

## **NON-COMPLIANCE WITH ANTI-TUBERCULOSIS TREATMENT AT COLOMBO CHEST CLINIC**

**WAA Tissera\***

### **SUMMARY**

Poor compliance with tuberculosis (TB) treatment has reportedly been cited as one of the major obstacles which has led to spread of TB and development of multi-drug resistant and chronic TB. The objective is to determine the factors for non-compliance to anti-TB treatment among patients attending Colombo Chest Clinic (CCC), in 1999. The design for this retrospective are treatment defaulters, who responded to a postal questionnaire.

About 15.6% of the TB cases registered at CCC during 1999 defaulted from treatment. About 74% of them responded to a postal questioner - 78% of the responders were males. Of these 67.5% were smear positive patients. About 46% of the patients who defaulted did so during the intensive phase of treatment. More than 50% of the defaulters lived within the Colombo city limits, majority within 10 kilometers. About 78% used public transport and 35% spent more than Rs.100.00 per visit to the clinic. The disappearance of symptoms and lack of money to attend clinic were the major reasons of default. Other important reasons of default included imprisonment, inability to travel and switching over to private sector for further treatment.

Intensified supervision of Directly Observed Treatment (DOT) with effective home visits, establishing DOT centers at prisons and at local practitioners, increasing the social allowance and cooperation of provincial health care authorities may improve the compliance.

### **INTRODUCTION**

Recognizing that TB is one of the most neglected health problems and has gone out of control in many parts of the world, the World Health Organization (WHO) declared the TB epidemic a global emergency, in April 1993<sup>1</sup>. TB is an ancient disease, which

continues to pose a major public health challenge to developing countries. While industrialized countries have managed to control TB, the picture in Asia and Africa is grim. Each year, 8 million people are estimated to develop TB globally and 42% of these are from South East Asian region<sup>2</sup>. Emergence of drug resistant TB is a serious concern for the countries in this region, because Multi-Drug Resistant Tuberculosis (MDR-TB) is a virtual death sentence. Unless TB control is improved, the disease is estimated to kill 30 million people worldwide during this decade. Of these deaths, 80% will occur in the most productive age group of 15-59 years<sup>3</sup>.

All efforts to lower the incidence of this disease have been only partly successful. One of the main obstacles is non-compliance of patients with treatment, because TB is unique in that even after clinical recovery, a long period of treatment has to be given to prevent relapses. Many patients stop taking treatment when they feel better due to lack of knowledge, fear of side effects, or other reasons. Poor compliance leads to relapses, MDR and occurrence of chronic cases which are very difficult to treat and require prolonged hospitalization in specialized centres. The CCC caters to more than one third of the total TB patients in Sri Lanka<sup>4</sup>. A total of 1772 patients were registered for anti-TB treatment in the year 1999. A high treatment default rate of 18.7% was observed in the year 1999 which adversely affected the national cure rate<sup>4</sup>. Therefore, the present study was conducted with the objective to determine the factors of non-compliance of TB treatment among TB patients attending CCC.

### **METHODOLOGY**

This was a retrospective, descriptive study of TB treatment defaulters who were registered at CCC in the year 1999. The TB - register was reviewed to ascertain the outcome of treatment and to identify the defaulters. Individual patient's files were also

\* Medical Officer, Central Chest Clinic - Colombo, Sri Lanka.

reviewed to identify any discrepancies in recording the treatment outcome in TB Register. A list of defaulters as rectified in individual files was prepared. A pre- structured postal questionnaire was sent to each of them for seeking information on age, sex, education and marital status, distance from residence to the clinic, employment status and reasons for default during January 2001. The data analysis was done, using statistic software packages - SPSS and Epi-Info 6.

## RESULTS

The treatment outcome as per the TB register

and as ascertained from individual case files is given at table 1. A total of 322 patients had defaulted, as per the information from TB register. On cross checking with the case files, this number was revised to 274 (15.6%) out of 1756 cases - the diagnosis was changed to non - tuberculous condition for 16 cases, who were excluded from analysis. Of them 203 (71%) responded to the questionnaire while 32 (11.7%) letters were returned due to change of address, or wrong addresses given by the patient at the beginning of treatment. One hundred fiftyeight (158 - 77.8%) of the responders were males and 45 (22.2%) were females. Being a female had more chance of completion of treatment than male.

