

Prevalence of HIV, Hepatitis B, and Syphilis in high risk groups in Warangal

G.V. Padmaja

Associate Professor, Department of Microbiology, Kakatiya Medical College, Warangal, Telangana, India.

Address for correspondence: Dr.G.V.Padmaja, Associate Professor, Department of Microbiology, Kakatiya Medical College, Warangal, Telangana, India.

E-mail ID: goteti.padmaja@gmail.com

ABSTRACT

Introduction:

According to WHO, we stand nakedly in front of a pandemic as mortal as any pandemic there has ever been. There exists a synergistic relation between HIV infection and high risk behavior. The incidence of HIV infection in high risk groups like persons attending to sexually transmitted diseases (STDs) out patients clinics, female sex workers and homosexuals(MSM),migrants, truck drivers, intravenous drug users(IDU) and inmates of central prison. All the persons will show high risk behavior to spread the deadly pandemic AIDS and other STDs.

Objectives:

1. To know the HIV seropositivity in high risk groups
2. To counsel all the persons with high risk behavior to control the spread of pandemic to innocent spouses and partners.
3. To observe the incidence of HIV infection along with syphilis and Hepatitis B infection.

Materials & Methods:

200 patients who have attended to STD clinic in MGM Hospital, Warangal were screened for HIV, Hepatitis B and Syphilis infections. 100 patients of female sex workers and MSM brought by NGO representatives were screened for all the 3 infections. A camp was conducted for the truck drivers to screen HIV, Hepatitis B and Syphilis infections as per the instructions of DM & HO. We have collected 100 blood samples from inmates of central prison in Warangal and screened for HIV, Hepatitis B and Syphilis infections. 5 ml of blood collected from all the persons, serum separated and subjected to screening of HIV infection by WHO strategy, and as per NACO guidelines, after performing Pre-test counseling and informed consent. Samples were screened for Hepatitis B infections and syphilis with rapid plasma reagin tests. 100 blood donors were taken as control group.

Results: In all high risk groups, HIV sero positivity is highest in RTI/STD patients- 7.5%, followed by 6% in FSW/MSM persons, 1.4% in truck drivers, 1% in Jail inmates and nil in small group of intravenous drug users (IDUs) and 100 persons in control group showed nil incidence of HIV, Hepatitis B and Syphilis infections.

Hepatitis B infection in RTI/STD patients was 4%, female sex workers and MSM it was 6%, in truck drivers it was 4.2%, in IVD users it was 3.33% and in inmates of central Prison it was 2%.

Seropositivity for syphilis was more in RTI and STD patients amounting to 34% and also 34% female sex workers and MSM 17.1% in truck drivers and 14% in inmates of central prison and 6.66% in IV Drug users. In control group blood donors there was 2% seropositivity for syphilis.

Conclusion: There is remarkable association among HIV, Hepatitis B and Syphilis infections in high risk groups. Also there is changing pattern in the incidence of this infection. Elaborative study of all infections is needed especially in truck drivers jail inmates as a routine protocol in order to control the spread of infection.

Keywords: High risk groups, HIV, Hepatitis B and Syphilis infections.

INTRODUCTION

HIV Seroprevalence studies and survey provide infection about infected persons, who either a symptomatic or have less severe symptoms. HIV the causative agent of AIDS can be transmitted through contaminated blood, in high risk groups like people attending STD clinics with high promiscuous behavior in migrants, truck drivers and also intravenous drug abusers^{1,2,3}.

A high level of sexual activity with multiple partners was the apparent risk factor. HIV infection mainly affects young and middle aged persons. A previous history of genital ulcer diseases, such as Chancroid, syphilis, hepatitis B infection, Herpes infection, genital herpes, vulvovaginitis,

balanoposthitis, donovoniasis, and LGV. The risk of sexual transmission of HIV infected persons to their spouses also high^{4,5}.

