

## Screening for Syphilis in PLHA

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### ABSTRACT

HIV and Syphilis are sexually transmitted diseases, which are strongly linked to each other. In people living with HIV, syphilis is asymptomatic and leads to secondary and tertiary syphilis. A pilot study was started to know the incidence of asymptomatic syphilis in HIV positive patients. 200 participants were taken up for the study. HIV status was confirmed with the 3 principles/ antigens according to NACO guidelines. Detail demographic profile and history of patients was noted. 200 HIV positive serum samples were collected and subjected to rapid plasma regain test. CD4 % was also correlated. Out of 200 cases majority were males (78%), age group ranging from 20-50 years. All patients were subtype HIV I. 6 patients were reported reactive for syphilis. Majority patients had CD4 % >500. Time bound screening for syphilis in HIV patients is necessary. Detection and treatment of primary syphilis is important to prevent further progression of the infection and relapse.

**Key words:** PLHA, syphilis, HIV, RPR, co-infection

### INTRODUCTION

*Treponema pallidum* is the causative agent of an ancient sexually transmitted disease 'syphilis'. *Treponema* belongs to family Spirochaetaceae and order Spirochaetales. The spirochetes are a large, heterogeneous group of spiral, motile bacteria. [1] Natural infection with *T pallidum* is limited to the human host. [2] The World Health Organization estimates that 10-12 million new infections of syphilis occur every year. Pathogenic *Treponemes* including *T. pallidum* cannot be grown in artificial culture media. Antibody detection methods are of paramount importance in the diagnosis of syphilis. Both syphilis and HIV affect each other's pathogenesis. [3-4] Sexual mode is by far the most common mode of transmission of HIV, accounts for 75% of total cases in the world. [2] HIV and syphilis

affect similar patient groups and co-infection is common. Syphilis may present with non-typical features in a HIV-positive patient. [5] The importance of syphilis as a co-infection in HIV-infected individuals does not only stem from the negative effect of syphilis on the natural course of HIV infection (manifested as a temporary reduction in CD4 cells and an elevation in HIV viral load) but also from the enhancement of HIV transmission in individuals co-infected with syphilis. [6-9] It also causes rapid progression to late syphilis even after treatment. This study was taken up to see the incidence syphilis in PLHA in Mahabubnagar district, Telangana.

### MATERIALS AND METHODS

The study was conducted at Government General Hospital,

Mahabubnagar from November 2018 to February 2019. A total of 200 HIV reactive patients were taken up for study. Informed consent was given by the patient. Detailed history and demographic data was collected.

**Inclusion criteria:** No history of fever over past 3 months and genital lesions. HIV test reactive.

**Exclusion criteria:** patients with history of fever since past 3 months and genital lesions, patient not giving consent, HIV test non reactive.

#### **Sample collection:**

Adequate amount of blood sample was collected from the patients under strict aseptic conditions according to standard collection protocol. Serum was separated and subjected to testing. If any delay, the serum was stored at 2-8<sup>0</sup>C.

#### **Sample processing:**

HIV testing was done according to NACO guidelines. 1<sup>st</sup> test was HIV comb Aids methods. If 1<sup>st</sup> test is positive then 2<sup>nd</sup> test was done using Merlin triline methods and 3<sup>rd</sup> was done using HIV tridot test. If all three tests were positive then patient was considered as HIV reactive. Then screening for Syphilis was done by Rapid plasma reagin (RPR) test. CD4 count was done by flow cytometry and the values were correlated.

## **RESULTS**

230 participants were taken up in the study out of which 30 were excluded and 200 were included based on the criteria. All the 200 HIV confirmed cases belonged to Mahabubnagar district. Out of 200 participants, 156 were male and the rest were female. Patients were of age groups 20-50 years. The most affected age group was 20-30 years. All 200 samples were reactive for HIV I.

Out of 200 samples, 6 were positive for RPR. Among the 6 patients there was male predominance of 4 and common age group was 40-50years. 1 patient had CD<sub>4</sub> count of less than 200, 2 patients had CD<sub>4</sub>

count of 201-500 and 3 patients had CD<sub>4</sub> count of more than 500.

## **DISCUSSION & CONCLUSION**

HIV and syphilis is a dangerous combination. Both affect the pathogenesis of each other. In this study, we have screened for syphilis in PLHA, we have found a seroprevalence of 3% among asymptomatic PLHA. In India, variable syphilis-HIV co-infection rates have been described. [10] These are more common in homosexuals.

Other authors have studied Syphilis in various other groups such as normal people, antenatal cases and diabetics. This study was only limited to a co-infection with HIV. Even though this is a limited group, it is of paramount importance to screen and diagnose this group of patients. Effective treatment at correct time can change the patient condition or else it may lead to the other end of the disease.

Diagnosis of syphilis in PLHA has lots of the problems to overcome such as it has confusing clinical signs and symptoms, lack of antibody titers in a clinically significant case, unusual high titers in non specific test, failure of non-treponemal titers to decline even after treatment and non reactivity to the specific test. [2]

A few of the limitations to the present study are small sample size of the study group, use of non specific test and this is a hospital based study.

In conclusion, PLHA have more incidences of Sexually transmitted diseases than non HIV people. It is important to screen for STD's in both symptomatic and asymptomatic PLHA. Non treponemal test should be used to screen and then conformed by treponemal test.

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