Original Article

COURSE OF ACTION TAKEN BY SMEAR NEGATIVE CHEST SYMPTOMATICS: A REPORT FROM A RURAL AREA IN SOUTH INDIA

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Summary
***Objective*:** To evaluate adherence to diagnostic algorithm of Revised National Tuberculosis Control Programme (RNTCP) and course of action taken by smear-negative chest symptomatics (CSs).
***Method*:** Interviewing smear-negative chest symptomatics.
***Results*:** Of the 423 smear-negative CSs interviewed, 85 (20%) were not prescribed antibiotics and only 133 (39%) received it for more than seven days. Of the 148 patients with persistence of symptoms, 83 (56%) returned for further investigations and only 39% were X-rayed. Main reasons for not returning were: 'not aware' or 'consulted another health provider.'
***Conclusion*:** Strict adherence to diagnostic algorithm and proper counselling of patients are important for diagnosing smear-negative pulmonary tuberculosis (PTB) cases. **[*Indian J Tuberc 2006; 53:4-6*]**

***Key words*:** Tuberculosis, diagnostic algorithm, smear negative

INTRODUCTION

Although detection and cure of smear-positive tuberculosis (TB) remains the foremost priority of a tuberculosis control programme, diagnosis and management of smear-negative TB cases cannot be overlooked. In recent years, smear-negative tuberculosis is being reported more frequently with HIV co-infection[1]. If left untreated, 28% – 40% of smear negative chest symptomatics with an abnormal X-ray may develop active TB over a two-year period [2,3].

In the Revised National Tuberculosis Control Programme (RNTCP) of India, medical officers are trained to diagnose smear negative TB using a standardized protocol[4]. Chest Symptomatics (CSs), defined as cough of 3-weeks or more, with 3 sputum smears (SS) negative for acid-fast bacilli (AFB) should be prescribed a course of antibiotics for 7-10 days and asked to return for follow up examination, if symptoms persist. Chest X-ray should be done when patients with symptoms return for follow-up. If X-ray is suggestive of TB, the patient is diagnosed to have smear-negative pulmonary tuberculosis (PTB).

We undertook a study in one tuberculosis unit of Tiruvallur district, Tamil Nadu to evaluate the course of action taken by smear negative symptomatics and adherence to the protocol for diagnosing smear-negative PTB cases in the RNTCP.

METHODOLOGY

A population of 580,000 was covered by 17 governmental primary health centres (PHCs) where out-patients voluntarily sought care for their chest symptoms. Three heavily utilized PHCs with microscopy facilities were selected for this study. All patients with cough of 3 weeks or more were referred for 3 sputum smear examinations.

We obtained the list of all smear-negative CSs during the period October 2001 to August 2002 from the laboratory registers. The three centres were visited sequentially. Approximately, one month after sputum examination, a trained health worker

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interviewed the patients at home using a structured questionnaire. Patients were asked about the number and type of tablets prescribed and the duration for which the drugs were prescribed. Patients, who had persistence of symptoms after the medication, were asked, whether they returned to the health centre for follow up and the type of investigations done. Patients, who did not go back, were asked about the reasons for the same.

RESULTS

Of the 423 patients interviewed, 85 (20%) were not prescribed antibiotics. Among the 338 patients who received antibiotics, only 133 (39%) received it for 7 days or more, 65 (19%) for 4-6 days and 140 (41%) for 1-3 days. We analysed the data according to PHCs and found that nearly 50% of patients were given antibiotics for $\geq$ 7 days in 2 centres while in the third centre (the centre with higher case-load), only 35% were given antibiotics, a statistically significant difference ($p= 0.04$). After the course of antibiotics, 190 (56%) patients reported that their chest symptoms subsided. Of the remaining 148 patients with persistent symptoms, 83 (56%) returned to the PHC. The proportion of patients who did not respond to antibiotics given for 1-3, 4-7 and >7 days were 45%, 44% and 38% respectively and the difference was not statistically significant.

Among 83 non-responders to antibiotics who returned, only 32 (39%) had a chest X-ray taken. Of the 51 patients who were not X-rayed on return, 39 belonged to the PHCs with X-ray facility and the remaining 12 were from PHCs without X-ray facility. Since the providers were not interviewed in this study, we do not have information as to why X-ray was not done for these patients.

