

TUBERCULIN RESPONSIVENESS AS A PROGNOSTIC INDICATOR IN HIV POSITIVE PULMONARY TUBERCULOSIS, KIMS, AMALAPURUMB. Nagaraja¹, P. Nageswara Rao²**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: With the emergence of HIV pandemic there is an alarming increase in both HIV and Tuberculosis cases cause's major health problems due to poor socio-economic status in developing and resource poor countries. HIV and Tuberculosis infection hand in hand kills more population than all other infections combined. Both HIV and Tuberculosis is a major health problem. So the present study is under taken to know present scenario of HIV and TB in the rural set up, Amalapuram, East Godavari District, Andhra Pradesh. Out of 100 suspected cases with HIV and Tuberculosis with malnutrition, 10 samples were found to be HIV positive by rapid and ELISA. Among 10 positive HIV cases 6 cases were found to be positive for AFB by ZN stain indicating both HIV and Tuberculosis go hand in hand.

KEYWORDS: Tuberculosis, Pandemic, Hiv, Tuberculin.

INTRODUCTION: Tuberculosis is an ancient disease. It kills more adults than all other infectious diseases combined. It is a major health problem of many developing and poor countries including India About one third of the total world's population is estimated to be infected by the causative agent Mycobacterium tuberculosis, However the bacilli are in dormant stage in most of the infected persons Tuberculosis manifests only in the people whose immune system is jeopardized due to various reasons such as malnutrition, diabetes mellitus, debility due to old age and concomitant illness, like measles and HIV Infection. With the emergence of HIV pandemic there is an alarming increase in tuberculosis cases in developing and resource countries.

Both tuberculosis and HIV infection have several features in common. Both of them cause severe morbidity and mortality. It is an obvious fact that Tuberculosis and HIV go hand in hand.

HIV infection is considered to be the strongest risk factor for development of tuberculosis infection into active disease and tuberculosis is the commonest opportunistic infection in persons infected with HIV.^(12,7)

Tuberculin reaction is a delayed type of hypersensitivity and is cell mediated. The cells that mediate the reaction i.e., T-Lymphocytes and macrophages are the same that are also targets of HIV.

It is thought worthwhile to study the feasibility of tuberculosis of tuberculin skin test as a surrogate marker of prognosis in HIV positive pulmonary tuberculosis patients.⁽⁷⁾

The present study is conducted from October 2012 to April 2013 at KIMS Hospital Amalapuram. A total number of 50 pulmonary tuberculosis patients, tested for HIV by performing ELISA test, rapid and simple tests. All the positive pulmonary tuberculosis cases tested for tuberculin reactivity for Mantoux test. Out of 50 Pulmonary tuberculosis positive cases HIV thus found positive are tested for tuberculin test.

Nutritional status is also taken as another parameter. HIV negative patients in the study are also tested as control group.

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AIMS & OBJECTIVES:

The present study has been undertaken:

1. To know the prevalence of HIV infection among pulmonary tuberculosis (TB) patients at KIMS Amalapuram.
2. To know the pattern of tuberculin responsiveness among HIV and TB cases.
3. To know the sputum positivity for acid fast bacilli among HIV-TB and non HIV-TB patients.
4. To know the relationship if any between tuberculin responsiveness and prognosis of HIV-TB patients.
5. To evaluate the feasibility of tuberculin responsiveness as a prognostic indicator in HIV-TB in resource-poor settings.

MATERIALS & METHODS: The present study has been carried out in the patients attending TB+ chest OP at KIMS Amalapuram from October 2012 to April 2013. The study has been conducted as two step procedure initially; samples are screened for HIV antibody by rapid test method and ELISA. The patients were tested for tuberculin reactivity by tuberculin test using PPD tuberculin stabilized with Tween 80. 5ml vials of SPAN diagnostics – 10 T. U per 0.1 ml and sputum samples for screened for acid fast bacilli by Ziehl Neelsen method.

A measurement of body mass index (BMI) is done to assess the nutritional status in the present study. After cessation of linear growth around 21 years, weight for height indicates muscle fat mass in the adult body. The ratio of the weight (in Kg)/ height² (m) is referred as Body mass index (BMI). The classification by James et al is utilized to assess the nutritional status.

With informed consent about HIV screening, 100 blood samples are taken from consecutive patients. This is irrespective of clinical suspicion of HIV. 3ml of blood drawn from each patient under strict sterile precautions using a separate disposable syringe for each patient.

100 tuberculosis patients are selected on the basis of clinical suspicion of HIV infection (viz., patients with atypical presentation, chronic diarrhoea, unresolving fever even on antituberculosis treatment, patients showing abnormal X-ray findings, rapid progression of the disease etc.)

RESULTS:

Prevalence of HIV: In 100 patients tested consecutively in the TB Chest OPD and ward, irrespective of clinical suspicion of HIV to know the prevalence.

Total No. of Patients Tested	100
Positive for HIV	10(10%)

Table 1: Prevalence of HIV among pulmonary tuberculosis patients tested irrespective of clinical suspicion

Among the selected 100 patients with clinical suspicion of HIV infection 8 cases are found to be HIV Positive.

