unit and whose treatment outcome is unknown.</td>
</tr>
<tr>
<td>Treatment success</td>
<td>A sum of cured and completed treatment.</td>
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REFERENCES