

Knowledge and Practices on Treatment of Tuberculosis among Private Practitioners in the South East Boarder Areas of Nepal

¹Dilip Kumar Yadav

¹La Grandee International College, Pokhara, Kaski, Nepal

ABSTRACT

Private sector is the first source of help for a large number of TB patients in South East Asia. This has emerged because of the inability of the public sector to meet population expectations so far. A descriptive cross-sectional study was carried out in the border areas of Nepal (Janakpur and Birgunj) and India (Sitamadhi and Raxaul, Bihar). Doctors working in the private clinics in the study area was taken as respondent. Out of 100 practitioners, only 1/3rd practitioners had correct knowledge regarding duration of cough to suspect T.B, only few practitioners (1/10th) had correct knowledge regarding number and time of specimen collection for the diagnosis, only about 3/5th practitioners had correct knowledge regarding condition of considering smear positive, about 4/5th practitioners had correct knowledge regarding duration of treatment, only 42% of Nepal and 18% of Indian practitioners had correct knowledge regarding duration of treatment to become non infectious, only 54% of Nepalese and 72% Indian practitioners were prescribing correct drugs in the initial and continuous phase, about 50% practitioners were prescribing chest X-ray for the investigation during continuous phase in both countries, only about 1/3rd practitioners were following the correct time period for performing the follow up investigation during continuous phase, only 1/3rd practitioners were declaring the patients as cure correctly, only about 1/5th practitioners were using mask while dealing with the patients and about 3/4th practitioners didn't do any activities for the patients who had interrupted the treatment. The knowledge and practices of private medical practitioners were unsatisfactory. Large number of respondents were not following correct pattern of treatment, depending on X-ray for diagnosis and also follow up and prescribing nine different types of regime which was inappropriate and expensive.

Key words: T.B., Private Practitioners, Sputum, X-Ray, Treatment, Drugs

Corresponding author: Dilip Kumar Yadav; La Grandee International College, Pokhara, Nepal. E-mail: dilipyadav2050@gmail.com

INTRODUCTION

Tuberculosis (TB) is a treatable and preventable disease. It is an infectious bacterial disease caused by Mycobacterium acid fast bacilli. In South East Asia Region (SEAR), nearly 3 million cases and 700,000 deaths occur every year; nearly 40% of the world's TB cases live in the SEAR. TB kills more than 2,000 people every day in this part of the world. Five countries Bangladesh, India, Indonesia, Myanmar and Thailand account for 95% of these deaths. The situation is likely to be further complicated by the rapidly expanding HIV/AIDS epidemic and the emergence of MDR-TB in the region. Moreover, TB is the largest single infectious cause of women's deaths, and thus identified as one of the topmost public health problems in the region.¹

Several studies have shown that the strong private sector in developing world is the major threats for effective control of TB. Almost half or more of the total TB patients first see the private health service providers for diagnosis and treatment. This private sector is both challenge and options for improving the current status of case detection and reducing the delay in seeking the NTP services globally and especially in developing part of the world. It is estimated that in the South-East Asia region, 60-70% of all patients with tuberculosis prefer to seek treatment with the private sector.^{1,2} Private sector has still remained alienated from DOTS implementation; hence case detection has remained low in many of these regions. Unfortunately, case management

practices in the private sector rely on X-ray and treatments too often are based on unproved and untested regimens. The majority of private providers are found in the informal sector. These providers have been defined as 'less than fully-qualified' and their practices are considered illegal.³ The main purpose of this study was to find out the knowledge and practices and the factors associated with the practices in the treatment of tuberculosis among private practitioners.

METHODS

Descriptive cross-sectional study was carried out in the border areas of Nepal (Janakpur and Birgunj) and India (Sitamadhi and Raxaul, Bihar). Doctors working in the private clinics in the study area was taken as respondent. Ethical approval was taken from the District Health Office. Verbal informed consent was taken from every selected subject. Subjects were assured for the anonymity and confidentiality of the information and allowed to refuse to participate in the study at any time if they wish. The sample size was 100 Doctors working in private clinic or hospitals. 50 samples were taken from Nepal and 50 samples from India. Study areas were selected purposely and the samples were selected randomly. The research instrument was semi-structured interview questionnaire and register of the clinics. The questionnaire had three parts. First part consisted of questions about the personal profile of the Doctors which included qualification, experience, training, etc. Second part consisted of questions about knowledge of the doctors on treatment of tuberculosis which included duration of cough, number and time of

sputum specimen, condition of considering smear positive, duration of initial and continuous phase, duration of treatment for sputum positive case to become non-infectious etc. Third part consisted of questions about practices of the doctors on treatment of tuberculosis patients which included drug regimen prescribed in the initial and continuous phase, single most important investigation performed during continuous phase to assess treatment outcome, when to declare patients as cure etc. The collected data was edited, categorized and coded manually. Data entry and statistical analysis were done in Microsoft Office Excel and Statistical Package for Social Science (SPSS) 11.5 and the appropriate test was performed to establish association.

