

A Cross-Sectional Study on Delay in Seeking Treatment and its Determinants Among Pulmonary Tuberculosis Patients Registered Under RNTCP, in West Tripura District, India.



Medical Science

KEYWORDS : Patient delay, Tuberculosis, RNTCP.

Dr. Rituparna Das

MD (Community Medicine), Assistant Professor, Department of Community Medicine, Agartala Government Medical College, Tripura. P.O. Kunjaban, PIN- 799006.

Dr Subrata Baidya

MD (Community Medicine), Associate Professor, Department of Community Medicine, Agartala Government Medical College, Tripura. P.O. Kunjaban, PIN- 799006.

ABSTRACT

Background: Patient delay in seeking tuberculosis treatment results in advanced disease state at presentation and contribute to adverse sequelae. **Objectives:** 1. To assess the mean patient delay in seeking treatment among pulmonary tuberculosis patients. 2. To assess their treatment seeking behaviour. 3. To study the factors affecting the patient delay. **Methodology:** This was a Cross-sectional study conducted among 220 Pulmonary TB patients registered under RNTCP in West Tripura District, between November 2011 to October 2013. **Results:** The mean patient delay in seeking treatment was 39.69 days with a median delay of 30 days (IQR: 15 - 60). 61.40% patients had prolonged delay of > 30 days. Gender (P value- 0.02) and educational status (P value- 0.03) was found to be significantly affecting the patient delay. **Conclusion:** Intensive IEC and BCC activities on knowledge of tuberculosis symptoms is necessary to reduce patient delay in accessing DOTs services.

Introduction:

Tuberculosis (TB) is a world-wide public health problem despite of the fact that effective drugs and vaccines are available since decades making it a preventable and curable disease.¹ As per the WHO Global TB Report 2015, there were an estimated 1.68 million notified cases of TB in India in 2014.²

The Patient delay in seeking treatment after initiation of symptoms is an important factor that contribute to the massive burden of pulmonary tuberculosis (PTB) in the community and has been a persistent problem in tuberculosis control. Patient delays occurs when patient consult the health care provider late after the onset of TB symptoms.³ This leads to a delay in the diagnosis and treatment of the disease and leads to a advanced disease state at presentation. Beside, delay in diagnosis results in increased infectivity in the community.⁴ Hence the present study has been conducted with the objective to assess the mean patient delay in seeking treatment among PTB patients in West Tripura District, their treatment seeking behaviour and to study the factors affecting the delay in treatment seeking among them.

MATERIALS & METHODS:

This was a Cross-sectional study conducted among PTB patients registered under RNTCP in West Tripura District, India. The district has 12 Designated Microscopic Centers (DMC), out of which six DMC was chosen by simple random sampling. From each DMC the PTB patients were selected by systematic random sampling technique considering every second patient of the tuberculosis register. The study was conducted between November 2011 to October 2013.

Sample size was calculated to be 125 considering a standard deviation of 28.42 days⁵ of the mean delay in treatment seeking and an absolute precision (E) of 5, at 95% confidence interval. However, the present study included 220 PTB patients registered within July 2011 to June 2012 in the six DMC, considering every second patient of the tuberculosis register.

The study included PTB patients who were ≥ 15 years of age and excluded those patients who did not gave consent for the interview and who could not be traced in spite of making 2 home visits. Data was collected by interviewing the randomly selected patients using a structured, pre-tested, interview schedule. "Patient delay" was defined as time interval between onset of symptoms and presentation to a health care provider⁶. Prolonged delay was considered as a delay of ≥ 30 days (Median delay) in presentation to health care after initiation of symptoms.

Data analysis was done in Epi info version 7.0 and expressed in frequency, percentage. Statistical analysis was done using chi square test. The present study was part of a study titled "A study on factors affecting treatment adherence and knowledge of pulmonary tuberculosis and DOTs among pulmonary tuberculosis patients in West Tripura District" and was sponsored by the Department of Biotechnology. The study was approved by the institutional ethics committee of Agartala Govt. Medical College.

RESULTS:

The present study showed that majority of the patients were male (76.40%) with primary education (40.50%) and 36.81% of them had a per capita monthly income of less than Rs 500.

The study revealed that the mean delay among the PTB patients was 39.69 days with a range of 1 to 180 days and the median patient delay was 30 days (IQR: 15 - 60). Fig 1. Shows the distribution curve of the mean patient delay in seeking treatment.

Fig. 2 shows the treatment seeking behaviour among the PTB patients with majority (79.10%) of the patients seeking their treatment in Government Hospitals first, whereas the remaining patients went to private practitioners after initiation of symptoms.

