

## EVIDENCE FOR HIV-2 INFECTION IN NEPAL

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### ABSTRACT

Assessment of the presence and prevalence of HIV-2 antibodies in patients attending the Universal College of Medical Sciences Teaching Hospital, Bhairahawa, western Nepal was done. A total of 1534 patients sera were screened for the presence of HIV-1 and HIV-2 antibodies from March 2000 to May 2003. A total of 3 (0.195%) patients were found to be sero-positive for HIV-2 antibodies. Out of the above three patients, 1 (0.065%) was infected with HIV-2 only and the remaining 2 (0.13%) were infected with HIV-1 and HIV - 2 both. This evidence of HIV-2 presence implicates serious outcomes as HIV-2 has not been reported from hospital patients in Nepal.

*Key Words: HIV-2, sero-prevalence, hospital patients, AIDS.*

### INTRODUCTION

HIV type 2 ( HIV-2 ) was isolated in 1986 from West African AIDS patients and sero-positive asymptomatic individuals.<sup>1</sup> By comparison with HIV-1, HIV-2 is characterized by lower rates of sexual and peri-natal transmission, lesser cell killing, lower viral burdens, more gradual CD 4 cell loss, slower rates of progression to AIDS, death and relative geographical confinement. At the epidemiological, clinical and molecular levels HIV-1 and HIV-2 are far more dissimilar than the nomenclature suggests.<sup>2</sup>

HIV-2 has become increasingly prevalent in Europe,<sup>3</sup> Brazil,<sup>4</sup> US<sup>5</sup> and more recently in India.<sup>6</sup> However, the prevalence of HIV-2 is still low as compared to HIV-1. In Nepal, only one referred case was found to be sero-positive for both HIV-1 and -2 antibodies among blood donors.<sup>7</sup> As reports documenting HIV-2 presence and prevalence in Nepal are lacking, the present study attempts to document and determine the presence and prevalence of HIV-2 among patients population attending a Teaching Hospital in western Nepal.

### MATERIALS AND METHODS

Study population consisted of suspected HIV infected cases, indoor patients, out-patients and low-risk group cases like ante-natal cases and cases before undergoing any surgery. A total number of 1534 patients sera were tested for HIV-1 and HIV-2 antibodies.

The HIV-1 and HIV-2 tests were performed by HIV (TRI-DOT) kit (J. Mitra & Co. Ltd, India) having sensitivity of 99.6% and specificity of 99.7% on a world-wide panel, according to product monograph. Only qualitative detection of antibodies to HIV-1 and HIV-2 was done in sera samples. The positive samples were retested on a different occasion. Only those sera which showed positive results on both the occasions, were declared sero-positive.

Clinical history and other relevant details were noted of sero-positive cases.

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**Table I : Details of HIV-2 sero-positive patients**

Nos.	Sex	Age years	HIV-1 Sero-positive	HIV-2 Sero-positive
1	Male	28	+	+
2	Male	52	+	+
3	Male	35	-	+

## RESULTS

A total of three (0.195%) patients were found to be sero-positive for HIV-2, out of the 1534 hospital patients tested for HIV-1 and HIV-2 antibodies. Out of the above three cases, one (0.065%) patient was sero-positive for HIV-2 only and the remaining two (0.13%) were sero-positive for HIV-1 and HIV-2 both, as shown in Table I. All the three HIV-2 sero-positive cases were males.

The first case of HIV-2 sero-positive was identified in January 2002 (He a male, aged 28 years, weight 60 kg) was an intravenous drug user (IDU) with poly substance abuse-phensadil, tidigesic and brown sugar. His brother was also an IDU and a drug trafficker too. He was admitted to psychiatric ward in the De-addiction Centre. He had normal total and differential white cell counts and a resident of Sonauli, Belhiya (right on the India border) and was co-infected with HIV-1 as well.

The second case was of a male aged 52 years, weight 45 kg and was having cough with mucoid expectoration, fever presenting on and off for the last 5 years, had loss of appetite and loss of weight. He had oral candidiasis and stayed in Mumbai, India with sexual exposure to casual sex worker but originally belonged to Rupandehi district in western Nepal.

His sputum for acid fast bacilli (AFB) was found negative, with a normal total and differential white cell counts and was co-infected with HIV-1 also.

The third HIV-2 sero-positive case was a male, aged 35 years, weight 36 kg and showed alterations in bowel habits (for the last 2-3 months), low to medium grade pyrexia (for the last 2-3 months) and had dysphagia with abdominal tuberculosis along with oesophageal candidiasis. He was on anti-tubercular therapy and was found sero-positive for HIV-2 only.

## DISCUSSION

Evidence of existence of HIV-2 infection has been documented in other countries<sup>3-5</sup> and in India.<sup>6</sup> Only one report mentioned a referred HIV-2 sero-positive case among blood donors in Nepal.<sup>7</sup> No other reports were available about presence and prevalence of HIV-2 in Nepal. HIV-2 transmission is considerably lower than HIV-1 either through sex or peri-natal routes. The present study reveals that dual infection with HIV-1 and HIV-2 does occur and is present in this region of Nepal.

AIDS was first detected in Nepal in 1988<sup>8</sup>. During the early 1990s, HIV sero-prevalence surveys have shown a gradual increase in the prevalence of HIV infections. HIV / AIDS epidemic in Nepal has changed from a "low level" epidemic to a "concentrated" epidemic within specific sub-groups of sex workers and intra-venous drug users.<sup>9</sup> All the three HIV-2 sero-positive patients in our study group had risk behaviour. One was an intra-venous drug user, the other had oral candidiasis with a history of stay in Mumbai, India and sexual exposure to casual sex worker there and the third HIV-2 sero-positive case was suffering from abdominal tuberculosis and oesophageal candidiasis.

One limitation of the present study needs to be noted. We were not able to conduct confirmatory test (i.e western blot) for HIV as these facilities were not available in our present set-up. But all sera that were tested sero-positive on first occasion, were retested on a second occasion to confirm their sero-positive status. Only those sera that reacted positive on both the occasions were finally considered to be true sero-positive.

Our study clearly showed the presence of HIV-2 infection in Nepal and this calls for a serious consideration of HIV/AIDS situation in Nepal as HIV-2 will contribute to additional morbidity and mortality in the general population in this region of south-east Asia.

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