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PRIME REASONS FOR PREMATURE DISCONTINUATION OF ANTI-TUBERCULOUS THERAPY: AT MAYO HOSPITAL, LAHORE, PAKISTAN

S. IMRAN A. SHAH, UMER NAJIB, SAMAD RASUL AND ASAAD A. KHAN
Department of Chest Medicine, Mayo Hospital and
Department of Biochemistry, Central Park Medical College, Lahore – Pakistan

ABSTRACT
The objective of this study was to determine the reasons of premature discontinuation of anti-tuberculous therapy. This was a descriptive cross-sectional study that was carried out on 200 diagnosed patients of pulmonary tuberculosis at the Department of Chest Medicine, Mayo Hospital Lahore. The study showed that among the 200 patients, 44 discontinued anti-tuberculous therapy for various reasons. Poverty, feeling of being cured, use of alternative medicine and local remedies were the most common reasons for discontinuation of anti-tuberculous therapy.

Key Words: *Anti-tuberculous therapy, Multi Drug Resistant Tuberculosis.*

INTRODUCTION

The World Health Organization (WHO) declared tuberculosis (TB) epidemic as a global emergency in the year 1993.[1] One-third of the world's population is currently infected with the tuberculous bacillus. The largest number of cases occur in the South-East Asia region, which accounts for 33% of incident cases worldwide.[2] Some studies show even higher incidence of TB in South East Asian region of upto 42% of the global occurrence.[3] As with the cases of tuberculosis (TB), the highest mortality due to the disease is in the South-East Asia Region. Until 50 years ago, there were no medicines to cure TB. Strains that are resistant to a single drug have been documented in every country surveyed; what is more, strains of mycobacterium tuberculosis resistant to all major anti-TB drugs have emerged.[4] Multi-drug resistant tuberculosis (MDR-TB) is caused by inconsistent or partial treatment, when patients do not take all their medicines regularly for the required period because they start to feel better, because doctors and health workers prescribe the wrong treatment regimens, or because the drug supply is unreliable. When people fail to complete standard treatment regimens, or are given the wrong treatment regimen, they may remain infectious. The bacilli in their lungs may develop resistance to anti-TB medicines. People infact will have the same drug-resistant strain.[5]

MDR-TB is a serious concern and unless control is efficient, TB is estimated to cause 30 million deaths worldwide alone in this first decade of the 21st century.[6] The main obstacle in lowering the incidence of this disease is non-compliance of patients with treatment as TB is unique in the long treatment that has to be given for preventing relapses even after clinical recovery. Poor compliance results in relapses, MDR and chronic infection which are tough to treat and require prolonged and specialised care.[7] The current study was conducted to identify the factors of non-compliance of TB patients with treatment. The aim of the study was to determine the prime reason of premature discontinuation of anti-tuberculous therapy (ATT) among local TB patients attending Mayo Hospital, Lahore.

SUBJECTS AND METHODS

A descriptive cross sectional study was carried out between June 2004 to January 2005 at the Department of Chest Medicine, Mayo Hospital Lahore. A structured questionnaire was prepared to carry out the interviews. The study sample consisted of 200 diagnosed patients of tuberculosis who were currently under treatment for tuberculosis at Mayo Hospital Lahore. Patients suffering from co-morbid conditions including ischaemic heart diseases, diabetes mellitus, hepatic impairment or renal dysfunction were excluded from the study. All the selected subjects provided written informed consent and the study was approved by the appropriate review committee. Age and sex distribution of the study sample is shown in Table 1.

A questionnaire comprising of the anticipated reasons for premature discontinuation of ATT was carefully designed after an initial survey. The subjects who had a positive history of discontinuation of ATT in the past (at any given stage of the treatment) were classified according to the reason for the cessation of therapy. Among these reasons, certain criteria were defined according to the category. The category of 'false beliefs' for example comprised of those subjects who held various spurious ideas including

spirits/demons causing their condition, the idea that TB is incurable despite drug therapy or its reverse that TB is curable even without drug therapy etc.

Table 1: *Age and sex distribution of the study sample.*

Age	Subjects
Less than 20yrs	M 27
	F 21
20 yrs – 40 yrs	M 45
	F 43
40 yrs – 60 yrs	M 32
	F 24
More than 60 yrs	M 4
	F 4

RESULTS

The study showed that among the 200 patients included in the study, 44 (22%) discontinued ATT for various reasons (Table 2). ATT was discontinued by 82% of the patients within the first three months of initiation of therapy (Table 3). In 44 patients who discontinued ATT, 16 (36.36%) of them gave poverty as their main reason for discontinuing ATT, 15 (34.09) faltered because of the feeling of being cured, 11 (25%) withdrew after starting various local remedies and only 2 (4.54%) stopped taking ATT because of their false beliefs about it (Table 4).

