



Original Research Article

## Awareness of TB among New TB/HIV Co-infected Cases Defaulted From DOTS in Nalgonda District- Telangana. A Case Control Study

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### ABSTRACT

**Background:** The therapeutic regimens as recommended by RNTCP have been shown to be highly effective for both preventing and treating tuberculosis but poor adherence to medication is a major barrier to its global control

**Aim & Objective:** To assess the awareness levels among TB/HIV co-infected cases defaulted from DOTS in Nalgonda district. Setting and design: case control study conducted in Nalgond.

**Methods and material:** All New TB/HIV co-infected and DOTS defaulted patients during January 2010 to December 2012 were selected. Of the 154, 23 were died & 11 patients could not able to trace were excluded. So the total available cases were 120 for these age and sex matched controls (TB/HIV co-infected patients and completed dots regimen successfully) were selected.

**Results:** The mean age was  $36.5 \pm 9$  years, poor knowledge (OR 9: CI 4.8-17) associated with treatment default and statistically significant ( $p < 0.05$ ).

**Conclusion:** poor knowledge was one of the risk factor leads to DOTS treatment default among TB/HIV co-infected patients.

**Keywords:** TB/HIV co-infected, DOTS, Defaulters, Tuberculosis

### INTRODUCTION

TB and HIV co-infection is when people have both HIV infection, and also either latent or active TB disease. In 2011 430,000 people are estimated to have died of TB and HIV co-infection, in addition to the 990,000 people who died from TB alone. [1]

The World Health Organisation (WHO) reported that in 2010, 350,000 people died who had active TB and HIV infection, meaning an increase between

2010 and 2011. Yet despite this in November 2012, UNAIDS reported that there had been a 13% reduction in TB associated HIV deaths in the last two years. The undercurrent of the global HIV epidemic is driving the resurgence of TB, and is already having an impact on the global TB epidemic, especially in sub-Saharan Africa. Indeed HIV and TB co-infection is a major public health threat that directly jeopardizes the success of the

antiretroviral scale up that has resulted in millions of people living with HIV in developing countries now receiving HIV antiretroviral treatment. [1]

The Nalgonda district situated in Telangana state and Health care services are provided through 74 PHCs, 7 CHCs, 4 Area hospitals and 1 District hospital in Nalgonda district. There are 07 Tuberculosis Units (TU) 33 designated microscopic centers (DMCs) and 139 DOTS centers in Nalgonda. [2]

The total TB patients registered during January 2010 to December 2012 were 13,758 (approximately 0.4% of total population), Among which 1927 were HIV/TB co-infected Patients which was approximately 14% of total TB patients registered among which 154 were HIV/TB DOTS defaulters which was approximately 7% of total HIV/TB co-infected patients. [2]

There is paucity of data regarding the awareness of tuberculosis among TB/HIV co-infected patients in the state of Telangana and no such studies have been conducted in Nalgonda district.

#### ***Aim and objectives:***

To assess the awareness levels among TB/HIV co-infected cases defaulted from DOTS in Nalgonda district.

## **MATERIALS & METHODS**

***Study Design:*** Case control study design

***Study period:*** January 2010 to September 2013

***Study area:*** Nalgonda district

***Study population:*** patients defaulting from TB treatment (two months or more) among HIV/TB co-infected patients registered under RNTCP programme were considered as 'cases' and those completed DOTS treatment successfully (6 months) among TB/HIV patients treated as 'controls'. All DOTS centers (139) & all tuberculosis units

TUs (7) of Nalgonda district comes under RNTCP were selected.

***Sample size*** (Census survey method): All New HIV/TB co-infected and DOTS defaulted patients registered under RNTCP Nalgonda district for treatment during January 2010 to December 2012 were selected. There were 1927 HIV/TB co-infected patients on DOTS regimen. Of the 154, 23 were died & 11 patients could not be traced were excluded. So the total available cases were 120 for these age and sex controls (HIV/TB co-infected patients and completed dots regimen successfully) were selected.

#### ***Tools Used:***

1 Pre-tested semi-structured interview schedule

2 TB Registers available at the DTC

#### ***Ethical consideration:***

The purpose for seeking information was explained in detail to individual patient. Only informed verbal consent was obtained prior to interview as there was no other intervention/procedure involved. Patients' consent to participate in the interview was recorded on the individual interview schedule which was signed by the interviewer. The data collected was presented as an aggregate and was not linked to any individual in the study. Patients were assured that non participation in the interview will not jeopardize their access to any government health center subsequently. As a service component, patients were informed about the disease and its treatment to bridge the observed gap in their knowledge and defaulted patients were motivated to resume treatment. The data obtained from patient records and interviews were securely held and confidentially maintained by study staff. The research activity was approved by the Institution Ethics Committee of Kamineni institute of medical sciences, Narketpally, Nalgonda

district and State tuberculosis office Andhra Pradesh state.

The eligibility and exclusion criteria for case enrolment are listed below:

**Inclusion Criteria:**

- TB/HIV co-infected patients 15 years and above age, received & defaulted from TB treatment under DOTS(two months or more)
- Registered During January 2010 and December 2012

**Exclusion criteria:**

- Patients that were died
- Unable to trace
- Relapse
- Failure cases
- MDR & XDR

**Data Analysis:**

Data was entered in excel sheet and analysed for proportions. Mean and standard deviation was calculated, Risk was estimated by using Odds ratio and 95% confidence intervals were set by using statistical package for social sciences version 16.0.chsquare test was used to know the statistical significance(p<0.05) and multivariate logistic regression was used to know the interactions and adjusted odds ratio was calculated. Graphical presentations line bar charts and pie charts were used where needed.