RESULT

Total of 100 medical practitioner, 86 were male and 14 were female. Age of the practitioners ranged from 25 years to 50 years. Most of them were MBBS (44) and MD (43) (Table 1).

Table 1: Demographic characteristic of sample

Variable	Countries	
	Nepal	India
	N (%)	N (%)
Age of the respondent		
<30	4 (8)	3 (6)
30-40	36 (72)	23 (46)
40-50	10 (20)	24 (48)
Sex of the respondent		
Male	41 (82)	45 (90)
Female	9 (18)	5 (10)
Qualification		
MBBS	23 (46)	33 (66)
MS / MD	25 (50)	13 (26)
BAMS and other	2 (4)	4 (8)
Experience in years		
<5	15 (30)	4 (8)
5-15	13(26)	14 (28)
15-25	22 (44)	32 (64)

Most of the practitioners had good knowledge regarding mode of transmission and result of treatment but only 32% of Nepal and 38% of Indian practitioners had correct knowledge regarding duration of cough to suspect T.B, only 10% of Nepal and 12% of Indian practitioners had correct knowledge regarding number and time of specimen collection for the diagnosis, only 62% of Nepal and 58% of Indian practitioners had correct knowledge regarding condition of considering smear positive, only 92% of Nepal and 82% of Indian practitioners had correct knowledge regarding duration of treatment, only 40% of Nepal and 52% of Indian practitioners had correct knowledge regarding illegible contact to be investigated, only 42% of Nepal and 18% of Indian practitioners had correct knowledge regarding duration of treatment to become non infectious, only 76% Nepalese and 72% Indian practitioners had correct knowledge regarding treatment of MDT TB, 50% of Nepal and 56% of Indian practitioners were unknown about specification of DOTS strategy and only 56% Nepalese and 64% Indian practitioners had correct knowledge regarding drug used for prophylaxis (Table 2).

Table 2: Knowledge of the respondents:

Variable	Countries	
	Nepal	India
	N (%)	N (%)
Duration of cough required		
Two weeks	16 (32)	19 (38)
Three weeks	18 (36)	24 (48)
One month and more	16 (32)	7 (14)
Number and time of specimen collection		
Correct (3 specimen; 1 spot, 1 morning & 1 spot)	5 (10)	6 (12)
Incorrect	45 (90)	44 (88)
Condition of considering smear positive*		
+ve Patient with at least 2 sputum specimen	31 (62)	29 (58)
+ve Patient with at least 1 sputum specimen & X-ray is suggestive	33 (66)	41 (82)
+ve and culture is +ve Patient with at least 1 sputum specimen	16 (32)	19 (38)
Duration of initial phase (new smear +ve)		
Correct (2 month)	46 (92)	41 (82)
Incorrect (1 or 3 month or more)	4 (8)	9 (18)
Duration of continuous phase (new smear +ve)		
Four month	10 (20)	34 (68)
Six month	38 (76)	15 (30)
Eight month	2 (4)	1 (2)
Duration of treatment to become non infectious		
One week	5 (10)	2 (4)
Two weeks	21 (42)	9 (18)
One month	12 (24)	17 (34)
Two month	12 (24)	21 (42)
Don't know	0 (0)	1 (2)

* Multiple responses

Out of 100 practitioners, only 54% of Nepalese and 84% of Indian practitioners were prescribing correct drugs in the initial phase of the treatment regimen, only 54% of Nepalese and 60% of Indian practitioners were prescribing correct drugs in the continuous phase of the treatment regimen, 46% Nepalese and 54% Indian practitioner were prescribing chest X-ray for the investigation during continuous phase, only 36% Nepalese and 22% Indian practitioners were following the correct time period for performing the follow up investigation during continuous phase, only 38% Nepalese and 22% Indian practitioners were declaring the patients as cure correctly, only 24% Nepalese and 18% Indian practitioners were using mask while dealing with the patients, only 40% Nepalese and 56% Indian practitioners advised to stop the regimen until the effect disappeared, and 70% Nepalese and 78% Indian practitioners didn't do any activities for the patients who had interrupted the treatment.

