PREVALENCE OF HIV INFECTION AMONG THE TUBERCULOSIS PATIENTS IN LARKANA

Riaz Husain Shah*, Naveed Inayat**, Muzaffar Ali Khooharo***, Shakir Qayoom****, Mehtab Akhtar****

*Liaquat National Hospital and Medical College, Stadium Road, Karachi, 74800, Pakistan
** Liaquat University of Medical & Health Sciences, Jamshoro - Pakistan
*** Provincial TB Control Program, Sindh - Pakistan
**** Chandka Medical College, Larkana - Pakistan

Address for correspondence:
Riaz Hussain Shah
Liaquat National Hospital and Medical College, Stadium Road, Karachi, 74800, Pakistan

E-mail: riazshahdr@yahoo.com

ABSTRACT

Objective: To determine the prevalence of HIV infection among the tuberculosis patient in Larkana.

Background & Method: The prevalence of HIV Co-infection among the TB is a major health problem worldwide. The HIV and tuberculosis are deadly combinations. They are for more destructive together, then either disease alone. This is the retrospective study was conducted between April 2008 to June 2015 at TB DOTS Clinic, Department of Pulmonology Chandka Medical College Hospital / Shaheed Mohtarma Benazir Bhutto Medical University, Larkana.

Results: Of a total 5822 registered tuberculosis patients, 5030 (86.30%) patients were screened by rapid HIV antibody test. A total 81 (1.61%) found to be reactive on rapid test. Out of 81 which were reactive on rapid test, 74 (1.47%) patients were HIV positive by ELISA. Of whom 69 (93.2%) male and 5(6.7%) were female. The prevalence of HIV was higher among Extra Pulmonary Tuberculosis patients (3.49%) and in male gender (2.20%).

Conclusion: This study suggested that prevalence of HIV among the tuberculosis patients in Larkana is higher than the reported from other sentinel sites of Sindh Pakistan in 2012.

Key Words: HIV, Tuberculosis, Co-infection; Prevalence; Larkana.

This article may be cited as: Shah RH, Inayat N, Khooharo MA, Qayoom S, Akhtar M. Prevalence of HIV infection among the tuberculosis patients in Larkana. Pak J Chest Med 2017; 23(1): 20-3

INTRODUCTION

Tuberculosis & HIV infection together remain a public health problem. It is hypothesized that person infected with tubercle bacilli are at an increase risk of developing clinical disease if they become infected with HIV. It is estimated that world-wide nearly 2 billion people are infected with Mycobacterium tuberculosis, 36 million are HIV infected and over 10 million are duly infected with Mycobacterium tuberculosis and HIV. Tuberculosis is the commonest opportunistic infection occurring among the HIV positive persons and it is estimated that 60 – 70 % of HIV positive persons will develop tuberculosis in their life time.[1] Prevalence of HIV among the general population in Pakistan is still low (0.1%) and their estimated number of cases in the country of 180 million people is under 100000, of which only about 7000 cases are reported. Tuberculosis prevalence and incidence are increasing in some parts of the world[2,3] Pakistan is ranked as the fifth highest burden country for tuberculosis in the world and contributes about 63% TB burden in the Eastern Mediterranean Region.[4] Pakistan has moved from having low-HIV prevalence to a concentrated-HIV epidemic.[5]

METHODOLOGY

We conducted a retrospective study at DOTS clinic, Pulmonology department Chandka Medical College Hospital / Shaheed Mohtarma Benazir Bhutto Medical University Larkana, between April 2008 – June 2015 to determine the prevalence of HIV infection among Tuberculosis patients enrolled during the period at TB DOTS clinic Chandka Medical College Hospital Larkana with following criteria, were included:

1. Pulmonary T.B patients either Smear Positive or Smear Negative cases.
2. Extra-Pulmonary Tuberculosis.
3. Those patients who have given their written consent.
4. All the age groups.

The basic demographic and laboratory data were recorded on proforma. The sample of the consented patients was first screened as per NTP protocol by rapid HIV antibody test. The sample of those patients whose HIV test was positive, were sent through HIV / AIDs diagnostic and treatment centre, Chandka Medical College Hospital, Larkana to Sindh AIDs

Control program Laboratory Karachi for confirmation on ELISA testing.

DATA ANALYSIS

Statistical package of social sciences (SPSS) was used to compile the results

RESULT

Of a total 5822 registered tuberculosis patients, 5030 (86.30%) patients were screened by rapid HIV antibody test. A total 81 (1.61%) found to be reactive on rapid test. Figure No. 01. Out of 81 which were reactive on rapid test, 74 (1.47%) patients were HIV positive by ELISA. Figure No. 02. Of whom 69 (93.2%) male and 5(6.7%) were female. The majority of HIV infected TB patients belongs to the age group of 15-24 years (24 (32.4%) and 25 – 34 22(99.7%) patients. Table No. 1. Among the HIV positive TB patients 30 (40.5%) had bacteriologically positive, followed by 24(32.4%) and 15 (20.2%) who have Extra-pulmonary and bacteriologically negative respectively. Table No. 01. The prevalence of HIV was higher among Extra Pulmonary Tuberculosis patients (3.49%) and in male gender (2.20%). Table 1 & 2.