The seroprevalence among IVD users in northern states also increased and extensive studies should be conducted in university campus, college campuses and in NRI students, Jail inmates also show needle sharing and homosexual behavior in prisons which may result in high rates of HIV transmission and high incidence of other sexually transmitted diseases. Continuous extensive follow-up studies in high risk groups should be monitored as it is a major public health problem social stigma and discrimination associated with HIV positive /AIDS persons will not give the burden of this problem in the society, mean while the innocent female partners fall prey to these dread full diseases. Focused attention should be given to individuals suffering with HIV infection and other STDs Who needs care and support for the management of the disease and health education and counseling should be provided to reduce the risk of transmission of these diseases^{6,7,8,9}.

MATERIALS AND METHODS

The present study group consisted of 200 patients attending STD clinics in MGM Hospital, 100 patients of female sex workers and MSM from Non Government Organization (NGOs), 70 truck drivers travelling from one state to the other state, 30 intravenous drug users (IDUs), 100 jail in mates and 100 blood donors were taken as control group. [Table 1&2]

All above high risk group persons were screened for HIV infection, Hepatitis B infection and Syphilis. HIV screening was done according to WHO strategy and as per NACO guidelines, after performing Pre-test counseling and informed consent Hepatitis B infection screened by immunoassay and syphilis by Rapid Plasma Reagin tests.

According to protocol history of exposure, history of sexually transmitted diseases and related signs and symptoms were elicited and noted 5ml of whole blood collected by thrombophlebotomy and allow to clot and serum separated and tested to screen HIV, Hepatitis B and Syphilis infection. Serum samples for HIV infection were screened with combAIDS kit and positive sample were tested with SDBioline and Tridot test kits. All serum samples were tested for Hepatitis B infection by immunoassay kits and for syphilis infection with Rapid Plasma Reagin kits.

RESULTS

Table I: Percentage of Seropositivity of HIV in High Risk Groups

| Sl. No | Category | No. of Cases Studied | No. of Sero Positive Cases | Percentage (%) |
|--------|----------------------------|----------------------|----------------------------|----------------|
| 1. | Out patients of STD Clinic | 200 | 15 | 7.5 |

| | | | | |
|----|------------------------------|-----|-----|------|
| 2. | Female sex workers and MSM | 100 | 06 | 6 |
| 3. | Truck Drivers | 70 | 01 | 1.45 |
| 4. | IV Drug users | 30 | Nil | Nil |
| 5. | Jail in mates | 100 | 01 | 01 |
| 6. | Blood Donors (Control group) | 100 | Nil | Nil |

Table II: Analysis of the results with emphasis sex of the High Risk Groups.

| Sl. No | Category | Males | HIV Sero Positive | Females | HIV Sero Positive |
|--------|------------------------------|-------|-------------------|---------|-------------------|
| 1. | Out patients of STD Clinic | 150 | 13 | 50 | 02 |
| 2. | Female sex workers and MSM | 25 | 01 | 75 | 05 |
| 3. | Truck Drivers | 70 | 01 | -- | -- |
| 4. | IV Drug users | 30 | Nil | -- | -- |
| 5. | Jail in mates | 75 | 01 | 25 | Nil |
| 6. | Blood Donors (Control group) | 95 | Nil | 05 | Nil |

Table III: Incidence of STDs in HIV Sero Positive cases

| Sl. No | Sexually Transmitted Diseases | No. of Patients | % |
|--------|-------------------------------|-----------------|------|
| 1 | Genital Herpes | 06 | 26 |
| 2 | C.acuminata | 01 | 4.3 |
| 3 | Chancroid | -- | -- |
| 4 | Syphilis | 12 | 52.1 |
| 5 | Donovoniasis | -- | -- |
| 6 | Gonorrhoea | -- | -- |
| 7 | LGV | -- | -- |
| 8 | Vulvovaginitis | 05 | 21.7 |
| 9 | Balanoposthitis | 06 | 26 |

Table IV: Incidence of Syphilis, Hepatitis B in HIV Sero Positive High Risk Groups.

