Original Research Article

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20172185

Prevalence of TB suspects, sputum positive TB cases and health seeking behaviour of TB suspects in a coastal ward Thiruvananthapuram corporation, Kerala

Mini S. S.1*, Anuja U.2, Rajkafoor2

Department of Community Medicine, Government Medical College, ¹Kollam, ²Thiruvananthapuram, Kerala, India

Received: 13 April 2017 Accepted: 08 May 2017

*Correspondence:

Dr. Mini S. S.,

E-mail: drminisatheesh@yahoo.co.in

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: The present study was conducted to estimate the prevalence of TB suspects and prevalence of sputum positive TB cases and health seeking behaviour of TB suspects in a coastal ward.

Methods: The study was done as a cross sectional house to house survey. The study population was initially screened by a case definition and TB suspects were identified and details about their health seeking behaviour was collected using a structured questionnaire and two sputum samples (one spot and one early morning sample) also were collected for sputum microscopy.

Results: The population screened using the case definition was 5466 (86% of total population above 15 years of age) and among this 131 (2.39%) was identified as TB suspects. Among the TB suspects 46.6% were males, 19.8% were diabetic, and 60.3% were having coughed more than 4 weeks. Prevalence of sputum positivity among the TB suspects was 13.1% and in the total study population was0.183%. About the health seeking behaviour only 65.65% have consulted a doctor. Among those consulted doctor, 46.5% were males, 93% have consulted an allopathic doctor and 46.52 have completed the prescribed treatment.

Conclusions: The prevalence of TB suspects and sputum positive TB cases is high in this coastal ward and health seeking behaviour of Tb suspects is also very poor. This emphasizes the need for further improvement in case detection and IEC activities about Tuberculosis.

Keywords: Prevalence of TB suspects, Prevalence of sputum positivity among the TB suspects, Health seeking behaviour of TB suspects

INTRODUCTION

India still remains as a highest TB burden country in the world. According to WHO global Tuberculosis report 2013 India accounts for nearly a quarter of global burden of cases with approximately 2.8 million prevalent cases and 2.2 million incident cases. RNTCP is being implemented in our country from 1997 in a phased manner and by 2006 whole country is being covered by RNTCP. The revised national tuberculosis control programme has been quite successful in achieving high

case detection and treatment rates in India.Data from isolated centres suggest a reduction of TB prevalence of up to 50% or more with implementation of RNTCP.²

According to the RNTCP programme the most common symptom to clinically suspect pulmonary TB is persistant cough more than 2 weeks. Sputum smear examination of the TB suspects is the back born of RNTCP to diagnose patients with pulmonary TB and in the country there were about 13000 DMCs under the programme.³ The reliability cheapness and ease of direct microscopic

examination has made it number one case finding method all over the world. It enables us to discover the epidemiologically most important cases of tuberculosis. This is the group which contribute most of the new cases to the pool of infection.

Kerala also got good performance indicators under RNTCP in terms of more than 75% case detection and 85% cure rate but TB still remains as a public health problem in certain marginalised population like migrants, coastal population, slum population etc. This is because these people and share common cultural and socio religious beliefs and reside in a particular discrete area.

Hence a study was under taken to estimate the Prevalence of TB suspects, sputum positivity among the TB suspects and their health seeking behaviour in a coastal ward in Thiruvanathapuram Corparation.

METHODS

Study design

The present study was done as a cross sectional study by house to house survey. The survey was done by health volunteers. All the eligible people were screened using a case definition and TB suspects identified are interviewed for data collection.

Study setting and study period

Thiruvananthapuram Corporation got 100 wards and among these 7 wards was considered as coastal wards and from this one ward was selected using lottery method and it was Valiyathura ward, having 1583 household and a population of 9050 according to delimitation survey conducted by Thiruvananthapuram corporation in2010. The study period was July 1st to August 30th 2013.

Selection of study subjects

It was planned to include all subjects above 15 years of age residing in the area for more than 6 months through a house to house survey.

Sample size and sampling unit

The total population of the selected ward was 9050 according to the delimitation survey conducted by Thiruvananthapuram corporation and among this 6335 were above the age of 15 years. From this eligible population, 5466 were screened using the case definition ensuring a participation rate of 86%.

Exclusion criteria

- Those persons who cannot be traced after two repeated house visits
- Patients not willing to participate.

