



SPECTRUM OF OPPORTUNISTIC INFECTIONS IN HIV-2 PATIENTS IN AND AROUND BELGAUM, SOUTH INDIA

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Abstract

Background: HIV-2 is less common worldwide as compared to HIV-1. We conducted a retrospective study regarding the presentation of HIV-2 in Belgaum area.

Material and Methods: We screened suspected HIV patients using rapid and ELISA techniques. All reactive patients were differentiated in to HIV-1 & 2 by Western blot. HIV-2 infected patients were screened for opportunistic infections depending on clinical presentations.

Results: Twelve patients found to be infected only with HIV-2 infection. Chronic diarrhoea and weight loss was the commonest symptom. Four patients had Cryptosporidial infection alone (33.33%), three with *Isospora belli* alone (25%) and one with both infections (8.33%). Three patient's sputum samples were positive for AFB (25%) and one among them had oral and oesophageal Candidiasis (*Candida albicans*) (8.33%). One patient CSF sample showed capsulated yeast cells in negative stain and in culture *Cryptococcus neoformans* was isolated (8.33%).

Conclusions: Along with HIV-1, HIV-2 is also sporadically circulating in our area. As compare to HIV-1, HIV-2 also presented with same clinical presentation and same spectrum opportunistic infections.

Keywords: HIV-2, *I. belli*, *C. neoformans*

Introduction

The HIV pandemic is a continuing health emergency. This pandemic is dominated by HIV-1 with limited circulation of HIV-2. HIV-2 is limited to relatively few areas in the world, mainly Africa and some parts of Europe.¹ In Asia, 95% of these cases are from India.² These cases are sporadic in nature and rarely reported.³

Compare to HIV-1, HIV-2 is more indolent in nature, having lower transmissibility mostly through heterosexual route and it produces slow progressive immunodeficiency.⁴ As HIV is one of the important infection prevalent in our area and considering the above differences of HIV-1 & 2, we screened HIV-2 patients in our area and studied its mode of transmission with its presentation and opportunistic infections.

Materials and Methods

This study was carried in the clinical Microbiology laboratory of our hospital during the period from Jan 2000 to Dec 2005. All the serum samples from suspected patients were screened for HIV infection by ELISA using X-cyton India and UBI HIV Elisa. These patients, who were attending OPD and admitted in the different wards of the hospital. Informed consent was taken and pre-test counselling was done.

Sera which showed reactive by ELISA were further confirmed by using HIV 1 & 2 Tridot kit J. Mitra India. HIV Tridot is an Immunochromatographic test, is coated with HIV 1 & 2 antigens. All the sera which gave HIV-2 spot test alone were included in the study. All the sera which showed HIV-2 spot were further tested by Line Immuno Assay with Innolia HIV-1 /2 Ab Innogenetics N.V. Belgium or by Western Blot for HIV 1 & 2 by J Mitra & Co India. These assays have recombinant gp-36 antigen specific for HIV-1 & 2 or dual reactivity. The results of these tests were interpreted on the basis of instructions of the manufacturers.

All HIV-2 reactive patients from Western Blot reactive were included in the study. From these patients various clinical samples were submitted, depending on the associated clinical diagnosis. For the enteric pathogens, stool samples were collected in wide mouth screw cap bottle and stool was analysed for helminthic and protozoal infections by routine and formal ether concentration. Smears were made by these samples and stained with Modified ZN stain and Trichrome staining. CSF samples were screened for Cryptococci using India ink and cultured on Sabouraud's slope. Sputum samples were screened for AFB by direct smear and after Petroff's concentration. Swab was used to collect the oral Candidiasis and Gram stain and culture was done.

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Results

A total of 12 patients were found to be infected with HIV-2 alone after all the confirmatory tests i.e. Western Blot and LIA. Of the 12, nine were males (75%) and 3 were females (25%). Mean age of these patients is 34 years (range 20-45 yrs). Among the 12 patients, eight were from in and around Belgaum and four were from neighbouring Goa state. All the male patients had the history of heterosexual behaviour. All the 12 patients were well educated and from middle class family.

Of these 12 patients, eight (66.67%) had AIDS according to CDC category. Common symptom of these (eight) patients were chronic diarrhoea and loss of weight more than 10 kgs per year. Three patients had cough with expectoration and fever since two years (25%). One had meningitis symptoms.

Four patients had Cryptosporidial infection alone (33.33%), three with *Isospora belli* alone (25%) and one with both infections (8.33%). Three patient's sputum samples were positive for AFB (25%) and one among them had oral and oesophageal Candidiasis (*Candida albicans*) (8.33%). One patient CSF sample showed capsulated yeast cells in negative stain and in culture *Cryptococcus neoformans* was isolated (8.33%).

Discussion

It is evident from our study that, HIV-2 prevalent in and around Belgaum sporadically along with HIV-1. In India, the reported mode of transmission of HIV-2 is through heterosexual route along with blood transfusion³ and vertical route.⁵ In our study, heterosexual route is the only route for transmission HIV-2 infection in our patients. This may be because of number of the patients is less and none of them were recipients of blood or blood products³ in the past and also had high risk factor like heterosexuality⁶ and IV drug users.⁷

Most common method used for differentiating HIV-1 and HIV-2 infected patients is by Western Blot. Other methods used for differentiating HIV-1 and 2 were Immunofluorescent,⁸ Radioimmuno-precipitation⁹ and newer methods like RIBA, Molecular techniques.¹⁰ We used Western Blot method for the differentiating the HIV-1 and HIV-2 in HIV reactive patients. Even though these newer methods are more sensitive techniques, Western blot is an easy and cheap method and not requiring any special instrument as compared to the other methods.

The symptoms of HIV-2 related AIDS were not different from those of HIV-1 related AIDS in Indian region.¹¹ All these patients had commonly presented with same spectrum of clinical manifestations as HIV-1 infected patients. The major symptom was chronic diarrhoea with loss of weight. This is because of the decreased immunity in such HIV patients resulting in

overwhelming and fatal opportunistic infections. The spectrum of opportunistic infections, such as GI protozoal pathogens, Mycobacteria, *C.neoformans* and *C.albicans* was comparable to HIV-1 infections. Vittecoq D et. al., also reported the presence of Pulmonary tuberculosis in HIV-2 infected patient.⁹ *P. jiroveci* was not seen in our cases as seen in other studies.¹² Only one of our patients had Cryptococcal infection which was not reported by others.¹² We tried to search in literature for opportunistic infections in HIV-2 infected patients in India and there are no reports regarding such infections. According to us, this may be the first report about the opportunistic infections in HIV-2 patients from India.

We conclude herewith that, the present study highlights the presence of HIV-2 in this region. Compare to HIV-1 infection, HIV-2 has same way of transmission like HIV-1 and along with the same opportunistic infections among them as reported by others in HIV-1 infected patients. Finally, the findings in this study are limited due to small sample size. The study should contain more number of patients to obtain conclusive results.

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