

Tuberculosis: Current strategies to control MDR

Saroshe S¹, Gedam DS²

¹Dr Satish Saroshe, Assistant Professor, Department of Community Medicine, M.G.M Medical College, Indore, MP, ²Dr D Sharad Gedam, Professor of Pediatrics, L N Medical college, Bhopal, MP, India

Address for correspondence: Dr Satish Saroshe, Email: drsatishsaroshe@gmail.com

Abstract

Tuberculosis caused by Mycobacterium group of organism, is one of the ancient disease known to mankind. Despite the long known history of TB, treatment modalities are still not well understood and fully developed. Govt of India declared Tuberculosis a notifiable disease on 7th May 2012. India has introduced PMDT (Programmatic Management of Drug-resistant TB) services in all 35 states on 24th March 2013. Despite this entire claim made, we are very far from our MDG and RNTCP targets to achieve. In the 45th Union World Conference on Lung Health in Barcelona, Spain, in October 2014 the then Union Health Minister announced the TB-Mission 2020 to eliminate TB from India.

Key words: Direct observation therapy, Tuberculosis, drug resistant tuberculosis.

Tuberculosis (TB) is one of the most ancient diseases of mankind and has co-evolved with humans for many thousands of years or perhaps for several million years [1].

In spite of newer modalities for diagnosis and treatment of TB, unfortunately, people are still suffering, and worldwide it is among the top 10 killer infectious diseases, second only to HIV [2]. In 1882 Robert Koch was awarded Nobel prize in medicine for the discovery of *Mycobacterium tuberculosis* in 1905[3].

In India, historically speaking, fight against TB can be broadly classified into three periods: early period, before the discoveries of x-ray and chemotherapy; post-independence period, during which nationwide TB control programs were initiated and implemented; and the current period, during which the ongoing WHO-assisted TB control program is in place. [2]

Today, India's DOTS (directly observed treatment-short course) program is the fastest-expanding and the largest program in the world in terms of patients initiated on treatment; and the second largest, in terms of population coverage[2].

In spite of newer modalities for diagnosis and treatment of TB, unfortunately, millions of people are still suffering and dying from this disease. TB is one of the top three infectious killing diseases in the world: HIV/AIDS kills 3 million people each year, TB kills 2 million and malaria kills 1 million [4].

Directly observed treatment-short course (DOTS) is an internationally recognized strategy for delivering the basics of TB case-finding and cure.

It is not simply a clinical approach to patients, but rather a management strategy for public health systems, including political commitment, case-detection through quality-assured bacteriology, short-course chemotherapy, ensuring patient adherence to treatment, adequate drug supply and sound reporting and recording systems.

Without treatment, TB mortality rates are high. In studies of the natural history of the disease among sputum smear-positive/HIV-negative cases of pulmonary TB, around 70% died within 10 years; among culture-positive (but smear-negative) cases, 20% died within 10 years [5].

Epidemiology

As per WHO estimations, Tuberculosis prevalence per lakh population has reduced from 465 in year 1990 to 230 in 2012. In absolute numbers, prevalence has reduced from 40 lakhs to 28 lakhs annually [6].

Incidence per lakh population has reduced from 216 in year 1990 to 176 in 2012. Tuberculosis mortality per lakh population has reduced from 38 in year 1990 to 22 in 2012.

In absolute numbers, mortality due to TB has reduced from 3.3 lakhs to 2.7 lakhs annually [6].

The Stop TB Strategy at a glance[7]	
Vision-	A TB free world.
Goal-	To dramatically reduce the global burden of TB by 2015 in line with the Millennium Development Goals (MDGs) and the Stop TB Partnership targets.
Objectives-	-Achieve universal access to high-quality care for all people with TB. - Reduce the human suffering and socioeconomic burden associated with TB. -Protect vulnerable populations from TB, TB/HIV and drug-resistant TB. -Support development of new tools and enable their timely and effective use. -Protect and promote human rights in TB prevention, care and control.
Target-	-MDG 6, Target 6.c: Halt and begin to reverse the incidence of TB by 2015. -2015: reduce prevalence of and deaths due to TB by 50% compared with a baseline of 1990. -2050: eliminate TB as a public health problem (defined as <1 case per 1 million population per year).

Achievements during 2013

1. India has introduced PMDT (Programmatic Management of Drug-resistant TB) services in all 35 states on 24th March 2013. As on February 2014, PMDT services are available in all 35 states of the country across 704 districts covering the entire population (100%) of the country.

2. 110 DR (Drug-resistant) TB wards established with airborne infection control measures by end of 2013.

3. The country has shown an accelerated progress in scale up of PMDT diagnostic services as compared to the early implementation years from 2007 – 2012. A total of 51 C-DST (Culture and drug susceptibility testing) labs were established using various technologies- 37 Solid culture labs, 12 Liquid culture labs and 41 LPA (Line Probe Assay) labs.

4. 181021 MDR-TB suspects were tested for MDR-TB and 20763 patients were initiated on MDR-TB treatment during 2013.

As per article by Nigam et al. [8] in this issue DOTS therapy is still most effective with conventional drugs and almost 82 to 86 % of patients in non diabetic and diabetic groups completely recovers.

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