

HIV 2: A Benign Onlooker or A Subtle Threat?

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ABSTRACT

HIV-2 infection, originally discovered in West Africa, has now been found in many countries throughout the world including India. Despite it being a long acquaintance with the virus, not much is known about it conclusively. The present study was conducted at the ICTC of a tertiary care hospital catering to the needs of Jaipur and adjoining districts, to find the prevalence of HIV 2 among ICTC attendees. A total of 8190 clients accessed ICTC services during the study period, out of which 135 were HIV-seropositive, giving a prevalence of 1.64%. There was only a single positive case for HIV 2, giving a seroprevalence of 0.01% and none was reactive for antibodies of both HIV-1 and HIV-2. We suggest that in low prevalence areas like ours, assays capable of detecting both HIV 1 and HIV 2 must continue to be used to make our understanding of the deadly virus better and also make our combat more effective.

Keywords: HIV 2, ICTC, Seroprevalence

REPORT

HIV-2 infection which was originally discovered in west Africa, has now been found in many countries throughout the world, including India [1]. Given the increased blurring of geographical boundaries, because of extensive people traffic around the globe, a heightened surveillance is needed. Although HIV-2 is less pathogenic than HIV-1, some HIV-2-infected patients develop advanced and AIDS-related conditions, which can lead to death [1, 2].

Despite it being a long acquaintance of the human immunodeficiency virus, not much is known about it conclusively.

The modes of transmission are the same as those for HIV-1, namely sexual contact, blood-borne exposure and perinatal transmission. However, HIV-2 has a lower infectivity and it is notable for a longer asymptomatic phase and a slower progression to AIDS. In addition, it is also characterized by higher CD4 cell counts and lower viral Ribo Nucleic Acid (RNA) levels than those which are seen in HIV-1 infection. Only little is known about optimal management of HIV-2 infection, nor is there any current Food and Drug Administration (FDA)-approved assay for quantification of HIV-2 RNA. Given these wide grey zones in the understanding of HIV 2, we decided to undertake this study. ICTC is a part of HIV prevention program and it is a place where a person gets counselling and testing done, on his/her own will, or as he/she is advised by a medical provider. This is the entry point for comprehensive HIV care and treatment, as well as its prevention [1, 2].

The present study was conducted at the ICTC of the Microbiology Department of Mahatma Gandhi Medical College, which is a tertiary care hospital which caters to the needs of population of Jaipur and adjoining districts, to find the prevalence of HIV among ICTC attendees. It was approved by institutional ethical committee and it included all attendees of the ICTC, who were referred from various departments and surrounding hospitals or who were direct walk-in attendees, from July 2009 to June 2013. After obtaining informed consents from them and after providing pre-test counselling to them, 5 ml blood samples were withdrawn from them, sera were separated and they were subjected to three rapid HIV tests (Immunocomb J Mitra & Co. Pvt Ltd, Delhi, India. SD BIOLINE HIV-1/2 3.0, Standard

Diagnostics, Inc. Korea and PAREEKSHAK HIV 1/2 Triline Card Test, Bhat Bio-Tech India Pvt Ltd.) by following the manufacturer's instructions, as per National Aids Control Organization (NACO) guidelines. Samples which showed positive test results in all the three tests were declared as HIV positive. Data was summarized by using percentages and it was analyzed.

A total of 8190 clients accessed Integrated Counseling and Testing Centre (ICTC) services during the study period, out of which 135 were HIV-seropositive, thus giving a prevalence of 1.64%. There was only a single positive case of HIV 2, which gave a seroprevalence of 0.01% and none was reactive for antibodies of both HIV-1 and HIV-2 i.e. 99.2% of the total bulk of HIV infections was attributable to HIV-1. All the sero positive clients were referred to the ART Centre for care and management after providing post test counselling to them.

DISCUSSION

Since the first evidence of HIV 2 infection was seen in India in 1991, studies done in different parts of India have shown varied seroprevalences which ranged from 0 to 7% [3]. In the present study, 0.7% of the total HIV-reactive individuals were infected with HIV-2. Studies which were conducted in Delhi and Pune revealed almost similar HIV-2 sero positivities of 0.03% each [4, 5]. Data reported from south India showed a prevalence of 0.13%- 1.8% [6].

This study highlights that though HIV-2 is geographically restricted mainly to west Africa, it is prevalent in India also. A persistent lower viral load is one reason for a lower incidence rate and the transmission risk which is seen in HIV-2 infection, than that which is found in HIV-1. In general, after HIV-2 seroconversion, the viral load tends to remain low for a longer period than is typically found in HIV-1 infection. Approximately 5 to 15% of people who are infected with HIV-1 are considered to be long-term non-progressors versus 86 to 95% of people who are infected with HIV-2 [7].

The CDC recommends testing for HIV-2 infection in persons who are at risk, based on exposure history, in individuals with illnesses that suggest HIV infection but whose HIV-1 test results are not positive, and in people who have unusual HIV-1 western blot patterns. It is

particularly important to identify and differentiate the two viruses, as the two are not only different, but as there are also differences in their drug susceptibilities [2].

To conclude, in low prevalence areas like ours, assays which are capable of detecting both HIV 1 and HIV 2 must continue to be done. This will make our understanding of the deadly virus better and it also make our combat more effective.

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