Table 3: Practice of the respondents:

Variable	Countries	
	Nepal	India
	N (%)	N (%)
Drugs used in initial phase (New smear positive)		
Correct (HRZE)	27 (54)	42 (84)
Incorrect	23 (46)	8 (16)
Drugs used in continuous phase (New smear positive)		
Correct (HE)	17 (34)	3 (6)
Correct (HR)	10 (20)	20 (40)
Incorrect	23 (46)	27 (54)
Investigation during continuous phase		
Sputum AFB		
Sputum culture	25 (50)	21 (42)
Chest x-ray	2 (4)	2 (4)
	23 (46)	27 (54)

Time period for performing the above investigation		
Every week	2 (4)	0 (0)
Every two weeks	4 (8)	0 (0)
Every three weeks	0 (0)	3 (6)
Every month	26 (52)	36 (72)
At 2nd month, 5th month, 8th month	18 (36)	11 (22)
Conditions when patients are declared as cured		
Correct (Sputum for AFB becomes positive at 5th and 8th month)	19 (38)	11 (22)
Incorrect	31 (62)	39 (78)
Use of mask when dealing with patients		
Yes	12 (24)	9 (18)
No	38 (76)	41 (82)
Activities done after interruption of treatment		
Send letter/ Call by phone	5 (10)	4 (8)
Leave it	35 (70)	39 (78)
Inform public health office	10 (20)	7 (14)

DISCUSSION

This study prevailed that all the respondents had correct knowledge regarding mode of transmission (droplet) and outcome of treatment (curable disease). This finding is supported with the finding in Pakistan that about 96% respondents were aware of droplet infection as a mode of transmission of TB.³

It was found in the present study that only one third of the respondents had correct knowledge (two weeks) regarding duration of cough to suspect TB. This finding is consistent with the finding of a study in Pakistan that two-thirds of physicians were aware that TB should be suspected if the clinical symptoms last 2–4 weeks, 29.2% incorrectly thought that the symptoms should last more than 4 weeks. Such a delay in diagnosis would not only result in increased morbidity and mortality for the patients, but would also facilitate the spread of the disease among contacts.³

Our study showed that only few (10-12%) respondents had correct knowledge regarding number and time of specimen required to collect. This finding is consistent with the finding of a study from Chandigarh that about 72% stated that 3 sputum samples should be taken routinely for sputum microscopy, but only 6% told the correct timing of sputum collection i.e. spot - morning - spot.⁴

The results from this study showed that only one third of the respondents had correct knowledge (two sample of sputum for AFB positive) regarding condition of considering smear positive. This finding is consistent with the finding of a study from Chandigarh that 40% of the practitioners stated that X-ray was their first priority for diagnosis while 65% said X-ray and single sputum specimen positive for AFB were required for confirmation of the disease.⁴ This finding is also consistent with the study in Philippines that private physicians rely more on chest X-ray than sputum microscopy and also with the study in Kenya that private practitioners did not consider sputum smear microscopy crucial.^{5,6}

Study has shown that more than 4/5th respondents had correct knowledge regarding duration of initial phase whereas more than 2/3rd respondents had correct knowledge regarding

duration of continuous phase of the treatment of new smear positive case. Third finding is supported with a study done in the northern part of Pakistan in 1994 showed that 80% of private physicians were prescribing excessively long chemotherapy times of over 8 months.

Present study has shown that more than 3/4th respondents of Nepal and all the respondents of India had accepted that “failure in taking drugs regularly” as the main reasons for arising MDR cases. Similarly it was found in the present study that more than half of the respondents were unknown about the specification of DOTS strategy.

This study showed that only few practitioners referred patients to a government TB facility for treatment (20%). This finding is supported with the finding in Pakistan that few of the doctors referred patients to a government TB facility for treatment (19.2%). This reflects the lack of faith private practitioners have in government facilities. Another reason is probably the loss of financial benefits that private medical practitioners may incur on referring patients to government-run clinics.³

Study has shown that few of the physicians (12%) kept a record of their patients, which means that tracing treatment defaulters would be close to impossible. This study is supported with the study in Pakistan that only 22.5% of the physicians kept a record of their patients.³

It was quite interesting to know that only one fourth respondents of Nepal and more than one third respondents of India were prescribing correct regime and others were prescribing about eight different types of combination in the initial phase of the treatment of new smear positive cases. An important finding of this study is that the private medical practitioners’ were combining drugs inappropriately for the treatment at their will, but without any scientific rationale. This finding is substantiated by various studies in India.

A study in Chandigarh found that majority (88.4%) of private practitioners was not aware of, or were not prescribing the treatment regimen recommended by the RNTCP.³ A study in Maharashtra found that many private doctors were prescribing wrong TB drugs and they were not providing supervised treatment. A study conducted in Delhi had demonstrated that only 29.4% of the private practitioners were using the regimen recommended by the RNTCP. This study is also consistent with the finding in Nepal that 52% of physicians employed internationally or nationally recommended regimens, 14 different combinations were used. None of the doctors gave treatment under supervision.^{7,8}

This study has shown that about half of the respondents were performing sputum for AFB and about half of the respondents were performing chest X-ray as follow up in continuous phase. Over-dependence of the physicians on chest X-ray as the Diagnostic tool as well as for follow-up of a case with pulmonary TB was noteworthy.

