Seroprevalence of HIV-2 in and around Nagpur

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Abstracts: Backround: Human immunodeficiency virus type 2 (HIV- 2) belongs to the family Retroviridae and is morphologically similar to HIV-1. Reliable and up-to- date information on the HIV-2 epidemic in India is still lacking. Methodology: We conducted this study to know the seroprevalence of HIV-2 in our region. Results: A total 15046 samples were screened at ICTC that includes 6343 from ANC mothers and 8703 samples from direct walk-in clients and referred patients.for HIV-2 antibodies. Also, we found 9 (0.10%) samples positive for HIV-2. One patient was coinfected with HIV-1 and HIV-2. There were no HIV-2 positive cases in ANC and paediatric age group. Conclusion**:** As HIV-2 is being reported from various parts of the country and its treatment modalities differ from HIV-1 hence screening for HIV-2 should be carried out routinely. [Gedam D NJIRM 2015; 6(2):54-56]

Key Words: HIV-2, seroprevalence, coinfection

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Introduction: Human immunodeficiency virus type 2 (HIV- 2) belongs to the family Retroviridae and is morphologically similar to HIV-1. The two viruses have approximately40-60% identity at the amino acid level and clinical studies have shown similar route of transmission and effect on the immune system,although the rate of transmission of HIV-2 is lower and the incubation period to AIDS appears to be longer for HIV-2 compared with HIV-1.[1] The transmission rate for HIV-2 compared to HIV-1 is very low both by heterosexual route and mother to child transmission.[2]

The prevalence of HIV-2 remains highest among the West African countries like Guinnea Bissau, Ivory Coast, Senegal, Burkina Faso, The Guinea, Ghana and Gambia.[3] West African nations report a prevalence of HIV-2 infection of more than 1% in general population.[4].Since the first case of HIV-2 from India was reported in 1991,others have been identified from geographicallydiverse states, yet reliable and up-to- date information on the HIV-2 epidemic in India is still lacking.[5]So this study was conducted to know the seroprevalence of HIV- 2 infection in our region.

Material and Methods: This study was conducted in Integratedcounselling and testing centre, from April 2012 to June 2013. Patients and ANC motherswho attended ICTCundergone pretest counseling. Five ml of blood samples were collected after pretest counseling and screened for HIV-1 and HIV-2 antibodies by rapid test according to NACOguidelines(first test-Comb-aids,second test-Parikshak line and third test-parikshak spot). The tests were performed at Department of Microbiology, Indira Gandhi Government Medical College, Nagpur. HIV-2 positive patients were confirmed by Western blot at NARI Pune.

Results: A total 15,046 samples were screened at ICTC that includes 6343 samples of ANC mothers and 8,703 samples of direct walk-in clients and referred patients from different clinical departments.There were 4,978 males and 3,725 femalesamongst direct walk-in and referred patients. A total 696(7.99%) were positive for HIV-1antibodieswhile9(0.10%) were positive for HIV-2 antibodies.Onepatient(0.14%)was co-infected with both HIV-1 and HIV-2. All the ANC patients screened were negative for HIV-2 antibodies but there were 35 (0.55%) positive for HIV-1 antibodies.

Table1: Sex-wise distribution of HIV positive cases in direct walk-in and referred patients.

Gender	Total Samples	Positive(%)	
		HIV-1(%)	HIV-2(%)
Male	4978	407 (8.17)	5(0.10)
Female	3725	289 (7.75)	4(0.10)
Total	8703	696 (7.97)	9 (0.10)

There were 696 HIV- 1 positive cases and 9 HIV-2 positive cases that includes 4 females and 5 males.

Table 2; Age and sex wise distribution of HIV positive cases

Age group	Male		Female	
	HIV-1 (%)	HIV-2 (%)	HIV-1 (%)	HIV-2(%)
0-14 yrs	23 (5.65%)	0	21 (7.26%)	0
15-24yrs	20(4.91%)	0	12(4.15%)	0
25-34yrs	92(22.60%)	0	77(26.65%)	1(25%)
35-49yrs	217(53.32%)	3 (60%)	145(50.18%)	2(50%)
>50yrs	55(13.52%)	2 (20%)	34(11.76%)	1(25%)
Total	407	5	289	4

The majority of HIV-1 and HIV-2 positive cases were from sexually active age group (25 -49 years). The youngest seropositive case of HIV- 2 was a 30 years old female and the oldest was a 65 years old male. The only co-infected patient was a 52 years old male.

Discussion: The human immunodeficiency virus (HIV) continues to be a burden globally and presents serious public health problems in the developing countries, especially in India.[6] It is important to differentiate between HIV-1 and HIV-2 virus as clinical course and treatment modalities differ.[7]Treatment of HIV-2 is complicated by its well known intrinsic resistance to the 'first generation' non-nucleoside reverse transcriptase inhibitors (NNRTIs) ,nevirapine and efavirenz. [8]

Though HIV-1 infection is seen commonly, data regarding the epidemiology of HIV-2 is not yet available in India. In the present study out of 8703 sample 696(7.99%) were positive for HIV-1 and 9 (0.10%) samples were positive for HIV-2. Different studies have shown the seroprevalence of HIV-2 in India ranging from 0.03 % to 0.35 %.[7,9]In the present study most of the HIV-2 positive cases were in the age group 35-49 years. This could be attributed to more risky sex behavior practices in this age group. Out of 9 HIV-2 positive patients 5 (55%)were male and 4 (45%) were female.In the present study none of the patient was < 14 years of age, though Agrawal et al have reported 2 % incidence in this age group.[9] HIV-2 infectionis rare in children, compared to HIV-1, HIV-2 seems to be less transmissible from an infected mother.One male patient (0.14%) aged 52 yr was coinfected with both HIV-1 and HIV-2.Coinfection with HIV-1 and HIV-2 has been reported with varying frequency ranging from 0.09 % to 39.6% by different workers.[9, 10]None of the ANC was positive for HIV-2, similarly none of the patient was positive in the paediatric age group 0-14 years in our study.

As HIV-2 is being reported from various parts of the country and its treatment modalities differ from HIV-1, screening for HIV-2 should be carried out routinely. Although HIV-2 is not a global public health problem on the same scale as HIV-1 yet those infected should be afforded the same standard of clinical care as HIV-1 infected individuals.

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