Prevalence of HIV-2 infection in Mumbai

Sir,

In 1984, 3 years after the first report of a disease that was to be known as AIDS, researchers discovered the primary causative viral agent, the Human Immunodeficiency Virus type 1 (HIV-1). In 1986, a second type of HIV, called HIV-2, was isolated from AIDS patients in West Africa, where it may have been present decades earlier. Studies of the natural history of HIV-2 are limited, but to date comparisons with HIV-1 show some similarities while suggesting differences. Both HIV-1 and HIV-2 have the same modes of transmission and are associated with similar opportunistic infections and AIDS. In persons infected with HIV-2, immunodeficiency seems to develop more slowly and cases are milder. Compared to persons infected with HIV-1, those with HIV-2 are less infectious early in the course of infection. As the disease advances, HIV-2 infectiousness seems to increase; however, compared with HIV-1, the duration of this increased infectiousness is shorter.[1] Perinatal transmission of HIV-2 is also not documented.

HIV-2 infections are predominantly found in Africa. West African nations report a prevalence of HIV-2 infection of more than 1% in the general population. The prevalence rate of HIV-2 infection in India is not available so far. Even though the HIV-1 infection is abundantly found, HIV-2 infection is also detected sporadically.[2]

We undertook a study in the Integrated Counseling and Testing Center (ICTC) of a tertiary care hospital of Mumbai from January 2007 to December 2009 to estimate the prevalence of HIV-2 infection in Mumbai.

Out of 42,961 clients tested for HIV antibodies using rapid screening tests, 149 (0.35%) were found to have HIV-2 infection. Of these, 90 (60.4%) clients were exclusively HIV-2 infected, whereas the remaining 59 (39.6%) clients were co-infected with HIV-1 and HIV-2. Of the 149 HIV-2 infected clients, 99 (66.4%) were males and 50 (33.6%) were females. Murugan and Anburajan[2] observed a prevalence of 0.29% of HIV-2 infection in south Tamil Nadu. Similarly, Soloman *et al*.[3] observed a prevalence of 0.8% of HIV-2 among urban population and 0.3% among rural population in Tamil Nadu.

In our study, majority of the HIV-2 infected clients (55%) were in the age group of 35–49 years, followed by 22% in the age group of 25–34 years and 17.5% in the age group of ≥50 years. Only three clients, i.e., 2% were children (≤14 years). HIV-2 infection in children is rare. Compared to HIV-1, HIV-2 seems to be less transmissible from an infected mother to her child. However, cases of transmission from an infected woman to her fetus or newborn have been reported among women who had primary HIV-2 infection during their pregnancy. In our study, all three children were exclusively HIV-2 infected with HIV-2 infected mothers, suggesting mother to child transmission. Nevirapine prophylaxis, currently being used in Prevention of Parent to Child Transmission Program in our country, is ineffective in HIV-2 infection. Zidovudine therapy has been demonstrated to reduce the risk for perinatal HIV-1 transmission and also might prove effective for reducing perinatal HIV-2 transmission. Zidovudine therapy should be considered for HIV-2 infected expectant mothers and their newborns, especially for women who become infected during pregnancy.

Little is known about the best approach to the clinical treatment and care of patients infected with HIV-2.

Given the slower development of immunodeficiency and the limited clinical experience with HIV-2, it is unclear whether antiretroviral therapy significantly slows progression. Not all of the drugs used to treat HIV-1 infection are as effective against HIV-2. *In vitro* (laboratory) studies suggest that nucleoside analogs are active against HIV-2, though not as active as against HIV-1. Protease inhibitors should be active against HIV-2. However, non-nucleoside reverse transcriptase inhibitors (NNRTIs) are not active against HIV-2. Whether any potential benefits would outweigh the possible adverse effects of treatment is unknown.

Monitoring the treatment response of patients infected with HIV-2 is more difficult than monitoring people infected with HIV-1. No Food and Drug Administration (FDA)-licensed HIV-2 viral load assay is available yet. Viral load assays used for HIV-1 are not reliable for monitoring HIV-2. Response to treatment for HIV-2 infection may be monitored by following CD4+ T-cell counts and other indicators of immune system deterioration such as weight loss, oral candidiasis, unexplained fever, and the appearance of a new AIDS-defining illness. More research and clinical experience is needed to determine the most effective treatment for HIV-2.

So it is high time to assess the exact prevalence and incidence of HIV-2 infection in India and to frame special guidelines and different regimens for management of HIV-2 infection and for the prevention of mother to child transmission. Otherwise, we will have to face serious resistant strains of HIV-2 which will possibly pose a problem in our country in the future as the present regimen given in government anti retroviral therapy (ART) centers is not highly active anti retroviral therapy (HAART).

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