

TUBERCULOSIS CONTROL

061: TECHNICAL BASIS OF REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

VK Chadha: NTI Bulletin 2002, 38, 3-10.

The DOTS strategy adopted by the RNTCP has shown promise especially in increasing cure rates of infectious TB cases. About half of the country has already been covered with RNTCP and the remaining half is expected to be covered in another five years. This article is intended to elucidate the technical basis of different operational aspects of RNTCP namely case finding and treatment strategies, the necessity of DOT, follow up procedures and the policy for chemoprophylaxis. The article has been written in the form of answers to questions frequently encountered during the course of various training programmes, workshops and other interactive sessions with TB workers. Efforts have been made to keep the article concise and easily comprehensible. The article elucidates the technical basis of RNTCP and is sure to benefit TB programme managers and physicians.

Key Words : *DOTS; RNTCP; Treatment; Chemoprophylaxis*

062: GLIMPSES OF TUBERCULOSIS PROGRAMME AND RESEARCH IN INDIA – YESTERDAY, TODAY AND TOMORROW

B Mahadev and P Kumar: Published in the book brought out by Ramakrishna mission, 2002, P 47-66.

This vivid description traverses through the saga of important milestones and landmarks of the TB Control Programme and Research in India. The article is slotted into three time frames, yesterday (1906-1992), today (1993 – 2005) and tomorrow (beyond 2005).

During the pre-chemotherapy era of yesteryears, the only available modality of treatment for TB was isolation, good food and ventilation in a sanatorium. The first sanatorium in India was established in the year 1906 at Tilaunia followed by the one at Almora in 1908 and the United Mission TB Sanatorium at Madanapalle in 1912. The forerunners for setting up the TB Association of India, in 1939, were Dr. Fridodt Moller and Dr. B K Sikand.

The era of conventional chemotherapy (1944-1981) witnessed the development of the anti -TB drugs which gave a global impetus for the treatment and control of TB. In India these drugs were initially tried out by Dr. Sikand, Dr. Sen, Dr. Pamra and Dr. Fridodt Moller. In 1948, the BCG vaccine was introduced in India by Dr. Fridodt Moller. The year also witnessed the establishment of BCG vaccine laboratory in Guindy. Dr. P V Banjamin, who played a stellar role in the mass BCG campaign in India is also credited for setting up of the premier TB Institutes of LRS, Delhi; NTI, Bangalore, and TRC, Chennai. In 1946, a TB division was set up under the DGHS, New Delhi. Following the path breaking findings of the NSS (1955-58) and studies by TRC it was decided to have a nationally applicable TB control programme in the country. Accordingly, NTI was established with the mandate to formulate a nationally applicable programme for TB control and to train key personnel for the execution of the programme. An integrated National TB Control Programme was pilot-tested in Ananthpur District of Andhra Pradesh in 1961 and the programme was expanded in a phased manner using R1-R5 regimens. Several important studies were conducted by NTI on different aspect of TB – epidemiological, operational, sociological and bacteriological – whose findings provided valuable inputs to the TB control strategies.

The era of SCC (1982-1992) brought about a reduction in the duration of treatment from 12-18 months to 6-8 months through the extensive clinical trials conducted by Dr. Wallace Fox and Dr. D A Mitchison. In 1983, the SCC utilizing regimens R_A and R_B were pilot-tested in 18 districts of the country and by 1986 was extended to cover 252 districts. The review of the TB programme by the GOI and WHO in 1992 highlighted the glaring deficiencies of the programme.

The era of DOTS (1993-2005) ensued with the formulation of the RNTCP which adopted the DOTS strategy. The pilot phase of the project was restricted to a limited population of 18 million between 1993-98. The hallmark of the DOTS strategy were political will and commitment, quality diagnosis using sputum microscopy, un-interrupted supply of quality anti-TB drugs, DOT, and

accountability in the form of systematic recording and reporting. A joint review of the programme was carried out by GOI and WHO and the committee recommended that the entire population of the country be covered by DOTS by 2005. DOTS is not a static strategy and should be implemented correctly and sustained over a period of time in order to achieve the desired results. The stride made in the expansion of RNTCP by the end of 2001 is exemplary of one of the fastest expansion of the strategy anywhere in the world. Emphasis has been laid on IEC activities and involvement of NGOs, Private Practitioners and Medical Colleges in the RNTCP. To monitor, evaluate and sustain the programme, areas of operation research studies were identified and executed.

