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## Prevalance of HIV and Syphilis among Patients Attending ICTC Center in a Multispeciality Hospital in Heritage City

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### Abstract

It is estimated that globally, 34.0 million [31.4 million–35.9 million] people were living with H.I.V at the end of 2011. According to W.H.O. estimates, 15% (50 million) of the 340 million new annual sexually transmitted infection (S.T.I.) cases are in India, and 44% (151 million) in South and South-East Asia. High burden of syphilis is found among population of developing countries. HIV and *Treponema pallidum*, the causative agent of syphilis both of them are sexually transmitted. Concurrent infection with *Treponema pallidum* and HIV presents a serious health problem. HIV alters the natural history of syphilis and response to therapy. Incidence of neuro syphilis is increased among the HIV infected persons, even when treated in recommended complete dosage. Most of the study has been done are on blood donors, while a very few literature state prevalence of syphilis exclusively among HIV sero positive individuals. The overall prevalence rate of syphilis in Karnatakka is 0.11%, in the present study the prevalence of syphilis was 7.0% similar to data presented by Saurabh et al among HIV sero positive populations, while the total prevalence among patients attending the I.C.T.C. centre was 0.29% which matches with the data presented by Nirali shah et al where the prevalence was found to be 0.23%. The purpose of the study is to find out the co infection and prevalence of syphilis in a HIV positive male and females attending Integrated Counselling and Testing Centre (I.C.T.C.), in a multispecialty centre in south India.

**Keywords:** HIV, Syphilis, Prevalence, Co infection, I.C.T.C

### Contents

1. Introduction . . . . .	877
2. Experimental . . . . .	878
3. Results and Discussion. . . . .	878
4. Conclusion . . . . .	879
5. References . . . . .	880

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### 1. Introduction

It is estimated that globally, 34.0 million [31.4 million–35.9 million] people were living with H.I.V at the end of 2011 [1]. According to W.H.O. estimates, 15% (50 million) of the 340 million new annual sexually transmitted infection (S.T.I.) cases are in India, and 44% (151 million) in South and South-East Asia [2]. High burden of syphilis is found among population of developing countries. Syphilis like other Sexually Transmitted disease (S.T.D.) have a common transmission routes, mainly by unprotected sex, while sharing needles, drugs with

exchange of blood or body fluids, and they have become a locus of increased public health concern [3]. Life expectancy of patients with HIV has increased after the introduction of Highly Active Anti Retroviral Therapy (HAART) and the centre of attention has now shifted to the proper management of concurrent illnesses such as chronic HBV and HCV infections, Tuberculosis, syphilis and other co-infections which have the potential to increase long-term morbidity and mortality. Reducing the transmission of HIV and other sexually transmitted infections (STIs) remains a public health priority in India [4]. Concurrent infection with *Treponema pallidum* and HIV presents a serious health problem. HIV alters the natural history of syphilis and response to therapy.

Incidence of neuro syphilis is increased among the HIV infected persons, even when treated in recommended complete dosage [5]. The interaction between syphilis and HIV infection is highly complex activity and remains incompletely understood, despite there being decades of clinical experience with co infected patients. Enormous evidences are available which indicates that syphilis increases the risk of HIV infection [6]. The prevalence of co-infection with HIV varies widely across different studies within India and outside. Therefore, it is important to find out regional prevalence of these co-infections. Moreover, co-infections with the HIV have become a major health care catastrophe. Hence, it is recommended that clinicians should be able to identify them as early as possible to reduce the morbidity and mortality and improve quality of life in HIV/AIDS patients. Early detection and treatment of syphilis prevents the adverse medical consequences including continuing transmission to sexual partner/s and increased risk of human immunodeficiency virus (HIV) acquisition [7]. Most of the study has been done are on blood donors, while a very few literature state prevalence of syphilis exclusively among HIV sero positive individuals. The purpose of the study is to find out the co infection and prevalence of syphilis in a HIV positive male and females attending Integrated Counselling and Testing Centre (I.C.T.C.), in a multispecialty centre in south India.

