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Original Research Article

Assessment of adherence to ATT among HIV-TB co-infected patients attending the ART centre of a tertiary care hospital of Jharkhand

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ABSTRACT

Background: Despite being preventable and curable, TB is the leading cause of HIV associated mortality. It is the most common opportunistic infection among HIV positive individuals with CD4 cell count <500/ mm^3. Worldwide the number of people infected with both HIV & TB is rising. The objective of the study was to describe the socio-demographic profile of HIV-TB co-infected patients and to assess the adherence of HIV TB Co-infected patients to anti tubercular treatment (ATT) attending ART Centre, RIMS, Ranchi.
Methods: It was a hospital based prospective study done at Rajendra Institute of Medical Sciences (RIMS), Ranchi. Duration of study was 14 months. A total of 117 patients were registered during the study period and were followed up for adherence to ATT.
Results: Out of 117 patients 4 were excluded. Among 113 patients, mostly were male (74.3%) and from rural background (69.9%). Majority (94.7%) of the patients came for regular follow up and took medicines as advised. Adherence was significantly associated with education (p=0.025).
Conclusions: In this study it was concluded that education significantly affected adherence to ATT among HIV-TB Co-infected patients of ART Centre of RIMS, Ranchi.

Keywords: Adherence, HIV-TB, ART centre

INTRODUCTION

TB is the leading cause of HIV associated mortality. It is the most common opportunistic infection among HIV positive individuals with CD4 cell count <500/mm^3. Worldwide the number of people infected with both HIV and TB is rising. Globally, an estimated 9.0 million people developed TB and 1.5 million died from the disease, 360 000 of whom were HIV-positive in 2013.[1] With correct TB treatment, HIV positive patients having TB can gain average two additional years of life.[2]

The UNAIDS 2016-2021 strategy is a bold call to action to get on the "Fast-Track" and reach people being left behind. It is a call to reach the 90-90-90 treatment targets, to close the testing gap for 90 per cent of the people with HIV being aware of their infection, 90 per cent of people aware that they have HIV initiating ART and 90 per cent of those receiving ART having undetectable levels of HIV in their blood by 2020. The sustainable development goal (SDG) target is to end the AIDS epidemic by 2030.[3]

Under newer initiatives of RNTCP there is provision of daily regimen for all TB/HIV co–infected patients across the country. To reduce the burden of TB among People living with HIV AIDS (PLHA) comprehensive strategies are implemented with single window service delivery for TB and HIV, rapid diagnosis with CBNAAT, AIC

measures at ART centre and fixed dose combination (FDC) daily therapy at selected 30 high burden ART centres in five states of India, from April 2015. The same strategy is being scaled up nationwide in year 2016.[4]

It is prudent to understand the situation of TB-HIV Co-infection in our country and Jharkhand. This study aims to describe the socio demographic profile of HIV-TB co-infected patients attending the ART Centre of RIMS, Ranchi and assess their adherence to ATT.

METHODS

This was a hospital based prospective study done at the ART Centre of RIMS, Ranchi. All HIV-TB Co-infected patients attending ART Centre of RIMS, Ranchi taking both ART and ATT and willing to participate in our study during April 2016 – September 2016 were included in the study. Same subjects were followed till outcome of TB treatment. Exclusion criteria were multi drug resistant (MDR)-TB Patients, not taking ART and patients unable to communicate. The sampling method used in the study was total consecutive sampling. A total of 117 patients were registered during the data collection period out of which 3 were not co-operative and one case was of Multi-drug resistant TB (MDR-TB). So the final sample size came out to be 113. The distribution of study subjects is shown in Table 1. Period of study was fourteen months in which patients were taken in first six months (April 2016–September 2016) and followed up for next eight months (October 2016–May 2017). Ethical approval for the study was obtained from Institutional Ethics Committee of RIMS, Ranchi. Interview with study subjects were conducted after written informed consent in Hindi language. The subjects were explained about the purpose of study. Data was collected by interview method using the pre tested questionnaire. Proper template was generated for data entry in MS-Excel sheet. Data entry was done and 10% of data were randomly checked to assure the quality of data entry under the supervision of Guide. The data were analyzed by using software- Statistical Package for Social Science (SPSS) 20.0 version. Chi square test was applied to see the statistical significant association/ difference categorical variable. For all statistical analysis $p<0.05$ was considered significant. Adherence to ATT was assessed by asking for follow up sputum examination.

