Original article

Study of risk factors for human Immunodeficiency virus transmission among seropositive cases

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Background: Infections with Human Immunodeficiency Virus (HIV) are being increasingly reported ever since it was shown to be the cause of Acquired Immunodeficiency Syndrome (AIDS) in 1984. Knowledge of risk group / risk factors helps in taking effective interventions to reduce the spread of HIV cases.

Methods: This study is an attempt to find out the risk groups / risk factors for HIV infection among the patients who attended the clinics of Manipal Teaching Hospital, Pokhara, Nepal.

Result: Out of 681 HIV suspected cases, 54 were found to be HIV seropositive, among them 76% were male and 24% were female (male: female ratio being 3.15:1). The age group between 30 and 39 had the highest number of HIV seropositive cases. The HIV seropositive cases were further classified into different risk groups such as Intravenous drug users (IVDUS).

Conclusion: Housewives, high-risk behavior, Nepali mercenaries, children and blood transfusion; IVDUS (33.33%) was found to be the major risk group.

Keywords: HIV, Risk groups, Nepal, Age, IVDUs

Introduction

Infections with Human Immunodeficiency Virus (HIV) are being increasingly reported ever since it was shown to be the cause of Acquired Immunodeficiency Syndrome (AIDS) in 1984[1]. More than forty million people are living with HIV worldwide at present[2]. One- fifth of the people infected with HIV live in Asia[3]. Nepal has moved from a low prevalence status to concentrated epidemics with prevalence of 17.3% and 68% among female sex workers and IVDUs respectively[4]. Without effective interventions, there can be a generalized epidemic that is not contained within any section of the population. An epidemic is considered 'generalized' when more than one per cent of the general population carries the virus. Regular medical check up in general population for HIV/AIDS is not possible due to various social, economical and ethical reasons. Knowledge of risk group / risk factors helps in taking effective interventions to reduce the transmission of HIV. With this on mind, the present study was carried out in Manipal Teaching Hospital, Pokhara, Nepal to determine the major risk group / risk factors for HIV.

Materials and Methods

Pertinent clinical examination of all the cases coming to Manipal Teaching Hospital was carried out. Suspected cases for HIV/AIDS were selected as the study group during the study period of March 15 2004 to September 15 2004. An interview was conducted among the suspected cases and the answers were recorded. Screening tests for HIV were performed on all suspected cases of HIV. The tests employed were Enzyme Linked Immunosorbent Assay (Biokit Bioelisa HIV- 1+2 (rec)) and spot test (HIV Tridot, J. Mitra & Co. Ltd.).

Results

Out of 681 HIV suspected screened cases, 54 were found to be HIV seropositive. Among them, 76% were males and 24% were females (male: female ratio being 3.15:1). The age

group wise distribution of HIV seropositive cases is shown in Table 1.

The HIV seropositive cases were divided into different risk groups as IVDUS, Housewives, High Risk Behavior, Nepali mercenaries, Children, Blood transfusion which is shown in Table 2.

Discussion

In the present study, among different risk groups, IVDUs (33.33%) and Housewives (20.67%) were found to be the major risk groups for acquiring HIV infection. Among IVDUs, HIV infection can spread through the use of shared, unsterilized, and contaminated needles and syringe[1].

Transmission to housewives may have occurred from their HIV infected sexual partners. Young women are often forced into sexual relationship and are frequently unable to negotiate safer sex. Moreover, even if women have knowledge of sexually transmitted diseases (STDs) and AIDS, their access to protection is limited due to their low status[3].

In the present study, 18.51% of infected cases were found to be involved in high-risk behavior such as sex workers and their clients. About 17% of HIV seropositive patients were persons who had migrated abroad for work and among these patients, most were found to be Ex- Indian army. In the context of Nepal, thousands of men and women live away from families as migrant workers. Removal from traditional social structure such as family can promote unsafe sexual practice such as engaging in multiple sexual partners and in commercial sex. An estimated 600,000-1.3million Nepali men migrate to India alone for seasonal and long-term work, and an estimated 400,000 of these go to Mumbai[5]. From the Voluntary Counselling and Testing (VCT) records, it was shown that nearly 23% of migrants seeking VCT services were found to be HIV positive[5].

In a Family Health International (FHI) study conducted in 2004, among the 200 street-based female sex workers (FSWs) and 200 establishment-based FSWs in Kathmandu, 2% of both types of sex workers were found to be HIV positive[5]. The total estimated number of FSWs in the Kathmandu valley is between 7,000 and 8,000.Teenaged girls are entering into commercial sex work, with about 30% of FSWs younger than 20 years of age. However, nearly 40% of sex workers are married, among whom less than 20% use condoms with their spouses. An estimated 50% of Nepalese sex workers in Mumbai brothels are HIV positive[5].

