



A Study of delay in diagnosis and treatment among tuberculosis patients admitted at a medical college hospital

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Abstract

Background: Tuberculosis is a major health care challenge in India. There is always a need for fine tuning of our strategies in combating against tuberculosis. Early diagnosis and treatment of tuberculosis is an important step in this regard.

Objectives: To determine the delay in diagnosis and treatment among tuberculosis patients admitted at a Medical College Hospital.

Methodology: A hospital-based cross-sectional study in tuberculosis patients. The study included 200 patients admitted and diagnosed as tuberculosis in Yenepoya Medical College. Relevant demographic data and data on delays in diagnosis and treatment were collected by a pre-designed semi-structured questionnaire.

Results: Out of the 200 patients, 131(65.5%) were males and 69 (34.5 %) were females. The age group among the patients studied varied from 18 to 85 years with a mean age of 42.78 years with standard deviation 16.89. The study population had 161(80.5%) patients

from the rural background and 39(19.5%) patients from the urban background.

Mean delay of starting ATT after the first investigation (first point of contact of healthcare) was calculated and found to be 38.42 days. The national tuberculosis control plan facilitates early diagnosis through all the government medical facilities, 144 out of 200 (72%) patients visited a government hospital for early diagnosis, whereas the remaining 56(28%) patients visited private hospitals, healthcare centers, pharmacy, herbalist. 105 out of 200 patients, i.e., 52%, had more than 2 consultations with different health care providers before coming to our hospital leading to delay in diagnosis and financial burden. We also found out that there is no association between the education status of the patient and delay in diagnosis, type of residence (i.e urban or rural), and duration of delay.

Conclusion: There is a need for health education in the general public about tuberculosis. Emphasis has to be laid on early screening of patients in all health sectors

to reduce the delays in diagnosis and treatment in the battle against tuberculosis.

Keywords: Delay, Tuberculosis, Diagnosis, screening, NTEP

Introduction

Tuberculosis is a major cause of suffering since ages and times immemorial. It is one of the major health care challenges in India from ancient times till date. In spite our country being engaged in tuberculosis control activities since more than 50 years, it claims an estimated 4,80,000 lives every year and more than 1,400 lives every day¹.

Diagnosis of tuberculosis has a long history from the times of Galen, who described spitting of blood as a pathognomonic sign of tuberculosis² to the present day genotypic tests. Treatment of tuberculosis has come a long way starting from the usage of certain herbs, food products, and famous “Home sanatoriums” to the present day DOTS³.

Tuberculosis control activities are present in India since more than 50 years. Started in the form of National Tuberculosis Program, it was improvised to form RNTCP I in 1997 after WHO announced DOTS. National program got further improvised to RNTCP II in 2006 or simply called as RNTCP to consolidate the gains achieved in RNTCP- I, and to initiate services to address TB/HIV, MDR-TB and to extend RNTCP to the private sector⁴. At the start of 2020, the central government renamed the RNTCP the National Tuberculosis Elimination Program (NTEP)⁵.

In spite of all efforts of the national policy, such as early diagnosis and treatment of TB cases in the community, early notification to extend incentives and support to patients, logistics management, direct data transfer, incentives to provide direct beneficiary

transfer, there are certain social and economic factors influencing the early detection and treatment of tuberculosis.

Justification / need for study

There is a need to determine the delay in diagnosis and treatment of tuberculosis to aid in early initiation of treatment and hence to reduce the disease burden of the country.

Objectives

To determine the delay in diagnosis and treatment among tuberculosis patients admitted at a medical college hospital.

Material and methods

Study Design: Hospital based cross-sectional study

Study setting: Yenepoya Medical College Hospital, Mangaluru, Karnataka.

Study duration: August 2017 to September 2019

Source of data: Clinically or microbiologically diagnosed tuberculosis patients on antitubercular treatment, admitted in Yenepoya Medical College Hospital and those willing to participate in the study were enrolled after obtaining ethics clearance and informed written consent.

Relevant data like name, age, sex, place, occupation, socio-economic status, clinical history, delay in diagnosis, and treatment were collected by a pre-designed semi-structured questionnaire.

Sampling method: Purposive sampling

Sample size: Sample size calculation is done using G power software with a level of significance $\alpha = 5\%$

Effect size $D = 0.21$

Sample size is 200

Inclusion Criteria: Patients who are diagnosed as tuberculosis and admitted in Yenepoya Medical

College Hospital aged above 18 yrs are included in the study.

Exclusion Criteria : Patients who are not willing to participate in the study.

Work Plan : This study was conducted over a period from August 2017 to September 2019.

Results

Of the 200 patients, 131(65.5%) were males and 69 (34.5 %) were females. The age group among the patients studied varied from 18 to 85 years with a mean age of 42.78 with standard deviation 16.89.

Table 1: Type of residence (urban/rural) and number of days of delay in starting ATT after first investigation

		Number of days			Total
		1-29	30-59	>60	
type of residence	Urban	20	14	5	39
	Rural	93	57	11	161
	Total	113	71	16	200

Table shows the number of days of delay in starting ATT in patients from the urban and the rural study population. A delay of up to 29 days was seen in 93 out of 161 (57.7%) rural population and 20 out of 39 (51.28%) in the urban population.

Table 2: Number of Visits

Number of visits in days	Frequency	Percent
1	25	12.5
2	105	52.5
3	46	23.0
4	20	10.0
>=5	4	2.0
Total	200	100.0

105 out of 200 patients i.e. 52% had more than 2 consultations with different health care providers leading to delay in diagnosis and financial burden

Table 3: Chi square test is performed to determine the association between the various parameters

161(80.5%) patients were from the rural background and 39(19.5%) patients were from the urban background.

Even though the national tuberculosis control plan facilitates early diagnosis through all government medical facilities, out of 200 patients, 144(72%) patients visited a government hospital for early diagnosis, where as the remaining 56(28%) patients visited private, healthcare centers, pharmacies, herbalists leading to increased health care expenditure and delay in diagnosis.

Mean delay of starting ATT after the first investigation was calculated and found to be 38.42 days.

The study population had multiple health care setup visits to arrive at a diagnosis of tuberculosis.

Variables	Chi square	Df	P value
Education with duration of delay	2.278165	4	0.684747
Type of residence with duration of delay	1.642850	2	0.439804

We found out that there is no association between education status and delay in diagnosis, type of residence (i.e urban or rural), and duration of delay.

Summary

From the study, we conclude that there was a delay in starting ATT even after the patient reaches the first treatment point. Mean delay of starting ATT after the first investigation was calculated and found to be 38.42 days 105 out of 200 patients, i.e., 52% had more than 2 consultations with different health care providers leading to delay in diagnosis and financial burden.

Causes for delay in diagnosis and treatment of tuberculosis are multiple.

Factors such as patient knowledge and awareness about tuberculosis, social factors, financial situation, employment, accessibility to health center, factors such as distance, availability of transport facilities are a few important factors affecting the delay in diagnosis.

In areas where health care is available, “doctor shopping” or switching doctors of health care facilities multiple times is a factor for delay in diagnosis.

There is no association between the patient’s education status or urban/rural background and duration of delay.

Conclusion

There is a need for health education in the general public about tuberculosis and sensitization of all healthcare providers on early screening followed by

early initiation of ant tubercular therapy in the battle against tuberculosis.

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