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Observations on categorization of new TB cases: Implications for controlling drug resistance

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Summary

In the context of rising rates of drug-resistant tuberculosis (TB) in India, this communication presents some field observations during screening of new cases registered with the Revised National Tuberculosis Control Programme (RNTCP) in urban and rural areas of Maharashtra, India. It appears that erroneous categorization and treatment that contributes to multiple drug resistance results from a lack of patient screening for previous treatment, ambiguity in categorization and reluctance to disclose a history of anti-tuberculosis treatment. Suggested measures include detailed screening of new cases, computerization of patient records and an empathetic dialogue between patient and health care provider.

Keywords

RNTCP; screening; erroneous categorization; drug resistance

Based on the DOTS (Directly Observed Treatment, Short course chemotherapy) strategy, the Revised National Tuberculosis Control Program (RNTCP) in India has almost full national coverage of 1114 million population (1). Despite such large-scale effort, emergence of drug-resistant forms of tuberculosis (TB) now presents a major challenge for TB control in India (2). In this context, the present communication describes some field observations during the screening of new sputum smear-positive TB cases that may help to control the emergence drug resistance.

Methods

The study was carried out as a part of larger epidemiological investigation in four wards of Mumbai (urban areas) and two TB Units in the rural areas of Pune district, Maharashtra[a]. Questions were based on the World Health Organization (WHO) guidelines to screen a cohort of new sputum smear-positive cases registered with the RNTCP between May 2004 and October 2005. Patients were selected using laboratory registers and treatment cards. A total of 889 new cases were screened, 568 in urban and 321 in rural areas.

Thirteen per cent (71/568) of patients from urban areas and 9% (30/321) from rural areas admitted after screening that they had received previous anti-tuberculosis treatment for more than a month. Although they did not meet the criteria included in the definition of a 'new' case, these patients were registered as new cases and continued on the four-drug regimen (isoniazid, rifampicin, pyrazinamide and ethambutol) despite the fact that the health system had been informed of their status.

[a]1 ward/TB Unit for 0.5 million population

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This state of affairs was attributable to a lack of screening for previous anti-tuberculosis treatment by the system, ambiguity in categorizing cases as ‘new’ or ‘relapse’, especially when there was a large gap between a previous course of treatment and the current episode, absence of treatment records, and patients’ reluctance to disclose previous treatment details.

Discussion

Reports on Anti-TB drug resistance surveillance indicate higher levels of drug resistance among previously treated cases (3, 4). It is well known that patients who have previously undergone anti-TB treatment and who have bacillary strains resistant to one or two first-line drugs in the DOTS-based regimen, when treated with the same drugs, eventually develop resistance through the process of ‘amplification’(5). Erroneous categorization among new cases therefore needs considerable attention.

As observed in this study, the lack of adequate screening was partly due to a heavy workload in some health centers as well as negligence by the health staff. It was also observed that many patients do not keep records of previous treatment due to ignorance or poor living conditions. Furthermore, erroneous categorization of new cases was found to occur despite the availability of clear definitions. Some patients are categorized as ‘new’ because of the target-oriented approach. Finally, patient reluctance to mention prior anti-tuberculosis treatment may arise from a fear of stigmatization in the community or fear that DOTS centers would refuse them treatment, seeing them as problem cases (6). Addressing patients’ fears of the system would also improve correct categorization. In spite of initial screening, high rates of multidrug-resistant (MDR) TB (urban 24% and rural 23%) were observed among new cases (data not given). There is a strong possibility that some patients may not have disclosed previous treatment details or were unaware of the drugs they had taken previously. The rates of MDR-TB among treatment failures in this study (44%), although lower than the 69-100% reported elsewhere (7), may indicate the manifestation of both current as well as previously undisclosed treatment.

Efforts such as detailed screening of patients, use of computer-based methods with a central register for identification of previously treated cases, health staff training and an empathetic dialogue between the patient and the health care provider, including on-site counseling, would help to prevent erroneous categorisation. These pro-active measures, if adopted during patient intake, would offset the huge cost investment of treating drug-resistant cases.

Footnotes

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