| Sl. No | Category | No. of Cases Studied | RPR | | Hepatitis B | | HIV Reactive |
|--------|----------------------------|----------------------|----------|--------------|-------------|----------|--------------|
| | | | Reactive | Non Reactive | Positive | Negative | |
| 1 | Out patients of STD Clinic | 200 | 06 | 09 | 02 | 13 | 15 |
| 2 | Female sex workers and MSM | 100 | 04 | 02 | 01 | 05 | 6 |
| 3 | Truck Drivers | 70 | 01 | -- | 01 | -- | 01 |
| 4 | IV Drug users | 30 | -- | -- | -- | -- | Nil |
| 5 | Jail in mates | 100 | 01 | -- | 01 | -- | 01 |
| 6 | Blood Donors | 100 | -- | -- | -- | -- | Nil |

Table V: Distribution of HIV I & II Infections.

| Sl. No | Category | No. of Cases Studied | Reactive for HIV I | Reactive for HIV II | Reactive for HIV I & II | Total |
|--------|----------------------------|----------------------|--------------------|---------------------|-------------------------|-------|
| 1 | Out patients of STD Clinic | 200 | 12 | 01 | 02 | 15 |
| 2 | Female sex workers and MSM | 100 | 04 | 01 | 01 | 06 |
| 3 | Truck Drivers | 70 | 01 | -- | -- | 01 |
| 4 | IV Drug users | 30 | -- | -- | -- | -- |
| 5 | Jail in mates | 100 | -- | 01 | -- | 01 |
| 6 | Blood Donors | 100 | -- | -- | -- | -- |

Table VI: Incidence of Hepatitis-B in High Risk Groups.

| Sl. No | Category | No. of Cases Studied | Hepatitis B | | Positive Ratio (%) |
|--------|----------------------------|----------------------|-------------|----------|--------------------|
| | | | Positive | Negative | |
| 1 | Out patients of STD Clinic | 200 | 08 | 192 | 04 |
| 2 | Female sex workers and MSM | 100 | 06 | 94 | 06 |
| 3 | Truck Drivers | 70 | 03 | 67 | 4.2 |

| | | | | | |
|---|---------------|-----|----|----|------|
| 4 | IV Drug users | 30 | 01 | 29 | 3.33 |
| 5 | Jail in mates | 100 | 02 | 98 | 02 |

Table VII: Incidence of Syphilis in High Risk Groups.

| Sl. No | Category | No. of Cases Studied | Syphilis | | Positive Ratio (%) |
|--------|----------------------------|----------------------|----------|--------------|--------------------|
| | | | Reactive | Non Reactive | |
| 1 | Out patients of STD Clinic | 200 | 68 | 132 | 34 |
| 2 | Female sex workers and MSM | 100 | 34 | 66 | 34 |
| 3 | Truck Drivers | 70 | 12 | 58 | 17.1 |
| 4 | IV Drug users | 30 | 02 | 28 | 6.66 |
| 5 | Jail in mates | 100 | 14 | 86 | 14 |

DISCUSSION

India has the second highest number of people living with HIV/AIDS. There has been variable association among co-infection of HIV/AIDS, Hepatitis –B and Syphilis depending on the geographical regions, risk groups, the type of exposure and the economical and educational status of the individuals. The study indicated that HIV infected patients are at high risk of viral co-infections and syphilis as evident that among HIV infected people, HBV infection is 21.7% and syphilis infections were 52.2%. Among high risk groups HIV infections were 4.6% hepatitis –B infection 4% and syphilis infections were 26%. [Table 3,4,5,6&7]

Co-infection of hepatotropic virus diseases markedly increases and affects the cell mediated responses and catalyses the viral replication. The incidence of HBV co-infection increases with disease progression. The study was conducted with patients limited to tertiary care referral hospital and among high risk groups. The implication of HBV and Syphilis infections and HIV patients is of serious concern to the developing Indian nation.

All these microorganisms are efficiently spread by both sexual and vertical transmission. Women play an important role in transmission of disease to children perinatally besides falling prey to STIs from their husbands.

Truck drivers are migrants and travel on very long routes for long time and they remain away from their wives long time. They are usually uneducated and unaware of health hazards like HIV and STIs/RTIs. They exhibit high promiscuous behavior and sometimes engage the cleaner with perverted sexual practices.