A probable reason for this could be that X-rays are financially

more viable to the referring doctor than the cheaper sputum examination, especially in cases where there is some financial arrangement between the doctor and the diagnostic centre. This finding is substantiated by the studies in Pakistan that only 58.3% chose to use sputum microscopy with or without other investigations for diagnosis and only 35.0% used it as a follow-up test.³

Finding of the study shows that only one third respondents were performing follow up at correct time period. Majority of the respondents were performing follow up at the interval of one month.

About one third respondents of Nepal and one fifth respondents of India were declaring patients cured when sputum for AFB becomes negative at 5th and 8th month.

Finding of the study shows that about two third practitioners were spending less than 10 minutes to listen patient's problems. Similarly less than 1/4th practitioners were using mask when dealing with patients. 2/3rd practitioners of Nepal and more than 4/5th practitioners of India were encouraging patient by telling importance of full treatment. Similarly it was found in the present study that majority of

the respondents (46.52% of Nepal and 68.3% of India) were managing the side effects by stopping the treatment until side effect disappeared.

The results from this study showed that about 2/3rd of the respondents were not taking any action after interruption of treatment. This finding is consistent with the finding of a study from Chandigarh that only 8% of the private practitioners send the information to District Tuberculosis Centre.⁵ This finding is also consistent with the finding of a study from Pakistan where this rate was 6%.³

It was found in the present study that more than 1/3rd of the respondents of Nepal and more than half of the respondents of India was following the DOTS regime because of WHO recommendation and free of cost. Similarly it was found in the present study that the main reason for not following DOTS regime is lack of training and unavailability of services. Majority of the practitioners wanted to get training to improve the treatment of TB patients. This finding is also supported with the study in Chandigarh that majority of the private practitioners wanted to be a part of RNTCP.⁴

CONCLUSION

It is worth mentioning here that the private sector is the first source of help for a large number of TB patients in South East Asia. This has emerged because of the inability of the public sector to meet population expectations so far. However, the knowledge and practices among private medical practitioners are often unsatisfactory. A large number of respondents were not following correct pattern of treatment. Most of the respondents were depended on X-ray for diagnosis and also follow up. They were prescribing nine different types of regime which was inappropriate and expensive. Few respondents were treating the patients longer than WHO criteria. Drugs were not provided under direct supervision. There was no system for recording and reporting. Most of the respondents were not taking any action after interruption of treatment.

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to Dr. B.S. Lal and Dr. Varid Mala Jain (Associate Professor, AAI-DU, India) for their regular valuable academic guidance and all the participants for their kind cooperation during study. I would also like to express my thanks to Mr. Dipendra Yadav and Hari Kafle (Lecturer, Pokhara University for their kind cooperation and support.

REFERENCES

1. Narayan JP. Tuberculosis Epidemiology and Control. New Delhi, WHO Regional Office for South-East Asia 2002.
2. Berman P. "Rethinking Health Care Systems: Private Health Care Provision in India." World Development 1998; 26(8):1463-1479.
3. Khan J, Malik A, Hussain H, Ali NK, Akbani F, Hussain SJ *et al.*. Tuberculosis diagnosis and treatment practices of private physicians in Karachi, Pakistan East Mediterr Health J. 2003 Jul; 9.
4. Thakur JS, Kar SS, Sehgal A, Kumar R. Private sector involvement in tuberculosis control in Chandigarh. Indian J Tuberc. 2006; 53:149-153.
5. Portero JL, Rubio M. Private practitioners and tuberculosis control in the Philippines: strangers when they meet? Trop Med Int Health. 2003 Apr; 8(4):329-35.
6. Chakaya JM, Meme H, Kwamanga D, Githui WA, Onyango-Ouma WO, Gicheha C, Karimi F, Mansoer J, Kutwa A. Planning for PPM-DOTS implementation in urban slums in Kenya: knowledge, attitude and practices of private health care providers in Kibera slum, Nairobi. Int J Tuberc Lung Dis. 2005 Apr; 9(4):403-08.
7. Hurtig AK, Pande SB, Porter JDH, Bam DS. Tuberculosis treatment and private practitioners, Kathmandu Valley. Journal of Nepal Medical Association 2000; 39:163-168.
8. Hurtig AK, Pande SB, Baral SC, Newell J, Porter JD, Bam DS. Linking private and public sectors in tuberculosis treatment in Kathmandu Valley, Nepal. Health Policy Plan. 2002; 17:78-89.