The authors conclude that to quell the scourge of TB in the future, we have to act fast by enhancing the pace of decision making and translating it into action, re-focusing our attention on the important agenda of TB control through tight schedules of checks and counter checks, a change in our mindsets to achieve the desired milestones and accelerating the pace of implementation of DOTS.

Key Words: *Pre-chemotherapy Era; Conventional Chemotherapy; National Sample Survey; NTP; SCC; RNTCP.*

063: REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAM-A SUCCESS STORY

P Jagota: Indian J TB 2002,49, 69-75.

TB is one of the most ancient diseases, references to which are found in Vedas and Ayurvedic Samhitas. It continues to be one of the main causes of morbidity and mortality. In 1995, the global estimate for TB incidence was 8.8 million and there were 3 million deaths. India and its neighboring countries : China, Bangladesh, Pakistan and Indonesia account for more than half the incidence and India has nearly 30% of this global burden of disease. One person dies every minute of TB in India. There is little hope of reversing the trend unless serious attention is paid to perception of the disease and its therapy by patients and their relatives as well as priority is given at government and international levels.

Prior to the formulation of the NTP, a lot of research was conducted in the 1960's - the important ones being the NSS of 1955-58 and application of chemotherapy on

domiciliary basis in 1960. Sociological studies in 1963 and potential yield of pulmonary TB cases by sputum microscopy in 1967. Getting reliable information on magnitude and the extent of disease in the various cross-sections of population was not an easy task. The survey conducted by Frimodt Moller in 1952 in Madanapalle had indicated the problem of TB to be widespread in rural areas also, but this was not considered as being representative of the situation in the country. Hence, a special committee of ICMR was set up to address this issue and despite all odds, conducted the survey. The findings revealed that there were 4 Bacillary cases per 1000 population and the disease was found equally prevalent in cities, towns and villages. Various studies on drug regimens were conducted by TRC, Chennai. Their studies also revealed that the virtues of sanatorium treatment such as bed rest, well balanced diet and good living conditions were unimportant provided adequate chemotherapy was prescribed. It was concluded that it would be appropriate to treat infectious patients in their own homes.

The finding of NSS and TRC researches revealed that the control of TB would require a totally new approach focusing on preventive aspects and finding and dealing effectively with infectious cases on a community wide basis. Hence, it was proposed to establish a national institute to formulate a TB Control Program and impart training to personnel who would implement the above programme. Thus the NTI was born in 1959.

The NTI always gave due recognition to the social aspects of TB. The social awareness study conducted by NTI indicated that TB was not a silent disease since 95% of bacteriologically positive cases were aware of symptoms and 52% sought care at the various general health services indicating that active case finding was not necessary. The study on potential of case finding demonstrated that technicians in the periphery could perform sputum microscopy effectively with training and regular supervision. This simple primary tool for diagnosis of TB could yield 45% of the total prevalent pulmonary cases in a district, during one year, through the DTP. These two studies were the main pillars in the formulation of the DTP. The district was selected as the basic unit of NTP.

The ultimate goal of NTP is to reduce the burden of TB gradually till it ceases to be a public health problem.

The objectives and the principles of the program are

1. Detection of maximum number of TB patients in the community.
2. Provision of effective treatment to all patients diagnosed.
3. To reduce their suffering and prevent disability and death.
4. To diagnose and treat patients near to their homes.
5. To integrate the TB services with the general health services for the self-reporting patients.
6. Free services.