HIV POSITIVE TB (N=6)	6
HIV NEAGATIVE (N=94)	2

Table 2: Sputum smear AFB positivity among HIV positive and hiv neagative pulomonyary turberculosis patients

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Out of 8 HIV positive cases all the 6 cases are found to be positive for AFB and out of 94 HIV negative cases 2 were found to be positive for acid fast bacilli, indicating the fact that HIV and TB by hand in hand.

Age in years	Male (n = 6)	Female (n = 2)
20 - 29	3	1
30 - 39	2	Nil
40 - 49	1	1

Table 3: Age and sex wise incidence of HIV Positive pulmonary tuberculosis patients

From the above table it is observed that out of 8 positive cases, male patients showed high positivity i.e. 6, followed by females 2. It is also observed that the incidence is more in the age group of 20-29 in both sexes

INDURATION SIZE NO. (%)	NUTRITIONAL STATUS
>10mm 2(2%)	Normal, mild to moderate malnutrition
5-10mm 4(40%)	Severe malnutrition
<5mm or anergy 4(40%)	1 normal 3 severe malnutrition

Table 4: Tuberculin reactivity, nutritional status of the HIV positive patients (n=8)

From the above table, among 10 HIV positive patients 8 were found to have severe malnutrition and 2 were found to have normal malnutrition with tuberculin reactivity.

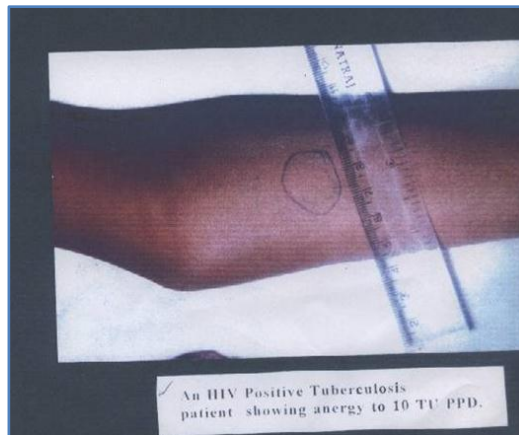


Figure 1

DISCUSSION: Both HIV and TB emerged as diseases of less privileged people.⁽⁷⁾ Illiteracy, poverty, gender inequality, poor living conditions in over-crowded houses, urbanization and migration are conditions that favour spread of HIV infection.

As there is rapid spread in HIV cases, in India also. HIV related tuberculosis cases are bound to increase.

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A steady increase in HIV prevalence among tuberculosis patients in India has been reported by several authors.^(9,12, and 5)

To diagnose HIV infection for the present study sera of all patients are screened initially for HIV antibodies by Detect HIV ELISA method. The positive sera are retested by immunocombo-II Dot ELISA and Capillus latex particle agglutination method. Positives by all the three methods are considered to be valid diagnostic purpose.

On the basis of antibody detection alone the patients are diagnosed to be infected with HIV. This is because of the fact that all patients in the present study are adults- ruling out the possibly of passive antibody transmission vertically and there is no history of blood transfusion among the patients tested. Hence in all probability antibodies detected in sera of the patients are the result of the individuals immune response mounted against HIV infection.

In the present study the patients are tested for HIV infection irrespective clinical suspecting of HIV tested consequently. This revealed 10% prevalence of HIV among hospitalised tuberculosis patients.

This high HIV prevalence of 10% in the study group definitely does not reflect the prevalence of HIV infection among tuberculosis patients in the community. The patients are admitted to the wards because of various complications or debility. Which are more common among patients dually by HIV and TB. Hence prevalence of HIV infection among TB patients getting domiciliary treatment would be lesser than that the prevalence noted in the present study.

However the finding of this HIV prevalence points out that. In India also HIV has already become a problem of concern.

CONCLUSION:

1. In the present study, out of 10 HIV positive cases, sputum smear positivity is 6(75%) when compared to pulmonary tuberculosis patients without HIV is 2 (25%).
2. In the present study 6% of pulmonary tuberculosis is found to be positive for HIV antibodies.
3. All the patients are from low socio-economic status and all the patients in present study acquired HIV through sexual contact.
4. Age group is more in 20-29, followed by 30-39.
5. HIV infection among tuberculosis is unpredictable.
6. HIV positive pulmonary tuberculosis patients, live HIV negative patients showed full spectrum of tuberculin reactivity.
7. The present work indicates that large scale studies are required to evaluate the feasibility of tuberculin reactivity as a prognostic indicator among HIV – TB patients in resource – poor settings.
8. Anergy or Induration >5mm size mm with severe malnutrition in HIV positive pulmonary tuberculosis patients significantly correlated with increased morbidity and mortality.
9. In HIV positive pulmonary tuberculosis patients with anergy and normal nutrition status the outcome through favourable needed prolonged hospitalization.
10. HIV – TB with Induration sizes between 5mm and 10mm have outcomes better than anergic patient, but poorer than patients with induration sizes more than 10mm.

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