RESULTS

Socio-demographic profile of HIV-TB Co-infected patients are shown in Table 2. Out of 113 HIV-TB Co-infected patients 107 were taking ATT regularly and adhered to ATT shown in Table 3. Chi-square test was applied to know the association between socio demographic profile and adherence to ATT and it was found that education is significantly associated with adherence to ATT by patients. It is shown in Table 4.

Table 1: Study subject distribution and final sample size.

Total HIV-TB co-infected patients registered at ART Centre, RIMS, Ranchi during April 2016–September 2016	117
MDR-TB case	01
Un co-operative patients	03
Final sample size (n)	113

Table 2: Socio-demographic profile of HIV/TB co-infected patients (n=113).

Variables	Frequency	Percentage (%)
Gender		
Male	84	74.3
Female	29	25.7
Total	113	100.0
Ethnicity		
Tribal	20	17.7
Nontribal	93	82.3
Total	113	100.0
Residence		
Urban	34	30.1
Rural	79	69.9
Total	113	100.0
Education		
Illiterate	34	30.1
Primary	40	35.4
Secondary	32	28.3
Higher secondary	04	3.5
Graduate and above	03	2.7
Total	113	100.0
Occupation		
Govt. job	03	2.7
Pvt. job	08	7.1
Farming	24	21.2
Industrial/factory worker	10	8.8
Student	08	7.1
Unemployed	22	19.5
Housewife	19	16.8
Total	113	100.0
Socio-economic status		
Upper class	04	3.5
Upper middle class	0	0
Middle class	05	4.4
Lower middle class	25	22.2
Lower class	79	69.9
Total	113	100.0

Table 3: Adherence to ATT among HIV/TB co-infected patients (n=113).

Adherence to ATT	Frequency	Percentage (%)
Yes	107	94.7
No	06	5.3
Total	113	100.0

Table 4: association between socio-demographic profile and adherence to ATT of HIV/TB co-infected patients (n=113).

Variables	Adherence to ATT		Total	P value
	Yes (107)	No (06)		
	N (%)	N (%)		
Gender				
Male	79 (73.8)	05 (83.3)	84	0.674
Female	28 (26.2)	01 (16.7)	29	
Residence				
Rural	74 (69.2)	05 (83.3)	79	0.461
Urban	33 (30.8)	01 (16.7)	34	
Ethnicity				
Tribal	18 (16.8)	02 (33.3)	20	0.302
Non-tribal	89 (83.3)	04 (66.7)	93	
Education				
Illiterate	31 (29)	03 (50)	34	0.025
Primary	40 (37.4)	0	40	
Secondary	31 (29)	01 (16.7)	32	
Higher secondary	03 (2.8)	01 (16.7)	04	
Graduate and above	02 (1.9)	01 (16.7)	03	
Occupation				
Govt. services	02 (1.9)	01 (16.7)	03	0.128
Pvt. jobs	08 (7.5)	0	08	
Farmers	23 (21.5)	01 (16.7)	24	
Daily wages	09 (8.4)	01 (16.7)	10	
Industry workers	19 (17.8)	0	19	
Student	08 (7.5)	0	08	
Housewife	19 (17.8)	0	19	
Unemployed	19 (17.8)	03 (50)	22	
Socio economic status				
Upper class	03 (2.8)	01 (16.7)	04	0.129
Upper middle class	00	00	00	
Middle class	04 (3.7)	01 (16.7)	05	
Lower middle class	24 (22.4)	01 (16.7)	25	
Lower class	76 (71)	03 (50)	79	

