

To the Editors:

## Is there a delay in diagnosing tuberculosis? Experience in a Teaching Hospital

Pulmonary tuberculosis (PTB) is a communicable disease with significant mortality and morbidity. Most of the in-ward patients diagnosed with PTB are emaciated and pale on presentation. It appears that they have been suffering from the illness for a long time. An early diagnosis of the disease that enables the initiation of specific chemotherapy would not only reduce the morbidity and mortality, but also the spread of the disease. A Spanish study has revealed that doctors were responsible for delayed diagnosis in 75% of cases [1]. The patient's ignorance as well as inaccessibility to health care facilities are some of the reasons for delay in diagnosis [2]. Analysis of surveillance data in London 1998–2000 has revealed that the gap between the onset of symptoms of PTB and diagnosis or treatment was more common for white people and for women. This might be because PTB may be suspected more readily among men, blacks or Asian people [3]. PTB is not thought of as a possible diagnosis unless there is a particular reason to do so. We have been too bold in treating all patients with cough, fever, and shortness of breath as simple respiratory tract infection, and consider PTB as a 'second line' possibility when the patient does not respond to treatment. The lack of sensitivity and specificity of the symptoms, signs, and investigations of PTB too have a role to play in delaying the diagnosis [4,5].

We conducted a study to find out the duration between the onset of symptoms and diagnosis of tuberculosis, and to find out the possible causes for any delay in diagnosis. We studied all the in-ward patients with PTB of all the three general medical units of the Colombo South Teaching Hospital, over a period of one year from 1 November 2002. We also perused the case notes, results of investigations, and referral notes to gather the relevant information. Confirmatory laboratory data for inclusion included positive sputum smears for acid fast bacilli (AFB). Up to eight samples of sputum were tested for AFB in the recruits. All sputum negative patients were excluded from the study. In those patients with suspected tuberculous lymphadenopathy, an essential prerequisite for inclusion was the presence of the typical histological evidence of tuberculosis on biopsy of the lymph nodes.

One hundred and six patients were initially recruited for the study when PTB was the first diagnostic possibility based on the clinical presentation and findings on chest radiography. Laboratory data confirmed tuberculosis in 64 patients. Tuberculosis was found to be more prevalent in the middle age group—51% of the patients were between 41 and 60 years. Seventy seven per cent of them were males. Nearly 55% of the patients had been seen by more than one doctor before hospital admission. Twenty

five per cent of the patients had been treated in the out-patient Department and 10% of them as in-patients in a government hospital for their illness. Another 6% were seen by specialists in allopathic medicine. All received medication for simple respiratory tract infection, underdiagnosing TB. Only 30% of the patients carried a referral note from the primary health care service provider. In 46.4% of the patients, cough was the main complaint that prompted them to seek medical care. Fever, chest pain and haemoptysis were other frequent complaints. Only 7.7% gave a history of having close contact with a person having a chronic cough. Ninety two per cent of the patients had cough for more than 2 weeks. Fever, night sweats, loss of weight, anorexia, shortness of breath, chest discomfort and general ill health were the other common (i.e. experienced by more than 50% of patients) symptoms. Haemoptysis was observed in 44.8% of patients. Sixty three per cent of patients smoked, while 56% consumed alcohol. Ten per cent admitted to substance abuse. Eighteen per cent of the patients were suffering with diabetes mellitus. Fifteen per cent of them had asthma or chronic obstructive pulmonary disease (COPD), and they were treated either with oral or inhaled steroids. Eighty five per cent of the patients were wasted, 72% had fever during the stay in hospital and 98% of them had specific lung signs. Seventy five per cent patients had an ESR of more than 95 mm in the first hour. White cell and differential count was normal in 54% of the patients. Abnormalities in the chest radiographs ranged from soft infiltrates, confluent opacities, consolidation, cavitation, miliary mottling, fibrosis, pleural effusions, pneumothorax and calcification. Radiological lesions confined only to the right lung were evident in 43% of the patients, while 21.4% had in the left lung only. Bilateral involvement was observed in 28.6%. Thirty six per cent of patients had lesions confined to the middle and lower zones only with sparing of the upper zones, while 7% did not show any significant radiological abnormalities. The first sample of sputum was positive for AFB in only 55% of the patients. Having tested serial sputum samples for AFB, three serial samples diagnosed 90% of the patients as AFB positive, and to cover 95%, testing of six serial sputum samples was required.

A significant number of patients were diagnosed in the second and fourth week since the onset of symptoms (16.3% and 28.6% respectively). However, as much as 25% remained undiagnosed after 8 weeks of seeking medical attention as PTB was not thought of by the primary health care providers.

In the study sample, PTB was neither suspected nor diagnosed until admission to a tertiary care hospital. The

underdiagnosis on the part of primary health care service providers and delay in treatment are issues of grave public health concern. Cough of more than 2 weeks' duration is a significant complaint which had been ignored in many of the cases. PTB should be suspected and excluded at least by chest xray, which is a readily available facility. In resource-poor developing countries limited by facilities for polymerase chain reaction, bronchoalveolar lavage and transbronchial lung biopsy that would increase the diagnostic yield, the practical use of simple, cheap and readily available ESR and chest xray as screening tools in the appropriate clinical setting cannot be overemphasised. As none of these screening investigations were done on any of the patients before hospital admission there is an urgent need to heighten the awareness of PTB among primary health care providers. This should include the medical officers manning the out-patient departments of tertiary care hospitals as well. In the event of sputum samples been negative for AFB, serial sputum samples (at least six) should be tested in patients with a high suspicion of open PTB. The increased prevalence of bronchial asthma and COPD in the community and the liberal use of oral and inhaled corticosteroids for these conditions imposes the added risk of disseminating tuberculosis.

**KH Sellahewa**, *Physician*, **KKSW Kulathilake**, *Senior House Officer* and **JLIN Fernando**, *House Officer*, *Colombo South General Hospital (Teaching), Sri Lanka.*

Correspondence: KHS, e-mail <kolithah@eureka.lk> ( *Competing interests: none declared*).

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