

Prevalence Of HIV Infection Among Antenatal Mothers In Chennai (Madras) India

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Introduction

India has the largest HIV infected people, as reported in the International conference on HIV held at Vancouver in the year 1996. In South India, commercial sex workers have the highest prevalence of HIV followed by their male clients who constitute the primary chain of transmission (WHO/GPA 1992). Many studies have been done to estimate the prevalence of HIV among high-risk commercial sex workers (CSW) and their clients. These studies do not reflect the prevalence of HIV in the general population. Prevalence of HIV in antenatal mothers, as a group, would to a greater extent indicate the prevalence of HIV in the female population, and also to some extent in the general population. Knowledge about the extent of illness due to HIV infection among antenatal women is essential for planning maternal and child health care in future. Hence this study was planned to estimate prevalence of HIV infection among pregnant women attending antenatal clinics in Chennai

Methods

Chennai (formerly Madras) is a densely populated city in South India, with a population of about 5.42 million people in 176 square kilometers. Three tertiary care hospitals and 3 primary health care centers providing antenatal health care services in Chennai, were selected for the study. The women utilising these services are mostly of lower socio-economic status. Antenatal women waiting for routine, antenatal check up were selected from the out patient department after registration by systematic random sampling, for a period of 6 months from January 1996 to June 1996.

All the selected women were interviewed using a pre-tested questionnaire to collect details regarding their socio-economic profile, details of present and past pregnancies, and risk factors for HIV. Blood was collected

for HIV antibody testing while collecting blood for VDRL test. At no place were names or any identifiers collected linking patients to samples, in order to maintain anonymity.

The initial screening was done by ELISA (Enzyme Linked Immuno Sorbent Assay) using Merind, Belgium test kits. Positive samples were tested in duplicate by different ELISA kits, and those confirmed positive were subjected to Western blot test using Diagnostic Bio Technology, Singapore.

Results

A total of 1000 pregnant women attending the antenatal clinics were screened for HIV antibodies. Women aged below 25 years formed 73% of the study population and women in the age group of 26-30 years and above 30 years formed 22.4 % and 4.6% respectively. Nine hundred and ninety six of the 1000 women were married and living with their husbands. The remaining four were widows who were already pregnant by the time they lost their husbands due to accidental causes. There was 38.8% primi gravidas, 38.3% second gravidas, and the remaining 22.9% third gravidas and above. A history of blood transfusion in the past was reported by 3% of the women. The literacy rate among them was 74.8%. Housewives formed 94.5%, 3% were unskilled labourers, 1.6% were vendors and 0.9% were skilled workers (i.e. tailoring, pottery, etc.). None of the women either smoked or consumed alcohol. Self reported history of sexually transmitted diseases in the past was given by 1.8% (18), out of whom 1% (10) gave history of genital ulcer disease (GUD) and the others gave history of genital discharge, and 1% of the women were VDRL reactive. Thirteen percent of these women gave history of previous abortion. Among the spouses 43.7% were unskilled workers, 27% were skilled workers (i.e. Electrician, Carpenter, etc), 21.6% were having small local business, and 7.7% were

drivers. Three (0.3%) of them had blood transfusion in the past, 50.2% were smokers and 32.2% regularly consumed alcohol. Neither the pregnant women nor their spouses were intravenous drug users.

Among the 1000 pregnant mothers studied, 4 were found to be positive for HIV antibodies with a prevalence rate of 4 per 1000 antenatal mothers during the 6 month period (95% C.I.0.1-7.9). Three of them were positive for HIV-1 antibodies and the other one was positive for HIV-2 antibodies. One woman was 22 years of age, 2 were 24 years, and one was 26 years old. Three of them were housewives and the remaining one was a street flower vendor. All the 4 women were married and living with their husbands. There was no history of extramarital or premarital sexual encounters among these women. Three were primi and the fourth was a second gravida. Of the 4 women, none had an abortion or blood transfusion in the past. None of them were smokers or consumed alcohol. Two of them were reactive to blood VDRL. Among them 1 gave history of genital ulcer in the past. The spouses of the HIV positive antenatal mothers were unskilled labourers, and among them 3 were smokers and 1 was an alcoholic. None of the spouses had blood transfusions in the past.

Discussion

This survey was done in pregnant women who attended antenatal clinics as a routine visit, who do not belong to any high risk group. Prevalence of 0.4% of HIV seropositivity among them indicates that HIV infection has penetrated into the non high-risk population. The prevalence rate among pregnant women in Vellore (100 Kms. from Chennai) ranged from 0.04% to 0.1% during the period 1987 to 1992 (Jacob et al. 1993). Prevalence rate in London was 0.4% during 1988 – 1990 (Christie et.al. 1992). The prevalence in some of the worst hit African countries like Congo and Libreville was 3.9% and 1.2% respectively in 1992 (Lallement et.al. 1992, Mounanga et.al. 1993). All 4 of the seropositive women in this study stated that they never had any premarital or extramarital sexual contact. This indicates that the most

probable source of infection for these women is their husbands. With the indication of a steady male partner as the source of HIV infection, it is vital to target intervention efforts at men.

Smoking and alcohol consumption are factors correlated with a host of behavioural variables. Though none of these women smoked or consumed alcohol, 50.2% of their spouses were smokers and 32.2% consumed alcohol. Among the spouses of the HIV positive women, 3 were smokers and 1 consumed alcohol. In Haiti, it was reported smokers were significantly more likely to be infected (Boulos et al. 1990), and from Rwanda it was reported that alcohol consumption as a significant risk factor for HIV infection (Allen et al. 1991). It is therefore important to target these two behavioural variables for intervention efforts.

A strong association between the history of at least one sexually transmitted disease (STD) or reactivity to VDRL test, with HIV infection has been established (Ann Chao et al. 1994). In this study population, 1.8% gave a history of STD and 1% were reactive to VDRL test. Two of the four seropositive women were reactive to VDRL test and one gave history of genital ulcer disease. VDRL reactivity and history of STD's are two areas to target intervention efforts in preventing further spread of the HIV / AIDS epidemic.

Conclusion

This study shows that the HIV epidemic has penetrated into the general population. Targeted and culturally appropriate intervention programs need to be implemented, with better understanding of sexual practices and attitudes. Educating the public about HIV / AIDS and its modes of transmission must be the primary tool of intervention programs. Mutual sexual monogamy, active promotion and acceptance of condom use, and early detection and treatment of STD's, should all be the main objectives of prevention programs targeting both men and women in our community. It is now thought that diagnosis of HIV infection is beneficial in antenatal women. It is

important to identify HIV positive persons, so that proper counseling can be given, both in regards to the decision to continue with the pregnancy, and also in treating HIV positive mothers with zidovudine during their pregnancy. Therefore, antenatal screening for HIV, if implemented, should be delivered universally, as is the case with the VDRL test. Implementation of such a screening program would require additional resources or re-allocation of existing resources. Though it may not be practical to screen all antenatal cases in developing countries like India, we suggest at least screening those with a history of STD's or those reactive to VDRL test. All institutions providing obstetric care should update their protocols for strict infection control measures in order to avoid risk to health care workers.

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