Ethical consideration

Informed consent was translated into the regional language (Malayalam) and a written informed consent was obtained from all the participants after explaining the purpose of this research. Institutional ethics committee approval was obtained from Government Medical College Thiruvananthapuram.

Study tool

Pretested structured questionnaire was used to collect the data.

Definition of main study variables

- Tb suspect/chest symptomatic: A person having cough for more than 2 weeks.
- Smoking: All current smokers are categorized as smokers.
- Alcoholics: All those who consume alcohol at least 3 times per week irrespective of the amount.
- Pan chewers: All those who have the habit of tobacco chewing in any form
- Co-morbidity: All person having any diagnosed chronic morbidity like hypertension, diabetes mellitus, chronic heart diseases, COPD, and on treatment.
- Type of housing: Katcha- The walls and floor are not plastered and the roof not tiled or concrete, Pucca: The walls and floor are plastered and roof is tiled or concrete.
- Completed medication: A TB suspect who has taken full course of treatment according to doctor's prescription.

Data collection

Training

The study started with training of 35 health volunteers from TSS (Thiruvananthapuram social service society -A faith based NGO run by Bishop house). The volunteers were trained for 2 days. The training includes lecture classes about Tuberculosis, cause, spread, clinical features etc. and followed by the interactive sessions on methodology of the study, questainnaire, method of sputum collection and transportation. The study was informed to district medical officer and also to the medical officer of primary health centre of the selected ward and the ASHA workers of that ward were asked to attend the training to get acquinted with the study.

House to house visit

Utilising the services of the health volunteers, ASHA workers and the field staff of the primary health centre a door to door visit was done in all houses. Using the case definition all the TB suspects / chest symptomatics (All

persons above 15 years of age and having cough for more than 2 weeks) was identified. After getting the informed consent the eligible people were interviewed directly to get the needed data

Sputum collection and microscopy

The entire chest symptomatic that identified were given two labelled sputum cup to collect two sputum samples (one spot sample and one early morning). The next day the same volunteers visited the houses and collect the samples and were sent to the District TB centre along with the filled sputum referral forms. Sputum examination was done at the designated microscopy centre of district TB centre.

Feed back

A third visit was made by the volunteers after getting the result of sputum examination and those found positive were referred to DTC to get free treatment under RNTCP and those found negative were advised to seek treatment according to severity of symptoms.

Data analysis

Information was collected from the TB suspects, identified by case definition using the pre tested interview schedule. The data entry and analysis were done using statistical package for social sciences (SPSS) version 16. The results were expressed as percentages.

RESULTS

A population based cross sectional survey was conducted to estimate the prevalence of TB suspects, prevalence of sputum positivity among them and their health seeking behaviour for chest symptoms among those above 15 years of age in a coastal ward of Thiruvananthapuram corporation. The total population of Valiyathura ward according to the ward delimitation survey conducted by Thiruvananthapuram corporation in 2010 was 9050 and among this 6335 were above the age of 15. From the eligible population 5466 person were screened using the case definition and the coverage was about 86%.

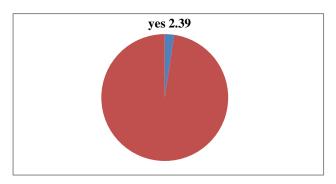


Figure 1: Prevalence of Tb suspects in the study population.

5466 people above 16 years were screened using the case definition among this 131 (2.39%) were TB suspects means having cough for more than 2 weeks.

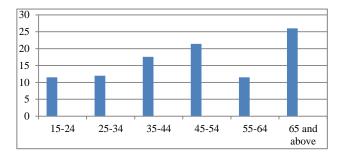


Figure 2: Age distribution of TB suspects.

Among the TB suspects 15 (11.5%) belongs to 15-24 years of age and 16 (12.0%) from 25-34 and 23 (17.6%) from 35-44 years age group and 28 (21.4%) 45-54 year age group and 15 (11.5%) belongs to 55-64 and others 34 (26%) above 65 years of age. Among the 131 TB suspects 62.5% were in the productive age group 15-54.

Table 1: General characteristics of TB suspects.