## 2. Materials and Method

The study was conducted at I.C.T.C., at a Multispecialty Hospital in southern India for a year. All patients attending I.C.T.C. were counselled regarding HIV/AIDS, its route of transmission, mode of transmission, preventive measures and treatment modalities. Patient's personal profile like age, sex, occupation etc was collected along with the clinical history. Consent for HIV testing was taken. The HIV tests and interpretation were done as per N.A.C.O. guidelines. Consent of all the patients were taken and confidentiality of the results was maintained. A total of 83 patients were enrolled in the study including 62 males and 21 females for a period of five months. The VDRL test was performed using modified VDRL slide test from Span Diagnostics Ltd Surat India.

### Inclusion and Exclusion Criteria

#### Inclusion criteria

1. Recently diagnosed HIV sero positive adult patients (>18 years of age)

#### Exclusion criteria

1. Individuals with dual infection (HIV-1/HIV-2) or HIV- 2 infection are excluded.
2. Individuals who don't consent for the written informed consent process.
3. Pregnant women are excluded from the study

## 3. Results and Discussion

### Results

The study was carried for almost 1 year from October 2013 to September 2014 in Integrated Counselling and Testing Centre (I.C.T.C.) at JSS Hospital, Mysore. A total of 4498 adult patients visited the I.C.T.C. centre for their HIV status. A total of 203 patients were found to be HIV positive. Thus the prevalence of HIV among adult patients was 4.51%. In the second part that is the period from May to September 2014 Total numbers of patients counselled at I.C.T.C. were 2040 of which 85 were HIV positive Table 1, where the sero prevalence of HIV in this period was 3.77% (a decrease in 0.74%), during the same period these patients were also tested for VDRL. A total of 6 patients sample were reactive with a significant titer of more than 1:8 for VDRL test while 79 were non-reactive Table 2. The total prevalence of syphilis among the patients attending the counselling session from May to September was 0.29%. The prevalence of syphilis among HIV positive patients it is found to be 7.05%. The total numbers of male patients were 2983 while females were 1515. The male female ratio was 2:1. While the male female ratio for VDRL test was 2.86:1

### Discussion

We have done a cross sectional study to find the prevalence characterized by the co infection of HIV and Syphilis in a population of adult attending counselling session at I.C.T.C. centre at a Multispecialty Hospital. In a study done by K.Lathamani et al in Karnataka the prevalence of HIV and syphilis was found to be 0.09% and 0.08% respectively. The overall prevalence rate of syphilis in Karnataka is 0.11% [8]. The prevalence of HIV and Syphilis was 8.5% and 5.9% in an Urban Slum by Saurabh et al while the prevalence was 7.5% and 6.3% in a study done in a remote native community of Peruvian Amazon. Sexually Transmitted Diseases (S.T.D.) are areas of concern in developing

countries. In the present study the prevalence of syphilis was 7.0% similar to data presented by Saurabh et al among HIV sero positive populations, while the total prevalence among patients attending the I.C.T.C. centre was 0.29% which matches with the data presented by Nirali shah et al where the prevalence was found to be 0.23%. The overall prevalence of HIV is 4.71% which is close to study done by Ashish et al in Nepal with a prevalence rate of 3.59% while Souradet et al in Karnataka found the HIV prevalence rate of 6.0% which is again close to our study. In a study done by Almeida et al in Brazil in 2004 among phycritic patients, the prevalence rate for HIV and Syphilis was found to be 1.6% and 7.6% respectively. In a study conducted in the year of 2009 by Ramesh et al the prevalence rate was found to be 33.9% for HIV and 10% for syphilis patients in Belgaum. Outbreaks of syphilis have been reported in various parts of the world in selected cohort. Various studies from developed countries like United States and United Kingdom have showed that increasing cases of syphilis were detected among men who had sex with men (MSM) and HIV-infected populations [9, 10]. As far Asian countries are concerned, syphilis and HIV co-infection in China is has been documented, a similar finding in which MSM is a high-risk population for both infection [11]. In India most of the studies are done among blood donor population [12, 13, 14, 15].