DISCUSSION

In this study, more than half of the patients were male (74.3) and females contributed 25.7%. A study done by Bahl et al at Chest Diseases Hospital, Jammu (Jammu and Kashmir), it was found that 66.67% HIV-TB Co-infected patients were male while females contributed 33.33%.[5] A study done by Bahl et al at Chest Diseases Hospital, Jammu (Jammu and Kashmir), it was found that 79.2% patients belonged to rural background where as urban population contributed 20.8% which goes with the present study.[5] In a study by Mohan et al in a South Indian city urban slum patients were 55.8% where as 25.8% of HIV-TB Co-infected patients belonged to rural residential layouts.[6] Patients from commercial areas were 1.8%. In the present study, more than one third (40, 35.4%) patients were educated up to primary level followed by illiterates (34, 30.1%) and secondary (32, 28.3%). Some (4, 3.5%) patients were having education up to higher secondary level and some (3, 2.7%) having up to graduation and above. The level of education is very much important in health seeking behavior of HIV/TB co-infected patients. A study done by Eticha et al in Mekelle, Ethiopia, illiterate patients were 25% of total HIV-TB co-infected patients. Primary education was received by 14.2%, secondary by 18.3% and tertiary education by 13.3%.[7] Another study by Satti et al at Nalgonda (Dist.) Telangana, patients up to primary education were 57% where as 43% have secondary and above level of education.[8] On the basis of occupation most of the patients (24, 21.2%) were farmers followed by unemployed patients (22, 19.5%) and both industrial worker and house wives (19, 16.8%). Daily wages workers were (10, 8.8%) whereas (8, 7.1%) were students and in private job each. Only few patients were having govt. job (3, 2.7%). In a study conducted by Bahl et al at Chest Diseases Hospital, Jammu (Jammu and Kashmir) housewives contributed 32.14% followed by drivers (24.99%).[5] Daily wage workers were 3.57% and students 2.38%. Mohan et al conducted a study at south Indian

city and found that unskilled workers were 17.3% followed by drivers 8.6%.[6] Out of 113 patients, most of them were from lower class (69.9%) followed by lower middle class (22.2%). In a study conducted by Mohan et al at south Indian city class IV patients contributed 64.8% of all patients according to modified Kuppuswamy scale 2011.[6] In present study more than 2/3rd of the patients (77.87%) were married followed by unmarried patients (16.8%). In the present study majority (94.7%) of the patients came for follow up sputum examination regularly and took ATT regularly. Only 5.3% patients took ATT irregularly. In a study done by Amuha et al at Mbarara hospital, Uganda, it was found that 25% of the HIV-TB Co-infected patients were non adherent to ATT where as 75% were adherent.[9] A study done by Eticha and Kassa in Mekelle, Ethiopia, it was found that socio-demographic profile have no significant association with non-adherence to ATT.[9] Patients who do not have care givers were more likely to be non-adherent as compared to those who had (AOR=3.73, 95% CI=1.15 –12.11). Another study by Satti et al at Nalgonda (Dist.) Telangana, it was found that socioeconomic status scale, occupation and marital status showed significant association ($p<0.05$) with non-adherence to ATT.[8]

CONCLUSION

Gender wise more than half of the patients are male (74.3) and belonged to were nontribal ethnicity (82.3%). As far as residence is concerned majority (79, 69.9%) patients belonged to rural area and 34, 30.1% belonged to urban area. This could be due to the fact that 75.95% of people live in the rural area and 24.95% of people live in urban area in the Jharkhand state. According to educational status, more than one third (40, 35.4%) patients were educated up to primary level followed by illiterates (34, 30.1%) and secondary (32, 28.3%). On the basis of occupation most of the patients (24, 21.2%) were farmers followed by unemployed patients (22, 19.5%) and both industrial worker and house wives (19, 16.8%). Daily wages workers were (10, 8.8%) whereas (8, 7.1%) were students and in private job each. Only few patients were having govt. job (3, 2.7%). Out of 113 patients, most of them were from lower class (69.9%) followed by lower middle class (22.2%) according to modified BG Prasad's classification 2016. Majority (94.7%) of the patients came for follow up sputum examination regularly and also took ATT regularly. In the present study socio–demographic profile did not show any significant association with follow up sputum examination except education which was significantly associated ($p<0.025$). Educational level influences the health seeking behaviour of HIV-TB Co-infected patients.

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