Character	Frequency (n=131)	Percentage (95% CI)
Male	61	46.6 (38.1-55.2)
BPL	91	69.5 (61.6- 77.4)
Residing in katcha house	90	68.7 9 (60.8- 76.7)
Smokers	38	29.0 (21.0- 36.8)
Alcoholics	36	27.5 (19.8- 35.2)
Diagnosed cases of diabetes	26	19.8 (13.0- 26.6)
Previous H/O TB	15	11.5 (6.1 16.9)
Family H/O TB	14	10.7 (5.5 - 15.36)
Other respiratory illnesses present	73	55.7 (47.2- 64.2)
Cough more than 4 weeks	79	60.3 (51.9 68.7)

Among the 131 TB suspects 61 (46.6%) were males and 91 (69.5%) were from BPL families,90 (68.7%) are residing in katcha houses, 36 (27.5%) of houses overcrowding was present. 38 (29%) were smokers and 36 (27.5%) were alcoholics. 26 (19.8%) having diabetes and 15 (11.5%) got previous history of TB and 14 (10.7%) got family history of TB. 73 (55.7%) got other respiratory diseases like asthma or COPD and 79 (60.3%) got cough more than four weeks.

Among the 131 TB suspects means those who are having cough for than 2 weeks 10 person were sputum positive and this comes to about 0.183%. This prevalence can be projected as a prevalence of 183 (95% CI 67.4-298.6) sputum positive case per one lakh population in Figure 3.

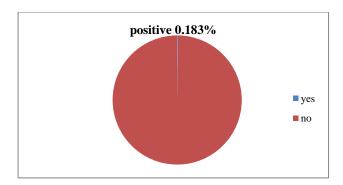


Figure 3: Prevalence of sputum positivity among the TB suspects.

Table 2: Health seeking behaviour of TB suspects.

Visted a doctor	Frequency (N=131)	%
Yes	86	65.65
Not	45	34.35
Among those visited doctor	Frequency N=86	%
Males	40	46.5
Allopathic doctor	80	93.03
Took complete treatment as prescribed by the doctor	40	46.5
Among those did not visit a doctor	Frequency N=45	%
Males	21	46.6
Duration cough more than 4 weeks	22	49

Among the 131 TB suspects only 86 (65.65%) have consulted a doctor for the symptoms. Among those sought medical care 40 (46.5%) were male 46 (53.5%) were females. Among those sought treatment 80 have consulted a allopathic doctor and among this only 40 (46.52%) took complete the prescribed treatment. Among the persons not sought treatment 22 (49%) got cough for more than 4 weeks

DISCUSSION

This study was a community based cross sectional study and data was collected by house to house survey using trained volunteers in a coastal ward. The present study shows the community prevalence of TB suspects in a coastal ward, age distribution of TB suspects, general characteristics of TB suspects, prevalence of sputum positivity among TB suspects and health seeking behaviour of TB suspects.

In Figure 1, the prevalence of TB suspects in the community was estimated by using the case definition, any person above 15 years of age and having cough for more than 2 weeks as per RNTCP guidelines. The estimated prevalence of TB suspects was 2.39% (95% CI

1.99-2.80). Many studies have been conducted in India and other developing countries to estimate the prevalence of Tb suspects (chest symptomatic). A study conducted among tribal population in central India by Rao et al in 2010 the prevalence of chest symptomatic were 11.4%.⁴ A high prevalence may be due to that the tribal population may be more marginalized than coastal population. Another study conducted by Chadha et al in rural sub district of south India the prevalence was 7.4%.⁵

In Figure 2, among the 131 TB suspects screened 62.5% were in the productive age group means below the age of 54 years. Tuberculosis is considered as a disease of economically productive age group and it is a general trend in India. Other studies conducted in India also showed the same trend in the age group of patients. Study conducted by Rao et al in Madhya Pradesh proportion of chest symptomatic in 15-24 years was 4.1% and above 55 years it is 24.1%. In the current study it is 11.5% and 37.5% respectively.

In Table 1, regarding the general characteristics of TB suspects, the important socioeconomic characters studied are gender, APL /BPL status and housing status. There was not much difference in gender among the TB suspects. Poverty and poor housing standards are associated with the development of Tb disease.

Regarding the co morbidities present in the TB suspects, 19.8% got diabetes. A study conducted by Shibu Balakrishnan et al about the diabetes prevalence among Tuberculosis cases in Kerala, they got 44% of TB patients are diabetic and this was the highest reported prevalence of DM among TB patients to date. In our study 11.5% and 10.7% of TB suspects got previous history of TB and family history of TB respectively. Presence of other respiratory illness (asthma, COPD.) was present in 55.7% of TB suspects. 60.3% of TB suspects got cough more than 4 weeks.