Figure 1: HIV prevalence by Rapid test in Tuberculosis patients.

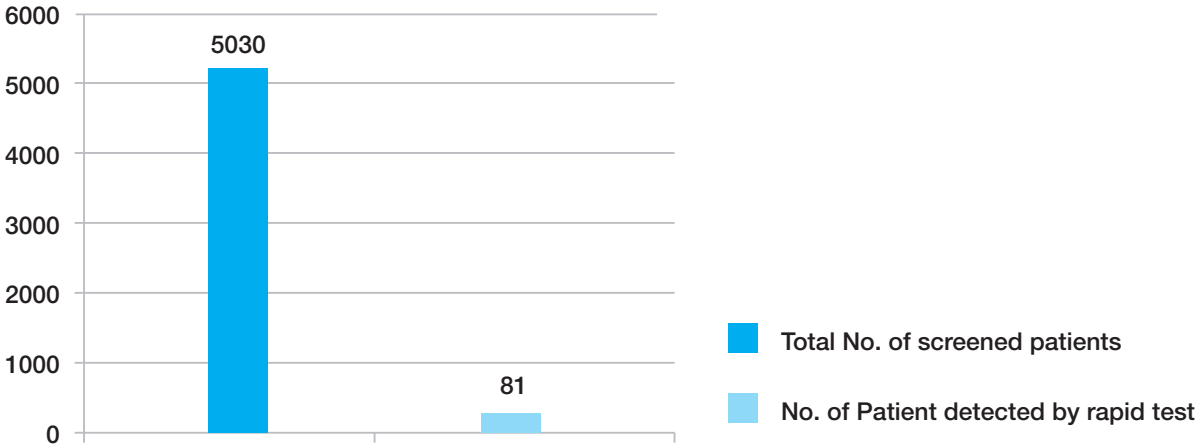

Figure 2: HIV prevalence by ELISA test in rapid detection TB patients

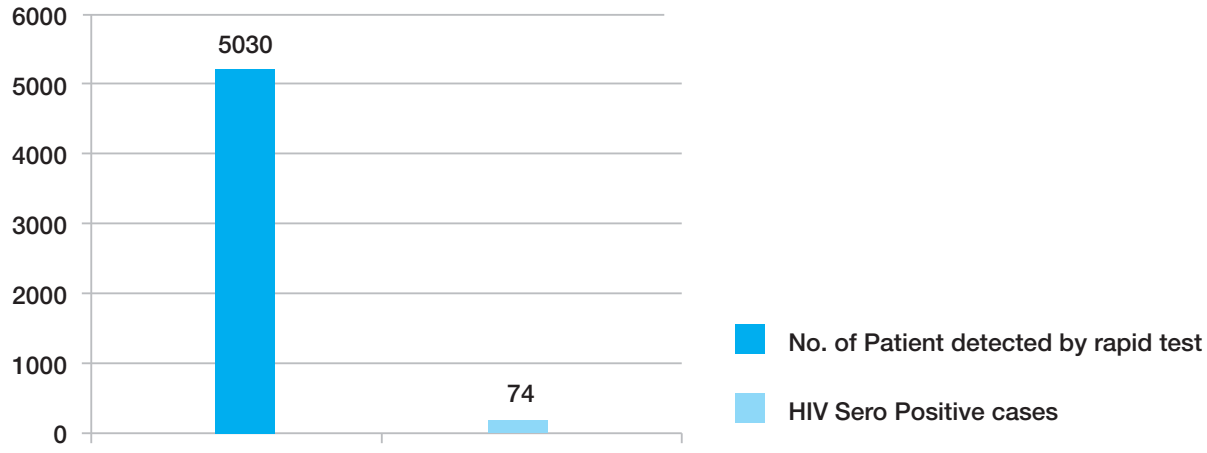

Table 1: HIV Sero Prevalence among the tuberculosis according to age group and gender

Age Group (Yrs.)	Male		Female	
	Total tested	HIV Positive No (%)	Total tested	HIV Positive No (%)
5 to 14	85	0	117	0
15-24	889	24 (2.69)	675	0
25-34	659	22 (3.33)	414	1 (0.24)
35-44	425	14 (3.29)	239	2 (0.83)
45-54	465	5 (1.07)	200	0
55-64	368	3 (0.81)	147	1 (0.68)
>65	239	1 (0.41)	108	1 (0.92)
Total	**3130 (62.2)**	**69 (2.20)**	**1900 (37.7)**	**5 (0.67)**

Table 2: HIV Sero Prevalence among the tuberculosis patients according to diagnostic categories of tuberculosis

Diagnostic Categories	Male		Female	
	Total tested	HIV Positive No (%)	Total tested	HIV Positive No (%)
Bacteriologically Positive	1906	30 (1.58)	999	2 (0.20)
Bacteriologically Negative	537	15 (2.79)	356	0
Extra Pulmonary	687	24 (3.49)	545	3 (0.55)
Total	3130 (62.2)	69 (2.20)	1900 (37.7)	5 (0.26)