**Table 1. Treatment outcome after review of Case files and responses -1999.**

Treatment Outcome 1999 Outcome	From Register 1999 Number (%)	After Review of files Number (%)
Cured	764 (43.1)	850 (48.4)
Completed treatment	509 (28.7)	603 (34.3)
TB Treatment Defaulted	322 (18.7)	274 (15.6)
Transferred Out	132 ( 7.4)	00 (00.0)
Treatment Failure	5 ( 0.2)	6 (0.3)
Died	14 (0.8)	21 (1.2)
Diagnosis changed	14 (0.8)	16*
Multi-Drug Resistant (MDR)	2 (0.1)	2 (0.1)
Total	1762 (100.0)	1756 (100.0)

\*excluded from analysis.

Of 203 defaulters who responded to the questionnaire, 137 (67.5%) of the defaulters had smear positive Pulmonary Tuberculosis (PTB) - of them 57.6% were males. One hundred eightyeight (188- 92.6%) defaulters were on category I anti-TB treatment - 155 (76.4%) were new patients. Ninetyfour (94- 46.3%) of the patients defaulted during the intensive phase (first two or three months) of anti-TB treatment.

Of 203 defaulters, 165 (81.2%) were between the age of 20 and 59 years. Thirtyone (31-15.2%) had

no formal education while 57 (28.0%) of them had only an education up to grade five (primary). One hundred twentyfive (125-61.5%) of patients were Sinhalese and 48 (23.5%) were Tamils. More than half (121 i.e. 59.6%) the defaulters were married, and 60 (29.6%) were single.

More than 3/4<sup>th</sup> (76.9%) of the defaulters resided within 10 kilometers of the CCC. Of the total, 98 (48.4%) patients had an income of less than Rs. 3000.00 per month. One hundred and fiftyeight (158 - 77.9%) had used public transport for clinic

visits. Seventy one (71 - 35%) had no permanent employment and 36 (17.7%) were employed in private sector. More than 1/3<sup>rd</sup> of the defaulters had to spend more than Rs. 100.00 per clinic visit per day.

More than 80% had knowledge of TB and its spread and importance of sputum examination and treatment. As many as 161 (79.3%) experienced delay in clinic services. The most number of delays had taken place at the laboratory (30.4%). Non functioning of the clinic as scheduled from 8 a. m. in the morning and getting the patient's file from counter to doctors were other reasons for delay in services.

The reasons for default as revealed by the patients are given in Table 2. Relief from symptoms (13%) and lack of money to spend for transport (11.5%) emerged as the most common reasons. About 1/10<sup>th</sup> of patients dropped out because of inability to come to the clinic without the help of an attendant. Another 1/10<sup>th</sup> shifted to private sector for further treatment. Eight percent (8%) had reservations about the requirement of visiting the clinic daily. Interestingly, only a small proportion (5.5%) cited missing of work as one of the reasons. Ten (10-3%) patients died during the course of treatment.

**Table 2. Reasons for Non-compliance of treatment (Source : Survey data)**

Reasons for non-compliance of TB treatment	No.	Rank
Got better with treatment taken	26 (13)	1
No money to attend clinic	23 (11.5)	2
Needs assistance to go to clinic	19 (9.5)	3
Missed appointment due to a funeral	18 (9)	4
Private treatment due to convenience	18 (9)	4
Unable to go to DOTS center daily	16 (8)	5
Prison custody (Imprisonment)	16 (8)	5
Physical disability	12 (6)	6
Unable to go to work on time/no leave	11 (5.5)	7
Medication for other illness*	10 (5)	8
Lost appointment card	07 (3.5)	9
Died during treatment	06 (3)	10
Treatment completed at CH Welisara	05 (2.5)	11
Advised, not to come to clinic by MO	04 (2)	12
Refused TB treatment	03 (1.5)	13
Not given appointment	02 (1)	14
Unable to read letters sent by doctor	02 (1)	14
Medicine left	02 (1)	14
Total	200 (100)	

( ) = percentage

\* Diabetes, Cancer, Alcoholism & Psychiatric disorders.

## DISCUSSION

One of the main problems in TB control is the non-completion of the lengthy course of TB treatment, for which a minimum of six months has been established for newly diagnosed patients<sup>5</sup>. Once treatment begins, the rapid improvement of symptoms experienced by the patient, lack of adequate follow-up and personal and socio-economic factors make completion of treatment difficult giving rise to prolonged periods of infectiousness, relapse and development of resistance to first line drugs, requiring costly treatment and may be death<sup>6</sup>.