Prisons are also high risk places for transmission of infectious diseases and they can affect on the rate of community infection producing a high number of cases. Many inmates reside short periods of imprisonment and many of them return to their homes after completion of imprisonment or of during vacation^{10,11,12}. The study of prevalence of HIV, Hepatitis B and Syphilis in prisoners in different prisons in world like Australia Brazil, Portugal, and Italy reveal discrepancies in various study results may be due to difference in the prevalence of these infections in their communities^{13,14}.

CONCLUSION

When there is greater access to counseling and testing for STIs including HIV, associated with that is potential social stigma. Health education, counseling policies should be improved and exercised in a sensible way for early diagnosis and treatment and to overcome the "hidden epidemics" of STIs. Detection of P24 antigen in high risk groups for HIV infection and Hepatitis B DNA detection to detect Hepatitis B infection and FTA-ABS for suspected syphilis infections could give more specific results.

There is availability of vaccine against Hepatitis B infection, all the individuals of high risk behavior should be motivated for Hepatitis B vaccination. For all jail inmates at the time of admission the vaccination schedule against Hepatitis B infection should be considered in order to control viral replication in high risk groups.

REFERENCES

1. National AIDS Control Organisation (NACO), HIV/AIDS epidemiological Surveillance & Estimation report for the year 2005.
2. UNAIDS, Global report: UNAIDS report on the global Aids epidemic 2012. Geneva: 2012.
3. World Health Organisation, Global prevalence and incidence of selected curable sexually transmitted infections overview and estimates.
4. World Health Organisation. Global strategy for the prevention and control of sexually transmitted infections: 2006-2015.
5. Galcin SR, Cohen MS. The role of sexually transmitted diseases in HIV transmission. *Nat Rev Microbiol* 2004.
6. Baqi S, Nabi N, Hassan SN, Khan AJ, Pasha D. HIV antibody seroprevalence and associated risk factors in sex workers, Immune DeficSyndr Hum Retroviral 1998.
7. Ahmed MA, Zafar T. Brahmabhatt H, Imam G, UI- Hassan S. HIV/AIDS risk behaviours and correlates of injection drug use among drug users in Pakistan. *J Urban Health* 2003.
8. Mehendala SM, Rodrigues JJ, Brook Meyer RS. Incidence and predictors of HIV type 1 seroconversion in patients attending STD clinics in India. *J Infect Dis*, 1995;172;148691.
9. Lynn WA, Lightman S, Syphilis and HIV: a dangerous combination. *Lancet Infect Dis* 20004; 4:456-66.
10. Adjei AA, Armah HB, Gbagbo F, Ampofo WK, Boamah I, Adu-Gyamfi C, et al. correlates of HIV, HBV, HCV and syphilis infections among prison inmates and officers in Ghana: A national multicenter study. *BMC Infect Dis*. 2008;8:33.
11. Babudieri S, Longo B, Sarmati I, Starnini G, Dori I, Suligoi B, et al. correlates of HIV, HBV, and HCV infections in a prison inmate population: results from a multicentre study in Italy. *J Med Virol*. 2005;76(3):311-7.
12. Ghanbarzadeh N, NajafiSemnani M. (A study of HIV and other sexually transmitted infections among female prisoners in Birjand). *J Birjand Univ Med Sci*.2006;13:69-75.
13. Sabbatani S, Gluliani R, Fulgaro C, Paolilo P, Baldi E, Chiodo E. (HIVAb, HCVAb and HBsAg seroprevalence among inmates of the prison of Bologna and the effect of counseling on the compliance of proposed tests. *Epidemiol Prev*.2004;28(3):163-8.
14. Sud A, Singh J, Dhiman RK. Wanchu A, Singh S, Chawla Y. Hepatitis B virus co-infection in HIV infected patients. *Trop Gastroenterol* 2001;22: 90-92.

How to cite this article: Padmaja G V. Prevalence of HIV, Hepatitis B, and Syphilis in High risk groups in Warangal. *Perspectives in Medical Research* 2018;6(1).17-20.

Sources of Support: Nil, Conflict of interest: None declared