

Delays in diagnosis and treatment of pulmonary tuberculosis among tribal patients registered under DOTS, Mayurbhanj, Orissa, India

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Tuberculosis (TB) in India

- India accounts for a fifth of world's new TB cases and two-third of cases in South east Asia.
- Burden
 - Each year, 0.8 million adults develop highly infectious, new sputum positive pulmonary TB
 - One TB patient can infect 10-15 people in a year
 - TB is one of most prevalent diseases among tribals
- Delay in diagnosis and treatment increases
 - Morbidity
 - Mortality
 - Transmission
 - Patient's expenditure

Rationale and expected benefit

- Rationale
 - In India, little is known on magnitude and risk factors for patient and health system delays among tribals
- Expected benefits
 - Provide baseline information that will help to:
 - Detect promptly chest symptomatics
 - Formulate recommendations for DOTS
 - Target case-finding, diagnosis and treatment efforts

Objectives

- Identify patient and health system delays in diagnosis and treatment for pulmonary TB
- Analyze factors responsible for these delays
- Describe TB-related health seeking behaviour

Methods: Design and population

- Analytical cross-sectional study from 15 Feb to 30 June 2007 in Mayurbhanj district, Orissa, India (Tribals: 57%)
- Study population
 - New smear positive (NSP) Pulmonary TB patients registered under DOTS in 4th quarter of 2006 in four units
- Sampling procedure
 - All patients registered in 4th quarter of 2006
- Ethical clearance
 - NICD, Delhi, India

Methods: Operational definitions

- Patient delay
 - Time interval between cough of 3 weeks till first visit to a medical facility.
- System delay
 - Time interval from patient's first visit to health system to date of start of treatment.
- Total delay
 - Sum total of patient and system delays

Methods: Data collection and analysis

- Interview with patients with pre-tested semi-structured questionnaires
 - Information collected regarding socio demographic characteristics, TB related health seeking behaviour & reasons for delay
- Data analysis
 - Delay dichotomized with cut off values
 - 21 days for patients
 - 7 days for health system
 - Means, medians, proportions, prevalence ratio with 95% confidence interval, Chi-square and Fisher exact tests
 - Software used: Epi-info software

Results: Description of the study population

- 267 patients registered
- 261 interviewed
 - 6 deaths
- 27% were female and 73% were male
- 44% tribal TB patients were in the age group of 20-40 years.
- 59% female tribal TB patients were in the age group of 20-40 years.

Patients and health system delays

	Delay in days		
	Patient (n=253, 97%)	Health system (n=51, 20%)	Total (n=261)
Median	24	3	24
Mean	37	12	38
Minimum	1	1	1
Maximum	709	75	710

Health- seeking behaviours of patients

- 87% had poor knowledge about tuberculosis
- 85% had to travel more than 5km to reach the unit
- 86% had spent more than Rs 400(10\$) on transport / treatment
- 42% preferred traditional healers as health care providers
- 53% preferred self- medication as mode of treatment

Factors significantly associated with patient delay > 21 days

Factors	Prevalence ratio (95% CI)	P value
Education	1.1 (1.0-1.1)	0.015
Cost of treatment/ transport	1.1 (0.99-1.1)	0.020
Distance	1.1 (1.0-1.3)	0.002
Lack of awareness	1.2 (1.0-1.3)	0.001

Factors significantly associated with health system delay of >7 days :

Factors	Prevalence ratio (95% CI)	P value
Delay due to administrative verification	8.3 (1.18-57.97)	0.005
Delay due to Traditional Healers & Private Practitioners	4.9 (1.61-15.45)	0.0008
Distance	1.8 (1.04 -3.12)	0.043

Limitations

- Cross-sectional study
- Recall bias with reference to timeliness and chronology of health seeking practices

Conclusion

- Poor involvement of multi-purpose health workers
- Lack of formal referral routes between private and public providers
- Poor geographical access to the treatment centres
- Lack of incentives

Recommendations

- Awareness and capacity building
 - Involve tribal heads and traditional healers
 - Strengthen IEC in tune with tribal vocabulary, beliefs and practices
- Private / public partnerships
 - Private practitioners and local NGO's
- Diagnosis:
 - Set up more designated microscopic centers in tribal areas
 - Fill up vacant laboratory technician posts
- Incentives
 - Provision for incentives (food, transport)

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