DISCUSSION

The prevalence in TB-HIV co-infection widely varies, the prevalence of HIV among the TB patients, varies from 3.8 to 72.3 %, where as the prevalence of TB-HIV positive patients varies from 2.9 to 64.5%.[6] Several studies about the prevalence of HIV infection among the tuberculosis patients have been published worldwide. Some published reports regarding HIV prevalence in TB patients give widely variable rates worldwide, 60% in Kampala (Uganda),[7] Zambia 60%,[8] Nigeria 42.2%,[9] USA 3.4%.[10] In India there is also variation in HIV prevalence in TB patients that have been reported by Solomon et.al found 0.77% in 1991 and 3.35% in 1993.[11] In this study the prevalence of HIV among the Tuberculosis patients was 1.47% however this finding is higher than of the study conducted at different sentinel sites in Sindh Pakistan in 2012 (0.341%) by Hasnain J at all. [12] Generally the prevalence of HIV infection among the TB suspect is believed to reflect the HIV prevalence in the general population. So our data may suggest low HIV infection is our population, than African, India and other countries. But it is increasing in our population so we have to try to control HIV prevalence and Tuberculosis as low as possible.

CONCLUSION

This study suggests that prevalence of HIV among the tuberculosis patients in Larkana is higher there reported from other sentinel sites of Sind Pakistan in 2012.

RECOMMENDATIONS

There are 9 BMU and 34 PPM DOTS facilities of Larkana district and only one sentinel site Chandka Medical College, Hospital Larkana has the facility of HIV counseling and testing services. So, it is assumed

that we are missing a lot of HIV positive patients among the total enrolled TB cases, so, our data justify for caring out HIV testing in all the enrolled TB patients in Larkana Sindh and other parts of our country.

ACKNOWLEDGMENTS

The Authors are thankful to Dr. Abdul Karim Shaikh, Deputy Director PTP Sindh, Larkana region, Dr. Hola Ram In charge HIV-AIDs Control Program Chandka Medical College Hospital, Larkana and Mr. Suhail Ahmed Mashori, Social Organizer TB DOTS Clinic CMCH Larkana especially for their support and genuine assistance during data collection and also thanks to Mr. Munawar Ali Pathan DOTS Facilitator Social Support PMDT Site CMCH Larkana for his help in preparation of this report.

REFERENCES

1. Swaminathan S, Ramachandran R, Bhaskar R, Ramanthan U, Prabhakar R and Datta M. Risk of development tuberculosis in HIV infected individuals in India Int J. Tuberc & Lung Dis 2000; 4(9): 839-44.
2. Meeran K. Prevelance of HIV infection among patients with leprosy and tuberculosis in rural Zambia. Br Med J 1988; 298-364.
3. Slutin G, Leowski J and Man J. Tuberculosis and AIDS: The effects of the AIDS epidemic on tuberculosis problems and tuberculosis programe. Bull Int Union Tuberc. 1986; 63: 21.
4. World Health Organization (WHO). Global tuberculosis control 2011. Geneva: World Health Organization; 2011.
5. UNIADS. Country Progress Report Pakistan: Global AIDS Response Progress Report 2012. Pakistan National AIDS Control Program Pakistan; 2012. Retrieved from:http://www.aidsdatahub.org/dmdocuments/UNGASS_2012_Pakistan_Narrative_Report.pdf(accessed Aug 2012).
6. Gao J, Zheng P, Fu H. Prevalence of TB/HIV co-infection in countries expect China: a systematic review and meta-analysis. PLoS One 2013; 8: e64915.
7. Eriki PP, Okwera A, Aisu T. The influence of human immunodeficiency virus infection on tuberculosis in Kampla, Uganda Am. Rev Respir Dis. 1991; 42: 128.
8. Elliott AM, Luo N, Tembo G, Halwiindi B, Steenbergen G, Machiels L, et al. Impact of HIV on tuberculosis in Zambia: a cross sectional study. Bmj 1990; 301(6749): 412-5.
9. Datiko DG, Yassin MA, Chekol LT, Kabeto LE and Lidtjorn B. The rate of TB-HIV co-infection depends on the prevalence of HIV infection in a community. BMC Public Health 2008; 8: 266.
10. Onorato IM, McCary E. Prevalence of Human Immuno deficency Virus infection among patients attending Tuberculosis clinics in the United States. Journal of Infectious Disease 1992; 165: 87.
11. Solomon S, Kumarsvvamy N, Anurashu S, Vennila R and Pal Jaykar SA. Tuberculosis and HIV infection –an association, indhan J. Med Microbiol 1994; 12(4): 313.
12. Hasnain J, Memon GN, Memon A, Channa AA, Creswell J, Shah SA. Screening for HIV among tuberculosis patients: a cross-sectional study in Sindh, Pakistan. BMJ open. 2012; 2(5): e001677.