Educational status of an individual or a community plays an important role in the association of HIV/syphilis and their spread as lack of knowledge among uneducated regarding safe sexual practices [16]. Risk of getting HIV through sexual practices increases during unprotected vaginal or anal sexual intercourse with HIV reactive partner, sex with multiple partners, sex with partners at high risk for HIV (e.g. injection drug users and sex workers) and sex exchange practices [3]. Studies done to evaluate the impact of early syphilis infection on HIV had also shown that syphilis was associated with decrease CD4+ cell counts and an increase HIV RNA level [17, 18, 19] Syphilis can also increase HIV transmission by increasing viral shedding and seminal viral load [20]. However some studies have shown that syphilis tend to transient decrease in CD4+ count and raise the HIV viral load [21].

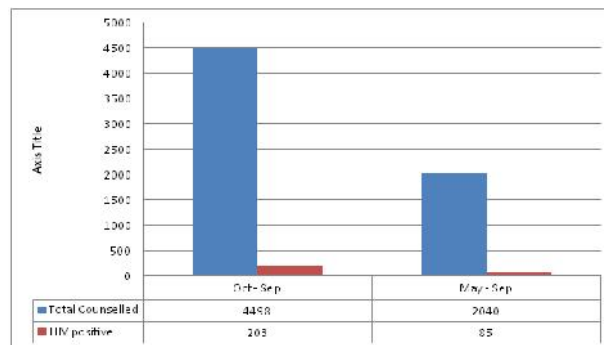


Figure 1

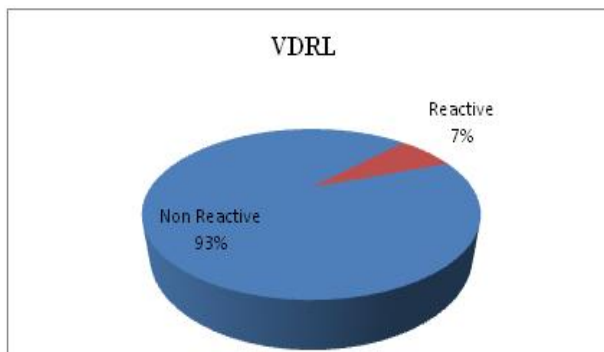


Figure 2

#### 4. Conclusion

The interaction of syphilis and HIV infection is quite complex and remain subject of ongoing research. Though in our study the overall prevalence of HIV and Syphilis is quite low, but the prevalence of syphilis among HIV sero positive group is quite high. Despite several advances in the understanding of the interaction between HIV infection and syphilis achieved during the past few years, the clinical treatment of co-infected patients remains challenging. Recent changes in the epidemiology of patients who have concordant syphilis and HIV infection will require innovative public health strategies to control these new and resurgent epidemics. Clinicians are key participants in syphilis control, because they must educate patients, counsel them in sexual risk reduction, and routinely and frequently screen those at increased risk.