Table 1 shows that overall 61.40% patients had a prolonged delay in seeking treatment after initiation of symptoms. Table 1 also shows that compared to the male patients, more female patients (75.00%) had prolonged delay in seeking treatment and it was statistically significant (p value- 0.02). Again, 75.00% of the illiterate patients showed prolonged delay in treatment seeking whereas majority of the patients (63.20%) who had Higher Secondary or above education showed short delay in seeking treatment and it was statistically significant (p value-0.03)

DISCUSSION:

The present study revealed that the mean patient delay was 39.69 days with a range of 1 to 180 days and the median patient delay was 30 days (IQR: 15 - 60). In a study conducted in Himachal Pradesh, India by Thakur R et al⁵ (2009-10) the mean patient delay was found to be 24.5 days (range of 0 - 180 days) with a median patient delay of 15 days. A systematic review conducted by Sreeramareddy CT et al⁶ on treatment delay among PTB patients in India showed that the median patient delay was 18.4 days which was less than the present study. Again, a study conducted in Mumbai, by Kulkarni PY et al⁷ the median patient delay was found to be 8 weeks which was longer than the present study. But the study finding was found to be consistent with

a study conducted by Gebeyehu et al⁸ where the median patient delay among smear positive PTB patients and smear negative PTB patients were found to be 27 days and 30 days respectively. The present study also showed that 61.40% patients had a delay of ≥ 30 days in seeking treatment. This finding was consistent to a study conducted in Nigeria⁹ where 61.80% of the patients had a delay for >30 days in seeking treatment. Hence, the present study highlighted that inspite of the huge efforts made by RN-TCP to raise public awareness to undergo sputum examination in case of cough for ≥ 2 weeks; the pattern of patient delay in seeking treatment is similar to what has been observed in different parts of the world; and is alarming.

Regarding the treatment seeking behaviour after initiation of symptoms; the study revealed that majority of the patients went to Government Hospital. A systematic review conducted by Sreeramareddy CT et al⁶ revealed that majority of the patients consults private provider first after initiation of symptoms. Again, a study conducted in Ethiopia¹⁰ showed that 26.35% patients went to government hospitals first for seeking treatment. Thus the present study revealed a good treatment seeking behaviour among the participants with none of the participants going for traditional healers or over the counter drugs.

The study revealed that patient delay in seeking treatment was significantly higher in females. Similar finding was obtained from a study conducted in Nigeria⁹ where females had 5.30 odds (1.10 - 14.10) of having treatment delay >30 days compared to males. Similar finding was also obtained from a study conducted by Xu X et al¹¹. This female predominance in patient delay may be due to the fact that females gives less importance to their health status over other family priorities in this country.

Again, educational status was found to be a significant determinant of patient delay in the present study. Similar finding was obtained from two studies conducted in Ethiopia^{8,10} where educational status was significantly affecting the patient delay.

In conclusion, the study showed that the patient delay is high and alarming in this part of the country. Gender and education played an important role in determining the delay in seeking treatment. Intensive IEC and BCC activities targeting the identified groups may have an important impact in reducing patient delay in accessing DOTs services.

Fig 2: Pie chart showing treatment seeking behaviour after initiation of symptoms.

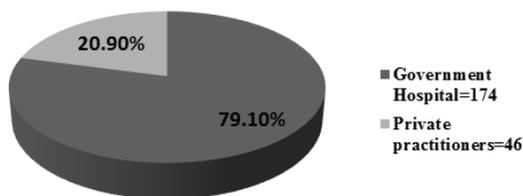


Table 1: Socio-demographic factors affecting treatment delay.