**Knowledge Score:** Awareness of study subjects were assessed for causation, clinical manifestations, duration of treatment, preference of medical care and prevention of TB by an interview schedule. This schedule contained 7 close ended questions which had a scoring system given where one mark was given for each question if answered correctly. No negative marking was done for incorrect answers. Scoring was done by giving due weightage to answers related to the knowledge questions answered. Subjects were classified into those less than or equal

to four and more than four as poor, good knowledge respectively.

**RESULTS & DISCUSSION**

Table 1 showed that among cases, 49(40.83%) not have the adequate knowledge compare to 25 (20.83%) controls with regard to symptoms of Tuberculosis. Because illiteracy was more among cases compared to controls and many cases belongs to nuclear families compared to controls. Our findings were similar with other studies done by Vijay S et al, [3] and Sophia Vijay et al, [4] stated that 40% and 85% of defaulters do not have knowledge respectively.

**Table 1: TB disease awareness levels among HIV/TB co-infected patients (n=240)**

Risk factors	HIV/TB co-infected patients		Total (n=240) n (%)
	DOTS Defaulters (n=120) n (%)	DOTS Completed (n=120) n (%)	
<b>Knowledge regarding Recognition of symptoms of TB</b>			
Not adequate	49(40.83)	25(20.83)	74(31)
Adequate	71(59.17)	95(79.17)	166(69)
<b>Knowledge regarding Cause of TB</b>			
No	37(30.83)	4(3.33)	41(17)
Yes	83(69.17)	116(96.67)	199(83)
<b>Preferred system of care</b>			
Herbal	32(26.67)	4(3.33)	36(15)
Allopathy	88(73.33)	116(96.67)	204(85)
<b>Is TB curable</b>			
No	37(30.83)	20(16.67)	57(24)
Yes	83(69.17)	100(83.33)	183(76)
<b>Knowledge on duration of TB Treatment</b>			
No	96(80)	40(33.33)	136(57)
Yes	24(20)	80(66.67)	104(43)
<b>Knowledge on TB Transmission</b>			
No	100(83.33)	50(41.67)	150(62.5)
Adequate	20(16.67)	70(58.33)	90(37.5)
<b>Knowledge on prevention of spread of TB</b>			
No	55(45.83)	23(19.17)	78(32.5)
Yes	65(54.17)	97(80.88)	162(67.5)

Among cases, 32(26.67%) used herbal treatment to manage TB compared to 4(3.33%) controls. Because of illiteracy many of cases went to traditional healers (quacks) who are playing a dominant role in treating the diseases in rural areas and strong belief in the community over them. Study findings were consistent with other studies done by Samuel Agyemang BOATENG, [5]

stated that 60% of defaulters preferred herbal treatment.

Among cases 37(30.83%) do not know that TB is curable disease compared to 20(16.67%) controls. Studies were consistent with other study done by Samuel Agyemang BOATENG, [5] revealed that 37% of defaulters do not know the cause of TB

Among cases, 96(80%) cases do not have knowledge regarding duration of DOTS treatment compared to 40(33.33%) controls. Many of cases not been told by the DOTS provider regarding the duration of treatment and some of them confused regarding the DOTS and the ART treatment regimens. Our study findings were consistent with other studies done in Samuel Agyemang BOATENG [5] showed that 31% of defaulters do not know the duration of default.

Among cases, 100(83.33%) do not have the knowledge regarding tuberculosis

transmission compared to 50 (41.67%) controls. Similar findings were observed in other study conducted in Ghana [5]

Among cases 37 (30.83%) do not have knowledge regarding cause of TB compared to 4(3.33%) controls. Study finding were consistent with other study conducted by Frederick AD Kaona et al, [6] revealed that 25% of defaulters do not know the cause of disease.

Among cases, 55(45.83%) HIV/TB co infected patients do not have the knowledge regarding prevention of spread of tuberculosis compared to 23(19.17%) controls.

Table 2 showed that The mean age was 36.5±9 years, poor knowledge (OR 9: CI 4.8-17) associated with treatment default and statistically significant (p<0.05). Among cases 60% had poor knowledge score compared to 17(14%) controls. Poor knowledge was significantly strongly associated (OR:9) with default.

**Table 2: Knowledge Levels of study subjects regarding TB disease (n=240)**

Risk factors	HIV/TB co-infected patients		Total (n=240) n(%)	OR (95% CI) (df=1)
	DOTS defaulters (n=120) n(%)	DOTS Completed (n=120) n(%)		
Level of knowledge				
Poor(≤ 4 score)	72(60)	17(14)	89(37)	9*
Good(>4 score)	48(40)	10(86)	151(63)	(4.8-17)

\*p<0.05 statistically significant

## CONCLUSION

Poor knowledge is strongly associated with DOTS default among TB/HIV co-infected patients.

### Limitations:

1. There could be a recall bias in our study.
2. The study group was representative only of patients who sought health care at government facilities.
3. The study does not include patients who had diagnosis and treatment from the Private sector. So the results of this study cannot be generalized to the population in Nalgonda District.

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