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Research Article

EVALUATION OF DISTRICT LEVEL DOTS CENTRE UNDER REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME IN HARYANA

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ABSTRACT
Tuberculosis (TB) is an infectious disease caused by a bacterium, Mycobacterium tuberculosis. It spreads through the air by a person suffering from TB. A single patient can infect 10 or more people in a year. The objective of this study was to evaluate the functioning of a DOTS centre at district level. It was a retrospective type of record based study carried out from April 2006to March 2011. Total 6512 patients were presented with symptoms of TB at this DOTS centre in last five year (April 2006 to March 2011).Outof these, 488/6512 (7.5%) were diagnosed as tuberculosis patients and all patients were categorized on basis of RNTCP guidelines and put on DOTS regimen. Out of 488 patients, 415 (85%) patients were put on category-I, 49 (10%) were in Category–II while rest 24 (5%) patients were put on category -III. Although RNTCP program has been running successfully but the most important challenges tasks are related to MDR-TB, HIV-TB co-ordination and EPTB. This would need strengthening at all levels and amongst different stakeholders of the programme. Programme advocacy and spreading of awareness amongst general population through IEC activities need to strengthen.

Keywords: *Tuberculosis, DOTS, WHO, RNTCP, MDR-TB*

INTRODUCTION
Tuberculosis (TB) is an infectious disease caused by a bacterium, Mycobacterium tuberculosis. It spreads through the air by a person suffering from TB. A single patient can infect 10 or more people in a year. Tuberculosis remains a major public health problem in India with the country accounting for one-fifth or 26% of all tuberculosis cases reported globally (WHO, 2011). Unfortunately, TB is still one of the leading causes of mortality in India killing two persons every 3 minutes, nearly 1000 every day, despite having a robust Revised National Tuberculosis Control Programme (RNTCP) (TB India, 2009). According to WHO 2011 report, the estimated global annual incidence of 8.8 million TB cases, nearly 2.3 million cases were estimated to have occurred in India (Central Tuberculosis Division Tuberculosis India, 2011).

In 1992, the Government of India, together with the World Health Organization (WHO) and Swedish International Development Agency (SIDA), reviewed the national programme and concluded that it suffered from managerial weakness, inadequate funding, over-reliance on x-ray, non-standard treatment regimens, low rates of treatment completion, and lack of systematic information on treatment outcomes. As a result, Revised National Tuberculosis Control Programme (RNTCP), based on the internationally recommended Directly Observed Treatment Short-course (DOTS) strategy launched in 1997 implemented a phased expansion achieving nation-wide programme coverage in March 2006 and now covers more than 1 billion (1,164 million) populations across 632 districts in 35 states and union territories. DOTS has initiated more than 12.8 million TB patients on treatment, saving an additional 2.3 million lives (Central Tuberculosis Division Tuberculosis India, 2011).

The entire country now covered by Revised National Tuberculosis Control Programme, making it the second largest such programme in the world. The programme has developed a ‘strategic vision for TB control for the country up to 2015; under which it aims to achieve and maintain a cure rate of at least 85% in new sputum positive pulmonary TB patients, and detection of at least 70% of such cases (Revised National Tuberculosis Control Programme, 2012). The WHO Global Tuberculosis Control Report 2010 has set a new target of treatment success rate amongst sputum smear positive cases to be 90% and has

given less emphasis on Case Detection Rate (CDR) as there is uncertainty in estimates of TB incidence (WHO, 2010). Clearly, both good outcomes and high case detection rates are essential. But it is essential that the system is geared up to reliably cure patients' before any attempts are made at expanding case detection. In fact, experience clearly shows that reliably curing patients' results in a "recruitment effect" – wherever effective services are offered, case detection rates steadily increase.

Very few studies evaluated the DOTS centres in relation treatment outcome in India (Tahir *et al.*, 2006, Kaur *et al.*, 2008) and the studies on evaluation of district level DOTS centre under Revised National Tuberculosis Control Programme (RNTCP) in Haryana are also lacking. Therefore, the present study was carried out to evaluate the district level DOTS centre under the RNTCP in Haryana with an objective to evaluate the functioning of the DOTS centre in relation to treatment outcomes (WHO, 2010).

MATERIALS AND METHODS

A retrospective record based study was carried out from April 2006 - March 2011at the DOTS centre of district Rohtak (a district level hospital), Haryana. This DOTS centre was started since 2004. The patients enrolled in March 2011 completed their treatment between August-December 2011as per their categorization.All cases were classified as per the RNTCP guidelines. A TB suspect was considered any person having cough for three weeks or more with or without associated symptoms. These guidelines were followed up to March 2009 and these guidelines have been revised for diagnosis of TB in RNTCP since April 2009.[8]