Course of action by chest symptomatics

Of the 148 patients, whose symptoms persisted after antibiotics, 65 (44%) did not return to the PHC for follow-up. The reasons (multiple reasons) for not returning were: 37% consulted other providers, 25% did not know that they needed to return and 25% due to inconveniences such as pressure of work, loss of wages, etc. Among 85 patients who were not prescribed antibiotics, 81 had persisting symptoms and only 50% re-attended. Among those who did not re-attend, 59% consulted other providers.

DISCUSSION

The findings of this study indicate that the RNTCP diagnostic algorithm for smear negative pulmonary tuberculosis was not followed properly in this area. Antibiotics were generally not prescribed for 7-10 days, possibly because drugs are usually prescribed only for 2-3 days at a time at governmental

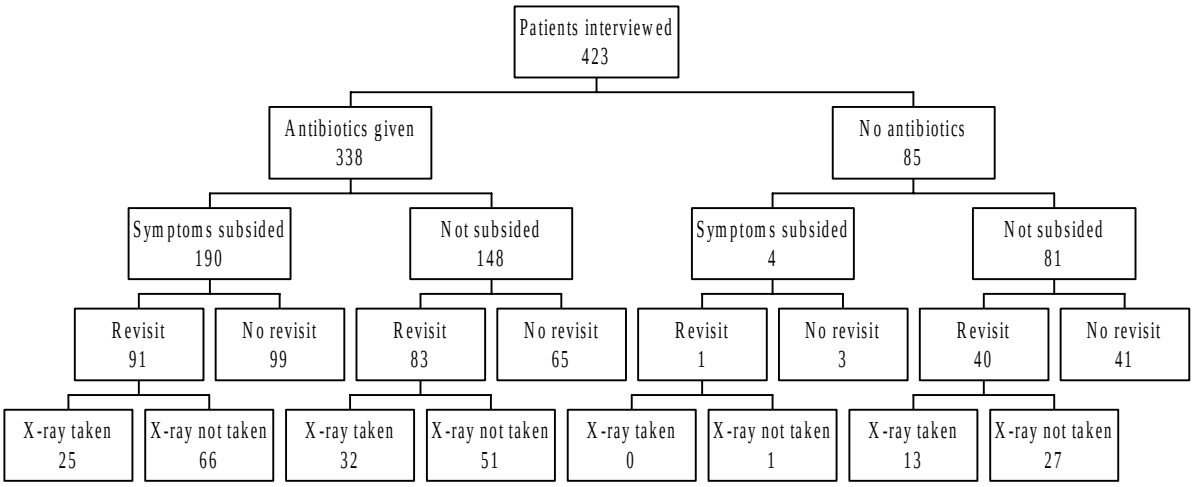

Fig.: Course of action taken by smear negative chest symptomatics in a rural area

health facilities. In the present study, antibiotics were given for 1-3 days to 41% of the patients. Inadequate antibiotic therapy may not alleviate the symptoms and patients may be erroneously started on treatment for tuberculosis. This could put unnecessary burden on the health system as well as the patients. Failure to respond to 7 to 10 days of antibiotics could be an additional indicator of smear negative PTB. Wilkinson[5] reported that sensitivity of ZN smear for diagnosing smear negative culture positive patients rose from 61% to 80% when combined with a failed clinical response to antibiotic trial.

Chest X-ray has an important role in diagnosing smear negative PTB. In this study, a proportion of cases might have been missed due to non-availability of X-ray since only 39% were X-rayed among those who returned due to persistent symptoms. Harries et al[6] reported that including X-ray in the four parameters, similar to RNTCP diagnostic algorithm, helped to diagnose smear negative patients.

In this study, only 56% of the smear negative symptomatics with persistent symptoms after a course of antibiotics returned within one month for further investigations. Thirty seven percent patients approached another health facilities and 25% did not know they had to return for follow-up.

Our study has the following limitations: Firstly, the results are based on patient interviews and their perceptions and recall capacity regarding the duration of antibiotics. Secondly, interviews were done only for patients who returned to collect sputum results. As patients selected themselves, it was a sample of convenience.

Our study underlines the importance of careful and regular supervision and monitoring to check adherence to diagnostic algorithm, which is crucial for optimal performance of RNTCP. The findings also emphasise the need for proper communication with patients and motivation by the health staff, especially Medical Officers. Also, there is a need to train private physicians on the national guidelines for diagnosis and treatment so that when patients switch from one provider to another, they continue to get adequate care.

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