Present study showed 7.40 % of infected cases were children under the age of 5 years. Every year about 700000 neonates contact HIV from their mothers. 4 million children have been infected since the virus first appeared[3]. According to UNAIDS report, 2.3 million children infected with HIV were living in the year 2005. Children acquire HIV during pregnancy, labor, and delivery or through breast feeding[6]. Due to ignorance and lack of counseling, many HIV infected women give birth to child with out undergoing prophylaxis against the vertical transmission of HIV, hence the child acquires HIV and many children in Nepal are facing AIDS related deaths. The number of women delivering with a detectable viral load is a concern. The difficult socio-economic conditions many of these women experience attribute to the failure to achieve undetectable viral loads in the mother and minimize the HIV risk to the baby.

As of December 2005, the Ministry of Health, Nepal (MoHP) has reported 959 cases of AIDS and 5,828 HIV infections. Given the existing medical and public health reporting system in Nepal and the limitations of the national HIV/AIDS surveillance system, it is very likely that the actual number of cases is many times higher[5]. From March 2004 to September 2005, 54 HIV cases were recorded at Manipal tertiary care hospital alone.

United Nations, AIDS Programme reported that about 80-90% of infected people in developing countries have never been tested for HIV and remain unaware of the infection[7]. It reflects the enormity of the problem. The present study shows 33.33% of the infected cases are in the age group of 30-39 years, in consistency with the data from National Centre for AIDS and STD control (NCASC) which reports that 34.01% HIV cases are present in this age group[8]. This age group is also the most prolific age group for the socio-economic development of the country. If such high percentage of the manpower succumbs to this deadly disease, the development of the nation will also hinder.

The HIV/AIDS situation in the Kingdom of Nepal has been categorized as a concentrated epidemic. This is because HIV prevalence estimates for the general population are around 0.7% while they may be as high as 52% amongst some of the groups identified as being most-at-risk[5]. As the study showed, most-at-risk groups include intravenous drug users. The country's vulnerability to HIV and AIDS are further exacerbated by: Geographic and ethnic diversity, Its landlocked location between India and China, Poverty, inequality and underdevelopment, Civil conflict and political instability, Varied levels of knowledge about HIV transmission among most at risk groups and young people, Insufficient risk reduction behaviors among most-at-risk groups and young people[5].

According to UNAIDS, about 10,000-15,000 Nepalese are

expected to die of AIDS related deaths every year in the absence of effective treatment and care. Surviving on small income, most of them cannot even afford to buy enough food and basic medicines, let alone antiretroviral drugs. Some donor representatives argue that Nepal lacks the kind of infrastructure such as clinics, district hospitals and distribution units needed to provide effective Antiretroviral (ARV) treatment. Donor priorities are even written into Nepal's national AIDS strategy for 2002-2006. Prepared in consultation with donors and others, it declares:" In resource poor setting like Nepal, immediate universal access to ARV therapy and certain other AIDS related medical interventions is not possible". The largest donor USAID lists Nepal as one of the 10 priority countries that have a low prevalence of HIV/AIDS. In low prevalence countries the USAID aims to deliver prevention activities. However, Nepal has not shown promising development in the prevention of the new cases either. The data from NCASC shows that in August 2004 there were 4164 HIV positive cases including AIDS, in July 2005 the number increased to 5201 and further it increased to 7373 in July 2006.

The low prevalence currently estimated among the general population is understood to be masking an increasing prevalence among higher risk groups[5]

Nepal is Signatory to the Millenium development goals[9], which has set year 2015 as target to be able to stop the spread of HIV/AIDS. Routine study on the prevalence of HIV infection and effective intervention among risk groups by the Government and other heath authorities not only helps to minimize HIV/AIDS but also helps to monitor the effective management and awareness about the infection.

Table 1: Cumulative HIV Distribution by age group

Age Group	Male	Female	Total	Percentage (%)
0-5	3	1	4	7.40
6-9	0	0	0	0.00
10-14	1	0	1	1.85
15-19	0	0	0	0.00
20-24	3	1	4	7.40
25-29	5	4	9	16.66
30-39	**15**	3	**18**	**33.33**
40-49	8	3	11	20.37
50 and above	6	1	7	12.96
Total	**41**	**13**	**54**	**100.00**
Male: female	**3.15: 1**			

Table 2: Cumulative HIV infection by risk group and sex

Subgroup	*Male*	*Female*	*Total*	*Percentage (%)*
High Risk Behavior	*9*	*1*	*10*	*18.51*
IVDUS	*18*	*0*	*18*	*33.33*
Ex Indian Army/Worked Abroad	*9*	*0*	*9*	*16.66*
Housewives	*0*	*11*	*11*	*20.67*
Children	*4*	*1*	*5*	*9.26*
Blood transfusion	*1*	*0*	*1*	*1.85*
Total	***41***	***13***	***54***	***100.00***

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