Table 2: *Subjects discontinuing ATT.*

Total No. of subjects	Subjects Discontinuing ATT	% age
200	44	22

Table 3: *Interval after which ATT was discontinued.*

Time interval	Freq. (f>	% age	% age
< 1 month	20	45.45	45.45
1 – 3 months	16	36.36	81.81
> 3 months	8	18.18	99.99
	44	100	100

Table 4: *Reasons for discontinuation of ATT among TB patients.*

Reasons	Freq. (f)	% age
False Beliefs	2	4.54
Visit to Hakeems (alternative medicine)	11	25
Poverty	16	36.36
Feeling of being cured	15	34.09
	44	100

In contrast to these patients who discontinued ATT, a proportion of patients persisted with ATT despite the fact that they were facing similar situations. Out of the 156 remaining subjects who persisted with treatment, 31 continued despite poverty, 28 despite the feeling of being cured, 9 despite alternative treatment and local remedies and 21 despite false beliefs (Table 5). After obtaining the above mentioned data, it was analyzed and its statistical significance was calculated using the Chi-Square Test. Among all the reasons for discontinuation of ATT, poverty, the feeling of being cured and starting alternative medicine or local remedies were found to be statistically significant reasons for discontinuation of ATT.

Table 5: *Statistical analysis of the study data.*

	Number of patients discontinuing ATT	Number of patients not discontinuing ATT	p-value
Poverty	16	31	0.05*
Feeling of being cured	15	28	< 0.05*
Visits to hakeems etc.	11	9	0.05*
False beliefs	2	21	> 0.05

*Difference is significant at 5% level of significance

DISCUSSION

Non-completion of the lengthy course of ATT is a major problem in achieving TB control. A minimum period of six months treatment for newly diagnosed TB patients has been established[8] but completion of treatment is hampered by factors such as rapid symptomatic relief experienced by the patient, personal

beliefs, socio-economic factors and lack of adequate follow-up. The failure to complete treatment due to various reasons gives rise to prolonged infectious periods, relapse and development of resistance to first line drugs. A particularly dangerous form of drug-resistant TB is MDR-TB, which is defined as the disease caused by TB bacilli resistant to atleast isoniazid and rifampicin.[6]

Poverty is a well known major reason for discontinuation of ATT among TB patients.[9] Financial difficulty is one of the common reasons cited by patients for defaulting ATT.[10]

Our results corroborate that poverty plays an important role for non-compliance among TB patients. Another causative factor given by patients was that they felt better within a few months of treatment. Visits to local *hakeems* or quacks, employing traditional remedies and using alternative medicines were also cited by defaulters as a significant factor in discontinuing ATT. Various studies have highlighted certain other factors such as male gender, family responsibilities, lack of education and co-morbid conditions which contribute to non-compliance with TB treatment among defaulting patients.[11]

From a public health perspective, poorly supervised or incomplete treatment of TB is worse than no treatment at all.[12] When people fail to complete standard treatment regimens, or are given the wrong treatment regimen, they may remain infectious. The bacilli in their lungs may develop resistance to anti-TB medicines. People they infect will have the same drug-resistant strain.[13] The two main risk factors for drug-resistant TB are; (a) inappropriate, incomplete, or erratic treatment of active disease, leading to secondary (or acquired) drug resistance, and (b) membership in a community with a high rate of drug-resistant TB, leading to primary drug resistance as shown by Eugene et al.[14] Rates of MDR-TB are high in some countries, especially in the former Soviet Union, those from Haiti, Latin America, and southeast Asia have been documented to have high rates of resistant TB and threaten TB control efforts.[15] While drug-resistant TB is generally treatable, it requires extensive chemotherapy (up to two years of treatment) that is often much more expensive than treatment of drug-susceptible TB and is also more toxic to patients.[5]

It is **concluded** that poverty, feeling of being cured and the use of alternative medicine and local remedies accounted for more than 90% of the reasons for discontinuation of ATT in our study. These prime reasons for non-compliance with ATT must be addressed immediately by instituting awareness programs about the aetiology, progression, treatment and complications of tuberculosis at a grass root level.

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