Now, a TB suspect is a person having cough for two weeks or more with or without other symptoms suggestive of TB. These new guidelines were implemented at this DOTS centre from April 2009 onwards. Two sputum specimens are collected, one on the spot and the other an early morning sample. One sputum sample positive for Acid Fast Bacilli (AFB) is considered as smear positive pulmonary tuberculosis. Smear positive patients are further classified into 'new' smear positive and 'retreatment' cases based on their previous treatment history and appropriate treatment initiated. Extra-pulmonary tuberculosis cases were also categorized in category I along with sputumsmear positive pulmonary TB.The initial intensive phase was directly observed and supervised wherein medicines were given thrice a week by the DOTS provider. In the subsequent continuation phase, first dose of the weekly blister was supervised while the rest were given as a blister pack to be taken at home. The patients were asked to return with the empty blister pack and given a new pack for the next week. DOTS provider made home visits for the defaulter patients according to the RNTCP guidelines. The collected datawas entered in the master chart and analysis was carried out using SPSS (Statistical Package for Social Sciences) version.18.0 as per objective of the study.

RESULTS

Total 6512 patients were presented with symptoms of TB at this DOTS centre during last five year (April 2006 to March 2011).Among these, 488(7.5%) patients were diagnosed as tuberculosis patients and all patients were categorized on basis of RNTCP guidelines and put on DOTS regimen. Out of 488 patients, 415 (85%) patients were put on category-I, 61 (12.5%) in category–II, while rest 12 (2.5%) patients were put on category -III.

Table 1- Distribution of tuberculosis patients and their treatment outcomes

Year	Cat I	Cat II	Cat III	Treatment Outcome			
	Cured	Treatment completed		Defaulted	Died	Failure	
2006-07	72	05	03	73	05	1	
2007-08	74	08	05	80	06	1	- -
2008-09	80	11	04	91	04	-	-
2009-10	91	18	-	101	06	1	1 -
2010-11	98	19	-	110	04	1	
Total	415	61	12	455	25	4	2 2

The treatment success rate was found to be 98.3%while 4 patients were defaulted, two patients died and two were found failure during study period (Table-1). There were 12patients diagnosed as Extra Pulmonary Tuberculosis (EPTB). The most common EPTB was lymph node tuberculosis (48.5%) followed by pleural effusion (20.9%), extra-pulmonary not otherwise- specified TB (9.5%) and others (21.1%).

DISCUSSION

At this district level DOTS centre, 488 patients were initiated treatment as per RNTCP guidelines and excellent results were achieved at follow-up. The overall treatment success rate was 98.3% which is well above the targets set under RNTCPwhile cure rate was 455 (93.2%) and treatment completion rate was found to be25 (5.1%) at this centre. The defaulter rate (0.8%) and failure rate (0.4%) of this centre were revealed very low. These treatment outcomes were better as compared to other similar studies Tahir *et al*., (2006) and Acharya *et al.,* (2010). This DOTS centre provides free, adequate and complete treatment compliance and cure through RNTCP-DOTS to cut transmission and reduce disease burden in the country. However, despite our sincere efforts tracing of these patients to ensure treatment under RNTCP is a major challenge and it still remains a difficult & a daunting task especially for illiterate and urban slums population. It is essential that all RNTCP staff should be sensitized about the necessity of feedback and the systems designed for the same, to be put into action.Patients were being referred for voluntary HIV testing and counselling since 2006 (as per records). Initially "high risk" patients were referred to ICTC, but after 2010, all tuberculosis patients are being routinely counselled and motivated for voluntary HIV testing, in view of the looming HIV-TB co-infection. The estimated burden of-TB cases in India is about 1.05 millions cases, (highest in South East Asia Region) (WHO, 2010), pose a real threat to TB control efforts. To control this, and provide MDR treatment services to patients free of cost, the DOTS PLUS strategy was developed and has been implemented in Haryana since 2009.

RNTCP has a place where a stringent quality assurance programme implemented through Internal Quality Control, External Quality Assurance, continuous quality improvement and training of laboratory personnel for performing sputum microscopy. Despite having an extensive network ofeasily accessible Designated Microscopy Centres, there remains a multiplicity of diagnostic services utilized, even for initial sputum smear AFB testing. This needs to be avoided. Considering the current incidence, more than half of the total TB patients by pass RNTCP services and are either treated in private sectors or are untreated. In India, 75% (6 million) doctors are engaged in private practice and only 0.31% is implementing RNTCP (WHO, 2011). Mostof the private practioners have practically no access to information or training programs, which accounts for surprising disparity in their management strategies. The program should ensure active involvement of the private sector in case detection and notification and provide them with the standard guidelines of TB care.

Conclusion

Although RNTCP program has been running successfully but the most important challenges task are related to MDR-TB, HIV-TB co-ordination and EPTB. This would need strengthening at all levels and amongst different stakeholders of the programme. Programme advocacy and spreading of awareness amongst general population through IEC activities need to strengthen. Similarly, capacity building of health care functionaries, posting of regular, skilled/trained and motivated staff to ensure proper programme implementation and management so that one of mile stone can be achieved which was set under millennium development goals.

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