In Sri Lanka, a continuous supply of effective and relatively safe drugs has been made available free of charge to every TB patient. Furthermore, a new short course anti-tuberculous regimen has been implemented since 1989. Directly Observed Treatment Short Course (DOTS) strategy covers more than 60% of the country<sup>4</sup>. At CCC, the case diagnosis and management is under the guidance of a qualified chest physician and case records are maintained for each and every patient.

In the present study after perusing case files and responses, it has been observed that the percentage of non-compliance of TB treatment in the clinic was 15.6%. Even though more than 80% of the defaulters seemed to have a satisfactory knowledge about TB and its treatment, this study shows that other reasons have contributed for non-compliance to TB treatment.

Sex and gender have only been recently recognized as important in understanding patterns of disease and health care utilization. The differences in expectations and roles that men and women experience are being increasingly explored<sup>7 & 8</sup>. The males dominated among defaulters. It is likely that females complete treatment more often since men are responsible for the family income and tend to default due to economic compulsion<sup>7</sup>.

About 43% of the defaulters had an education below Grade 5 indicating that non-compliance may be associated with no or minimal education<sup>9</sup>. In this study, almost 60% of the defaulters were married and had more responsibilities towards their families in spite of their illness. Almost 85% of the defaulters in this study lived within the Colombo city limits and

sub-urban areas of Colombo. Nearly 80% were within a radius of 10 kilometers from CCC.

Poverty as a causative factor of non-compliance of treatment is well known among TB patient's<sup>6</sup>. In this study, it may have been considered to play an important role for non-compliance among TB defaulters, of whom 48.4% were below the income of Rs. 3000.00 per month. Also 8.2% of them had no money at all to attend clinic.

Problems of obtaining leave from the work place and the difficulty in getting back to work after clinic attendance were among the reasons given by defaulters. In case of patients with physical disability, (6.2%) they had to depend on another person as helper to attend clinic which involved cost.

Daily clinic visit for DOT is an impossible task for many of the defaulters. One third of the defaulters had no permanent employment and 35% of them had to spend more than Rs.100.00 for each clinic visit. The patients sometimes seemed to have no other choice than to discontinue TB treatment and return to work. Financial difficulty seemed one of the common reasons cited by men for non-compliance<sup>7</sup>. In this group, 5.6% of respondents stated that they had to get back to work due to financial difficulties.

The main reason given by defaulters not attending the clinic was that they felt better within a few months of treatment. In this group, 9.2% of patients categorized as defaulters had taken private treatment subsequently.

It has been noted that 6.7% of defaulters were in prison custody during the period of treatment. This was highlighted by the study done in 1995 at Welikada prison<sup>10</sup>. Prisoners were found to be prone to defaulting anti-tuberculous treatment<sup>11</sup>.

High rate of non-compliance with anti-TB therapy at the CCC has been recognized as a major drawback on treatment outcome and therefore urgent attention by the relevant authorities is required to overcome this. Presently defaulter retrieval is carried out by the staff nurse by sending letter to patients' home addresses. This system has to be changed to an active defaulter tracing and home visits by the Public Health Inspectors (PHI) attached to the CCC. Cooperation between the Provincial Health Service

and the Respiratory Disease Control Programme should be strengthened to trace TB defaulters in areas under their purview by PHIs attached to them. They should be directed to co-ordinate with their counterparts in other chest clinics for tracing defaulters. Health education of diagnosed patients with TB should be intensified. A nurse should be trained for infection control activity and for health education. Health education programmes should be started in relation to health promotion, prevention and health hazards among TB patients. Arrangements should be made with the respective Divisional Tuberculosis Control Officers (DTCO) to start branch clinics in the prisons and active case detection should be practiced in the case of prisoners. Cooperation of the General Practitioners should be obtained to reduce non-compliance as 9.2% of patients had taken treatment from them. Updating their knowledge, back referral system and incorporating them into DOTS programme would improve the present position to certain extent. Blister packing of daily drugs for patients also would help in this regard. Immediate steps should be taken to minimize delays at the Laboratory, Dispensary and in DOTS treatment and sorting out patient's files. Change is usually preceded by advocacy for improved health. It is time to adopt a more comprehensive and gender sensitive approach to compliance, which incorporates from patient's, doctor and the system. Further research on non-compliance of Anti-TB treatment in other chest clinics should also be encouraged.

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