

PREVALENCE OF PULMONARY TUBERCULOSIS AND HIV CO- INFECTION – A HOSPITAL BASED STUDY AT PUDUCHERRY

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ABSTRACT

Background: Tuberculosis is a major health problem in developing countries particularly with the advent of HIV which has increased the burden of tuberculosis in these countries. The aim of this work is to study the prevalence of pulmonary tuberculosis and associated HIV infection among these patients attending our hospital.

Methods: A retrospective study of patients diagnosed as sputum positive pulmonary tuberculosis and sero prevalence of HIV among these patients using NACO guidelines during the year 2014 is reported.

Results: A total of 340 cases were diagnosed as sputum positive pulmonary tuberculosis among which 7 cases (2.6 %) were sero positive for HIV antibodies.

Conclusion: The prevalence of pulmonary TB and co infection with HIV was 12.9% and 2.6% respectively.

Key words: Pulmonary tuberculosis HIV, Dual infection, Puducherry.

INTRODUCTION

Tuberculosis (TB) is a major health problem in the developing countries.¹ TB is the leading cause of death from an infectious agent. The estimated global prevalence of TB in the year 2008 was 9.4 million cases which is approximately 40% higher compared to the estimation in 1990.² The emergence of HIV has paved the way for resurgence of tuberculosis and incidentally the prevalence of HIV & TB co infection a deadly dual infection. HIV is the most potent risk factor for progression of tuberculosis from latent infection to an active disease.³ TB, in turn, accelerates the progression of HIV infection to AIDS accounting for one third of deaths due to AIDS worldwide.⁴ The WHO/IUATLD global project on anti-tuberculosis drug resistance surveillance 1994 – 1997 has reported 6% median sero prevalence of HIV co infection among TB patients.⁵ The prevalence of pulmonary TB and TB – HIV co infection is variable and periodic estimates of the same help in assessing the disease burden in that part of the country and in effective implementation of the control strategies.

MATERIAL & METHODS

A total of 2,626 clinically suspected cases of tuberculosis referred to the Microbiology department during the period of one year i.e.-January to December 2014 for screening for pulmonary TB constituted the subjects for study. One spot and one early morning sputum sample were collected from the referred patients. The samples were examined by Auramine O fluorescence staining technique.⁶ Even single positive specimen was considered to be sputum positive pulmonary TB and referred to the DOTS centre after initiating DOTS at the hospital in case of in patients. All sputum positive cases were

counseled by a trained counselor and blood samples for HIV testing obtained from willing patients. The blood samples of all the volunteers (269 cases) were then tested for HIV 1 & 2 antibodies by EIRIS following the NACO guidelines.⁷ All HIV positive patients were recounseled and referred to the clinician / ART centre as appropriate.

RESULTS

A total of 2,626 patients were screened for pulmonary tuberculosis by examination of sputum samples as described above. Among the patients screened 340(12.9%) cases tested positive by microscopy. Among the sputum positive patients 269 cases were tested for HIV antibodies. A total of 7(2.6%) cases tested positive by serology. The age & sex distribution of the cases of pulmonary TB and HIV co infected cases is shown in **Table1**. All HIV positive patients were adults except one child. Five of them were male and two were female including one child.

Table 1: Age & sex distribution of TB & HIV co infection cases in chronological order of age.

S. No	Age	Sex
1	13	F
2	27	M
3	35	M
4	40	M
5	47	F
6	50	M
7	61	M

DISCUSSION

TB continues to be a major health problem despite the existence of effective drugs and more than a million people die of the disease every year.⁸ The WHO declared TB a global emergency in 1993 and the govt. of India has launched a revised national tuberculosis control programme (RNTCP) to tackle the magnitude of the disease.⁹

HIV – TB co infection is on the rise more so in the developing countries like India. TB accounts for about a third of deaths among patients with AIDS.¹⁰ HIV infection causes a gradual depletion of cell mediated immunity and thus offers an opportunity for activation of the latent TB infection. HIV infection is found more frequently in patients with TB in comparison to non-tuberculosis chest diseases. Earlier studies in Puducherry revealed 2.7% and 4% prevalence of HIV among TB patients.^{11, 12} In the present study the prevalence of HIV in patients with pulmonary tuberculosis was 2.6 % which is less than the earlier studies.

The prevalence rates have varied from as low as 0.4 %¹³ to as high as 20.1%.¹⁴ The dual HIV & TB epidemic poses a great therapeutic challenge for the clinicians. Early diagnosis of these individual infection and screening for detection of the co infection is a crucial step in arresting the progress of these deadly dual infections by initiation of appropriate treatment. The relatively low prevalence of dual infection in our study reflects on the effective implementation of the HIV & TB control programme envisaged by the govt. of India and executed by the regional programme officers of the state of Puducherry. Further the rate is far less than in other regions of the country. A sustained effort by the, people & Govt. including N.G.O's can bring down the rates further down to achieve the goals of the govt. of India & WHO.

CONCLUSION

The impact of dual infection of HIV & TB on the economy and public health is enormous with increased morbidity & mortality. Screening of all T.B patients for HIV & vice versa will help in early detection and initiation of appropriate treatment at an early stage thus reducing the mortality rate.

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REFERENCES

1. Kochi A. The global tuberculosis situation and the new control strategy of the WHO, *Tubercule and lung Dis.*, 1991, 72, 1.
2. Global Tuberculosis controls a short update to the 2009 report, December 2009, Geneva, World health organization 2009.
3. Swaminathan S, Ramachandran R, Baskaran G Risk of development of TB in HIV infected patient *Int J. Tuberc, lung Dis* 2000, 4:844 – 9.
4. WHO - TB group at risk: WHO report on the global Tuberculosis epidemic 1996. [WWW.Who.int /gtb/ Publications / Therp](http://WWW.Who.int/gtb/Publications/Therp) – 96.
5. Anti-tuberculosis drug resistance in the world, 1997. The WHO / IUATLD global project on Anti-tuberculosis drug resistance surveillance 1994 – 1997, WHO / TB 97.229
6. Manual for sputum smear florescence microcopy RNTCP.TBC.india.nac.in 2015.
7. NACO Guidelines for HIV testing March 2007.
8. S.Bhagyabati Devi, Santa Neorem, T. Jeetenkumar singh etal. HIV & TB Co infection. *JACM* 2005, 6 (3); 220 -3.
9. GOLGI g. Joshi J m , Clinical & laboratory observations of tuberculosis at Mumbai, India, *Clinic post graduate Med J* 2004; 51-3.
10. Joint United Nations programme on HIV/AIDS and WHO 2002. AIDS epidemic update December 2002. UN AIDS 102. 58 E Geneva; UNAIDS;2002.
11. Shivaraman v, Bilbart F and Sambasivarao HIV infection in pulmonary Tuberculosis. Report on six cases *Ind. J Tub*, 1992, 39, 55.
12. Vasudeviah V, HIV infection among Tuberculosis patients. *Indian J Tuber* 1997;44:97-8.
13. S.K Sharma, P.K Saha, Yogita Dixit etal. HIV seropositivity among adult Tuberculosis patients in Delhi. *Indian J chest Dis Allied Sci* 200;42;157-160.
14. Paranjape RS, Tripathy SP, Menon PA, Mehenfale SM, Khatavkar P, Joshi Dr etal. Increasing Trend of HIV sero prevalence among pulmonary TB patients in Pune, India. *Indian J Med. Res* 1997;106;207-11.

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