DTP did not achieve the epidemiological impact on the magnitude of TB problem although, sociologically it saved a lot of human lives in terms of reducing the death rate from 225 per lakh to 47 per lakh. The review of the program by GOI, WHO and SIDA in 1992 led to the formulation of RNTCP. This review highlighted the following shortcomings of NTP:

1. Inadequate allocation of funds, shortage of drugs, lack of political will.
2. Inability of general health services with which NTP was integrated to keep up with the population growth.
3. Over diagnosis by X-Ray and
4. Low treatment completion rates

The strengths of NTP were observed as: integration with the health services, felt-need oriented program, priority to sputum positive patients and free TB services.

In light of the above recommendations, RNTCP was designed and implemented in 1993. The fundamental principles of RNTCP include: 1. Political and administrative will; 2. Good quality diagnosis through sputum microscopy; 3. Good quality treatment with short course chemotherapy given under direct observation; 4. Adequate drug supply and; 5. Systematic monitoring and accountability for every patient.

Success of RNTCP is evaluated by: Expansion of RNTCP by the population coverage, Case detection rates, Ratio of smear positive to smear negative patients and Cure rates. Starting in October 1993, the RNTCP was implemented in a population of 2.35 million in 5 pilot

cities in different states. Currently over 425 million Indian population has been covered and the program is second only to that in China. Despite this rapid expansion, there has been no compromise on the quality of services and the results remain technically acceptable and in many areas are excellent.

The objective of the revised strategy was to achieve a cure rate of 85% among new smear positive patients through intermittent 3 days a week DOT. Treatment outcomes have been consistently good with 80% cure rates. Treatment success has increased for all types of patients between 1995 and the first two quarters of 1998. Cohort analysis of the patient put on treatment in the latest quarter has shown an average success rate of 83% and 3 months sputum conversion rate of 88%. It is heartening to know that quality of diagnosis remained excellent. Funding for RNTCP has been made available from our 5 year soft loan of US\$ 142 million from the World Bank. Each district with population of 2 million has a district TB control society which directly receives funds from the Central Government from the World Bank assistance.

The advisory council for the elimination of TB recommended in 1993 that, DOTS should be considered for all patients because of the difficulty in predicting as to which patient would adhere to a prescribed treatment regimen. Studies done by Murray et al 1991, Frieden et al 1995, Kumaresan et al 1998, Kenyon et al 1999, Zhang and Enarson 2000, Balasubramaniam et al 2000, Olle-Goig and Alvarez May 2001 have all shown that cure rates improved tremendously with DOTS. RNTCP can play a major role in treating patients of HIV with TB and DOTS is as effective in HIV infected TB patients as in those who are HIV negative.

WHO in 1996 reported that the emergence of drug resistance is indicative of an ineffective TB control program. Patients infected with MDR strains require longer duration of therapy and die of TB or continue to have TB despite optimal therapy. A large number of reports from different parts of the world have demonstrated that effective treatment programmes can prevent the development of drug resistance. Treatment of MDR-TB is difficult, expensive and often unsuccessful. Espinal et al in 2000 reported that DOTS prevents the emergence of MDR-TB and helps reverse its trend in the community.

In September 2001, TB experts from Medical Colleges all over India in a workshop held at NTI, Bangalore concluded that within 8 years of its implementation and 3 years of large scale service delivery, RNTCP has proved its credibility as the most effective and the only strategy to control TB in India. India is going in the right direction as far as the pace and quality of implementation of RNTCP is concerned.

Key Words: DTP; NTP; RNTCP; DOTS.

064: ROLE OF SENIOR TREATMENT SUPERVISOR IN REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME

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The RNTCP aims to reduce the transmission of TB as well as to reduce mortality and morbidity due to the disease. The performance of any programme depends upon the key persons involved. The STS plays various roles at different junctures in the programme. He is an important link between the health system and the patients, besides acting as a co-ordinator between the district and sub-district level of the health system and PHI. This article highlights the various roles of STS in the programme viz. as an educator, trainer, a captain of the treatment section, a supervisor, a planner, an organizer and so on.

Key Words: *RNTCP; Mortality; Morbidity; STS.*

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