## 5. References

1. UN AIDS Global Report **2012**
2. World Health Organization (WHO). Global Strategy for the Prevention and Control of Sexually Transmitted Infections: 2006e2015: Breaking the Chain of Transmission. Geneva: WHO, **2007**: 169. [Http://whqlibdoc.who.int/publications/2007/9789241563475\\_eng.pdf](http://whqlibdoc.who.int/publications/2007/9789241563475_eng.pdf) (accessed 19 Jul 2010).
3. Campos LN, Guimarães MD, Carmo RA, Melo AP, Oliveira HN, Elkington K, McKinnon K. HIV, syphilis, and hepatitis B and C prevalence among patients with mental illness: a review of the literature. *Cad Saude Publica*. **2008**, 24 Suppl 4:s607-20.Review.
4. National AIDS Control Organization: HIV sentinel surveillance and HIV estimation in India, 2007. A technical brief.Ministry of Health and Family Welfare **2007**.
5. Musher DM. Syphilis, neurosyphilis, penicillin and AIDS. *J Infect Dis*, **1991**,163:1201-6.
6. Risbud A. Human immunodeficiency virus (HIV) and sexually transmitted diseases (STDs). *Indian J Med Res* 2005; 121: 369-76.
7. Parthasarathy MR, Narayanan P, Das A, Gurung A, Prabhakar P, Wi T. Integrating syphilis screening in a large-scale HIV prevention program for key populations: the Avahan experience from India. *J Infect Dev Ctries*. **2013 Jun** 15, 7(6): 484-8.
8. Garg S, Mathur DR, Garg DK. Comparison of seropositivity of HIV, HBV, HCV and syphilis in replacement and voluntary blood donors in western India. *Indian J Pathol Microbiol*. **2001 Oct**, 44(4): 409-12.
9. Redmond AM, Woods ML. Contemporary clinical aspects of syphilis, diagnosis and treatment. *ADF Health*. **2008**, 9: 18-23.
10. Paz-Bailey G, Meyers A, Blank S, Brown J, Rubin S, Brixton J, et al. A case-control study of syphilis among men who have sex with men in New York City. *Sex Transm Dis*. **2004**, 31: 581-587
11. Gao L, Zhang L, Jin Q. Meta-analysis: Prevalence of HIV infection & syphilis among MSM in China. *Sex Transm Infect*. **2009**, 85: 354-358.
12. Giri PA, Deshpande JD, Phalke DB, Karle LB. Seroprevalence of transfusion transmissible infections among voluntary blood donors at a tertiary care teaching hospital in rural area of India. *J Family Med Prim Care*. **2012 Jan**,1(1): 48-51
13. Seroprevalence and Trends in Transfusion Transmitted Infections Among Blood Donors in a University Hospital Blood Bank: A 5 Year Study: P. Pallavi , C. K. Ganesh , K. Jayashree , G. V. Manjunath: *Indian J Hematol Blood Transfus*, **Jan-Mar 2011**, 27(1):1-6
14. Arora D, Arora B, Khetarpal A. Seroprevalence of HIV, HBV, HCV and syphilis in blood donors in Southern Haryana. *Indian J Pathol Microbiol*. 2010 Apr-Jun, 53(2):308-9. doi: 10.4103/0377-4929.64295.
15. Garg S, Mathur DR, Garg DK. Comparison of seropositivity of HIV HBV, HCV and syphilis in replacement and voluntary blood donors in western India. *Indian J Pathol Microbiol*. **2001 Oct**, 44(4): 409-12.
16. Shrivastava SR, Bobhate PS. Prevalence of HIV and syphilis in patients attending sexually transmitted infections (STI) clinic in an urban slum. *J Res Health Sci*. **2012**, 12(1): 7-14.
17. Palacios R, Jimenez-Onate F, Aguilar M, Galindo MJ, Rivas P, Ocampo A, et al. Impact of syphilis infection on HIV viral load and CD4 cell counts in HIV infected patients. *J Acquir Immune Defic Syndr*. **2007**, 44(3): 356-359
18. Kofoed K, Gerstoft J, Mathiesen LR, Benfield T. Syphilis and Human Deficiency Virus coinfection:Influence on CD4 T cell count, HIV 1 viral load, and treatment response. *Sex Traansm Dis*. **2006**, 44(3): 143-148
19. Buchacz K, Patel P, Taylor M, Kerndt PR, Byers RH, Holmberg SD et al. Syphilis increases viral load and decreases CD4 cell count in HIV infected patients with new syphilis infections. *AIDS*. **2004**, 18:2075-2079
20. National baseline high risk and bridge population behavioural surveillance survey, **2002**, NACO.
21. Kumar B. Ross M. Sexual behaviour and HIV infection risk in Indian Homosexual men: a cross cultural comparison. *Int J STD AIDS*. **1991**, 2: 442-444