Sputum positivity among TB suspects

In the present study the sputum positivity among the TB suspects were 00.183% and this 00.183 can be projected as a prevalence of 183 (95% CI 67.4 -298.6) sputum positive cases per one lack population above 15 years of age. There are many studies conducted in India to estimate the prevalence of sputum positive tuberculosis cases. A systematic review and meta-analysis conducted by Thomas et al about the prevalence of pulmonary TB among tribal population in India they got a pooled estimate of 703 /lack population. This was very high compared to our study and may be due to the fact that the tribal population are special in their culture, beliefs and health seeking behaviour. Another studies conduted in tribal populations in Madhya Pradesh by Rao et al the prevalence of sputum positive Tuberculosis was 1518 per lakh population very high compared to present study. But a study conducted in south India by Chadha et al the prevalence of sputum positive tuberculosis was 152 per lakh population. It is comparable with the present study. The longitudinal studies conducted by National institute of Tuberculosis also showed that the south India got a low annual risk of infection compared to North India.

In Table 2, health seeking behaviour of TB suspects is very important because they are the target group for sputum smear examination to find out the TB cases. In the present study out of the 131 TB suspects 86 (65.65%) consulted a doctor. There is not much gender difference in the consultation and 93% of them consulted a allopathic doctor. A study conducted by Paramasivam et al in Kerala 94.7% has consulted allopathic doctor and 58.6% consulted private doctor. In the present study 49% who do not seek any treatment got cough more than 4 weeks. A systematic review conducted by Sreerama Reddy et al the median delay for seeking treatment was 55.3 days.

ACKNOWLEDGEMENTS

Department of community medicine Government Medical College Thiruvananthapuram, Kerala, India. All health volunteers and field staff in Valiyathura PHC Kerala India.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee of Government medical college Thiruvananthapuram

REFERENCES

- World Health Organisation (2013) Global Tuberculosis report 2013 Geneva.
- Subramoni R, Radhakrishna S, Frieden TR, Kolappan C, Gopi PG, et al. Rapid decline in Prevalence of pulmonary tuberculosis after DOTS implementation in a rural area of South India. Int J Tuberculosis Lung Diseases. 2008;12:916-20.

- Central TB division, Ministry of Health and Family Welfare. Annual report TB India 2012 Available at: http://www.medind.nic.in/nac/t13/i1/nact13i1p1.pdf Accessed on 10 May 2017.
- 4. Rao VG, Gopi PG, Bhat J, Selvakumar N, Yadav R, Tiwaril B. Pulmonary Tuberculosis; A public health problem amongst the Saharia, a primitive tribe of Madhya Pradesh, Central India. Int J Infectious Diseases. 2010;14(8):e713-6.
- Chadha VK, Kumar P, Anjinappa SM, Singh S, Narasimhaiah S, Joshi MV, et al. Prevalence of pulmonary Tuberculosis among adults in rural subdistrict of South India. PLoS One. 2012;7(8):42625.
- 6. Balakrishnan S, Vijayan S, Nair S, Subramoniapillai J, Mrithyunjayan S, Wilson N, et al. High Diabetes Prevalence among Tuberculosis Cases in Kerala, India. PLoS One. 2012;7(10):46502.
- 7. Thomas BE, Adinarayanan S, Manogaran C, Swaminathan S. Pulmonary TB among tribal in India; A systematic rewiew & Meta-analysis. Indian J Med Res. 2015;141(5):614-23.
- 8. Paramasivam S, Thomas B, Thayyil J, Rahim A, Thavody J, Lilabi MP, et al. Knowledge and Health seeking behaviour of Tuberculosis patients in Kerala India Int J Community Med Public Health. 2016;3:2464-71.
- Sreeramareddy CT, Qin ZZ, Satyanarayana S, Subbaraman R, Pai M. Delays in diagnosis and treatment pulmonary Tuberculosis in India Systematic review. Int J Tuberc Lung Dis. 2014;18(3):255-66.

Cite this article as: Mini SS, Anuja U, Rajkafoor. Prevalence of TB suspects, sputum positive TB cases and health seeking behaviour of TB suspects in a coastal ward Thiruvananthapuram corporation, Kerala. Int J Community Med Public Health 2017;4:2107-11.