		Short delay (< 30 days) N= 85 (38.60%)	Prolonged delay (≥ 30 days) N = 135 (61.40%)	P value
Age group	15 – 30 years	25 (34.2%)	48 (65.8%)	0.81
	31 – 45 years	31 (41.9%)	43 (58.1%)	
	46 – 60 years	19 (39.6%)	29 (60.40%)	
	> 60 years	10 (40.0%)	15 (60.0%)	
Sex	Male	72 (42.9%)	96 (57.10%)	0.02
	Female	13 (25.00%)	39 (75.0%)	
Religion	Hindu	80 (38.8%)	126 (61.2%)	----
	Muslim	5 (41.7%)	7 (58.3%)	
	Christian	0 (0.0%)	2 (100%)	
Community	General Caste	41 (40.6%)	60 (59.4%)	0.83
	Scheduled Tribe	12 (32.4%)	25 (67.6%)	
	Scheduled Caste	22 (37.9%)	36 (62.1%)	
	Other Backward Caste	10 (41.70%)	14 (58.3%)	
Educational status	Illiterate	7 (25.00%)	21 (75.0%)	0.03
	Sakshar	15 (38.5%)	24 (61.50%)	
	Primary	39 (43.8%)	50 (56.20%)	
	Secondary	12 (26.7%)	33 (73.30%)	
	H/S and above	12 (63.2%)	7 (36.80%)	
Occupation	Unskilled labour	21 (34.4%)	40 (65.60%)	0.24
	Skilled labour	17 (38.6%)	27 (61.40%)	
	Business	20 (47.60%)	22 (52.40%)	
	Service	12 (54.50%)	10 (45.5%)	
	Housewife	9 (25.7%)	26 (74.3%)	
	Student	6 (37.5%)	10 (62.5%)	
Per capita monthly income	Rs < 500	30 (37.0%)	51 (63.00%)	0.46
	Rs 501-1000	21 (33.3%)	42 (66.70%)	
	Rs 1001-1500	11 (40.7%)	16 (59.3%)	
	Rs 1501-2000	10 (52.6%)	9 (47.4%)	
	Rs 2001-2500	3 (27.3%)	8 (72.7%)	
Rs >2500	10 (52.6%)	9 (47.4%)		

P value calculated using chi square test.

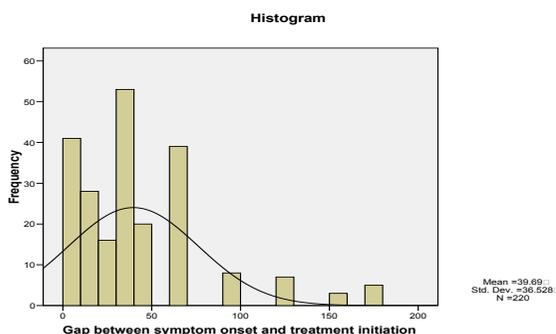


Fig 1: Histogram showing patient delay in seeking treatment.

REFERENCE

1. Kishore J. (2012). National health programs of India, National policies and legislations related to health(10thed.).Century Publications. Revised National Tuberculosis control program (RNTCP): DOTS strategy. 2. WHO. Global tuberculosis report 2015. Retrieved from: <http://www.who.int>. 3. World Health Organization regional office for Eastern Mediterranean. Diagnostic and treatment delay in tuberculosis. 2006. Retrieved from: <http://applications.emro.who.int/dsaf/dsa710.pdf>. 4. Frieden T (editor). Toman's Tuberculosis Case detection, treatment, and monitoring—questions and answers. World Health Organization, Geneva, 2004 5. Thakur R., Murhekar M (2010). Delay in diagnosis and treatment among TB patients registered under RNTCP Mandi, Himachal Pradesh, India. Indian Journal of Tuberculosis. Retrieved on 12.11.15 from:<http://medind.nic.in/ibr/t13/i1/ibr13i1p37.pdf>. 6. C. T. Sreeramareddy, Z. Z. Qin, S. Satyanarayana, R. Subbaraman, M. Pai. (2014). Delays in diagnosis and treatment of pulmonary tuberculosis in India: a systematic review. Int J Tuberc Lung Dis. Retrieved from: <http://dx.doi.org/10.5588/ijtld.13.0585>. 7. Priya Y. Kulkarni, Atul D. Kulkarni, Sulabha V. Akarte, Jitendra S. Bhawalkar, Devidas T. Khedkar. (2013) Treatment seeking behavior and related delays by pulmonary tuberculosis patients in E-ward of Mumbai Municipal Corporation, India. International Journal of Medicine and Public Health, 3(4): 286 8. Endalew Gebeyehu, Muluken Azage, Gedefaw Abeje. (2014) Factors Associated with Patient's Delay in Tuberculosis Treatment in Bahir Dar City Administration, Northwest Ethiopia. BioMed Research International. Retrieved from: <http://dx.doi.org/10.1155/2014/701429> 9. A. A. Fatiregun, C.C. Ejeckam. (2010). Determinants of patient delay in seeking treatment among pulmonary tuberculosis cases in a government specialist hospital in Ibadan, Nigeria. Tanzania Journal of Health Research, 12 (2). 10. Treatment delay among pulmonary tuberculosis patients in pastoralist communities in Bale Zone, Southeast Ethiopia (2012). BMC Research Notes, 5:320 Retrieved from:<http://www.biomedcentral.com/1756-0500/5/320> 11. X. Xu, J-H. Liu, S-Y. Cao, Y. Zhao, X-X. Dong, Y. Liang, Z-X. Lu.(2013). Delays in care seeking, diagnosis and treatment among pulmonary tuberculosis patients in Shenzhen, China. Int J Tuberc Lung Dis, 17(5):615–620.