

A profile of human immunodeficiency virus seroconcordant/serodiscordant couples

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Abstract

Introduction: Heterosexual route is the most common mode of human immunodeficiency virus (HIV) transmission among married couples in India. The aim of the study was to determine HIV seroconcordance and serodiscordance among couples when one of the partners is HIV positive. **Materials and Methods:** A retrospective study which included HIV positive married cohabiting cases was carried out at the Department of Skin-VD, Medical College, Baroda. Detailed history of high-risk sexual behavior, blood transfusion (BT) and sexually transmitted infections (STIs) was taken. All the cases were examined for the presence of STIs and all males were examined for circumcision. The spouses of these cases were tested for HIV to know the seroconcordance/serodiscordance. **Results:** A total of 66 HIV positive cases were studied which included 34 males and 32 females. Forty-five cases had seropositive spouses that consisted of 20 out of 34 HIV positive males and 25 out of 32 HIV positive females. History of STI was present in 13 cases. History of BT in one of the spouses was present in 15 of 45 seroconcordant couples while in 6 out of 21 serodiscordant couples. Among 34 HIV positive males, circumcision was present in 8 cases out of which 6 were serodiscordant. **Discussion:** About 68% concordance suggests continued intramarital transmission probably due to lack of spousal communication and late testing. In cases having transfusion transmitted HIV, seroconcordance rate was found to be high. Such cases are usually asymptomatic and hence tested late but continue to transmit HIV by unprotected sexual activity.

Key words: Human immunodeficiency virus/AIDS, circumcision, seroconcordant-discordant, sexually transmitted disease

INTRODUCTION

According to the human immunodeficiency virus (HIV) estimations 2012, the number of people living with HIV/AIDS in India was 20.89 lakh, with an estimated adult (15–49 age group) HIV prevalence of 0.27%.^[1] The majority of the HIV infections are heterosexually transmitted, with transmission within marriage being the commonest scenario as more than

90% of HIV positive women are married and mostly in a monogamous relationship.^[2] Sexual practices followed by the couple also influences sexual transmission. The presence of sexually transmitted infections (STIs), condom use, circumcision and history of blood transfusion (BT) are probable factors responsible for serodiscordance or seroconcordance in HIV positive cases. There is an urgent need to target HIV negative individuals in discordant partnerships with effective behavioral change communications that will translate to safer sexual behavior.

Aims and objectives

- To determine HIV seroconcordance and serodiscordance among couples when one of the spouses is HIV positive

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- To study the role of factors such as BT, STIs and circumcision that are likely to influence intra-marital transmission.

MATERIALS AND METHODS

- Data of HIV positive married cohabiting cases attending Skin-VD OPD, Medical College, Baroda were analyzed retrospectively from May 2012 to Sept 2014. A detailed history of serostatus of the spouse, high-risk sexual behavior, BT and STIs along with examination findings of sexually transmitted infections (STIs) and presence or absence of circumcision were retrieved from case records
- Seroconcordant couples are those where both partners are seropositive for HIV
- Serodiscordant couples are those where only one of the partners is HIV seropositive.

RESULTS

Sixty-six HIV positive couples were included in the study out of which 34 (51.5%) index cases were males and 32 (48.5%) were females. Of the 66 couples, 45 (68.2%) couples were seroconcordant, and 21 (31.8%) couples were serodiscordant.

Twenty (58.8%) out of 34 HIV positive males (index cases) and 25 (78.1%) of 32 HIV positive females (index cases) had seropositive spouses [Table 1]. Among 34 HIV positive males, 8 cases were circumcised, out of which 6 (75%) were serodiscordant [Table 2]. History of STI was present in 13 cases, and seropositivity in spouse was present in 10 (76.9%) out of these 13 cases [Table 3].

History of BT was present in one of the partners in 15 (33%) out of 45 seroconcordant couples. History of BT was present in 6 seropositive partners out of 21 serodiscordant couples.

Marfatia *et al.*, reported 60% seroconcordance rate of 91 couples in a similar study.^[2] Bishnu *et al.*, reported seroconcordance in 58.50% and serodiscordance 28.43% out of newly diagnosed 306 HIV patients presenting to a teaching hospital of eastern India.^[3]

DISCUSSION

Sixty-eight percent seroconcordance suggests continued intra-marital transmission that may be due to lack of awareness about preventive practices, late testing and tendency of not disclosing seropositive status to their spouses due to the associated social stigma.

Table 1: Sex-wise distribution

HIV positive married cohabiting cases (n=66)	Seropositive spouse (%)	Seronegative spouse (%)
Males (n=34)	20 (58.8)	14 (41.2)
Females (n=32)	25 (78.1)	07 (21.9)
Total (n=66)	45 (68.2)	21 (31.8)

HIV=Human immunodeficiency virus

Table 2: Circumcision and seroconcordance

HIV positive males (n=34)	Seroconcordant	Serodiscordant	Total
Circumcision present	02	06	08
Circumcision absent	18	08	26
Total	20	14	34

HIV=Human immunodeficiency virus

Table 3: STIs and seroconcordance

HIV positive cases (n=66)	Seroconcordant	Serodiscordant	Total
STIs present	10	03	13
STIs absent	35	18	53
Total	45	21	66

HIV=Human immunodeficiency virus; STIs=Sexually transmitted infections

In married and cohabiting couples, once the child bearing function is completed, sterilization is usually preferred and hence they do not use barrier contraceptive methods. This promotes the transmission of HIV and other STIs.

Seroconcordance rate was high when one of the seropositive partners was a female. This may be due to the fact that HIV positive male is more reluctant to disclose his HIV status to the spouse while continuing unprotected sexual activity.

In couples having history of STIs, seroconcordance rate was high. This shows that identification and treatment of STDs offers an important additional strategy for prevention of HIV/AIDS in married couples. Though condom gives protection against STI, its protection against viral STI is low.

In cases having transfusion transmitted HIV, seroconcordance rate was high. Such cases are usually asymptomatic and hence tested late but continue to transmit HIV by unprotected sexual activity.

Among couples where the male partner was circumcised, seroconcordance rate was low. As reported in a meta-analysis by Siegfried *et al.*, there was strong evidence that medical male circumcision reduces the acquisition of HIV by heterosexual men by between 38% and 66% over 24 months.^[4] There is weak evidence that circumcision has a direct protective effect on HIV infection in

women, although there is likely to be an indirect benefit, since HIV prevalence is likely to be lower in circumcised male partners. Following the publication of the clinical trial results in early 2007, the World Health Organization/UNAIDS has advised that promotion of male circumcision should be included as an additional HIV strategy for the prevention of heterosexually acquired HIV infection in men in areas of high HIV prevalence.^[5]

CONCLUSION

Sexually transmitted infections and HIV are co-transmitters of each other. Prevention of STIs is vital for preventing HIV transmission. Lack of spousal communication is a key factor in perpetuating intra-marital transmission. Prevention of transmission of HIV in serodiscordant couples, especially when the HIV negative spouse is female, is crucial. Every HIV positive person has the right to get treatment but simultaneously it is his/her duty to disclose his/her serostatus to the spouse.

Female empowerment regarding not only contraception but safe sex practices is the need of

hour. Awareness and adaption of HIV preventive measures in larger population; prompt diagnosis as well as treatment of STIs in both the partners are of paramount importance in preventing intramarital transmission.

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