


<b>Human Immunodeficiency Virus Type 2 Infection in Albania</b>			<b>Healthcare</b>
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### Abstract

This is the very first study undertaken in Albania, to investigate the presence of the HIV-2 infection as a co-infection with HIV-1, in sera samples at the national reference laboratory of HIV/AIDS. The seroprevalence of HIV-2 was evaluated in 260 sera samples, that were confirmed with HIV-1, preserved in -20 degree, were tested for HIV-2. Diagnosis of the HIV-2 infection was done through the identification of specific antibodies with serologic method. All these samples have been tested with the rapid immunochromatographic test, HEXAGON HIV of the third generation for the identification of antibodies against HIV 1 and HIV 2 (Human Germany). From the 260 sera samples HIV-1 positive that have been tested for the HIV-2, 8.85% resulted positive for the HIV-2 infection. Persons infected only with HIV-2 have not been discovered yet in Albania. There is an interesting data that 87% of the samples positive to HIV-2 correspond to males and most of these persons have acquired HIV infection abroad. Having said that, considering also that most of the Albanian males have emigrated for economic reasons, without their regular sexual partner, these vulnerability factors have driven towards adopting risky behaviors to acquire HIV-1 and HIV-2 as a co-infection.

### Introduction

The first confirmed HIV/AIDS case, in Albania, was reported in 1993. Sero-epidemiological studies in regard to HIV, started during 1988 till 1993, have shown no HIV confirmed case. The target groups were those considered at that time as risk groups in Albanian population. Democratic changes after 1990 in Albania were followed by massive exodus of the Albanian population towards the western world. During the first 10 years of democratic changes, migration in Albania has been a wide spread phenomenon, considered as an uncontrolled movement during the crisis situations. The existing data for Albanian migrants are not complete and realistic, due to the irregular nature of their movements and to the lack of possibilities to contact them. According to the data from the Ministry of Labor and Social Affairs, almost 1 million Albanians are living abroad.

The scale and dynamics of the HIV/AIDS epidemic in Albania are showing a steady increase every year since 1993. This is due to natural increase of cases and also to availability of more services for HIV/AIDS increasing the detection rate of the infection. A number of 550 cases of HIV infection till end of November 2012. 92% of these have acquired infection through sexual transmission route, 4% through the vertical route of transmission, 35 through infected blood, 1% through the intravenous drug injection route. The age group the most affected is from 30 to 40 years old, but HIV infection is present also in pediatric age and geriatric age. There is a significant increase of HIV cases acquired within the country in respect to those that have been acquired abroad.

Cases diagnosed with HIV/AIDS have been tested with EIA method. In the last years, the Ag/Ab method has been used, that includes both types of the virus (HIV 1/2). The confirmatory test used is Western blot (W.b) for the type 1 of the virus, where till 2009, all positive cases have resulted positive for HIV-1 and no one has resulted positive for HIV-2 (1,2,3,4). In 2009, the presence of HIV-2 was confirmed as a co-infection in a case confirmed for HIV-1 previously.

### Materials and Methods

In order to study co-infection of the two types of HIV virus, 1 & 2, it was undertaken this study at the Institute of Public Health, the national reference laboratory of HIV/AIDS.

260 sera samples, that were confirmed with HIV-1, preserved in -20 degree, were tested for HIV-2. Diagnosis of the HIV-2 infection was done through the identification of specific antibodies with serologic method. (5,6). All these samples have been tested with the rapid immunochromatographic test, HEXAGON HIV of the third generation for the identification of antibodies against HIV 1 and HIV 2 (Human Germany). This tests show separate bands for each type of the virus. Samples that have shown a colored band in the area 2, meaning positive for the antibodies against HIV-2, were confirmed with the confirmatory test NEW LAV BLOT II, Bio-Rad. Positive for HIV-2 were considered samples with at least three respective bands: ENV, GAG, POL in the confirmatory test.

### Results

From the 260 sera samples HIV-1 positive that have been tested for the HIV-2, 8.85% resulted positive for the HIV-2 infection. The characteristics of the persons diagnosed with a co-infection from HIV-1 and HIV-2 are presented in table 1.

**Table 1. Characteristics of the persons diagnosed**

<b>Gender</b>	
Male	20 (87)
Female	3 (13)
<b>Age</b>	
15-24	2 (9)
25-34	7 (31)
35-44	6 (26)

45-54	4 (17)
55-64	3 (13)
> 65	1 (4)

**Place of birth**

Urban	21 (91.3)
Rural	2 (8.7)

**Residence**

Tirane	17 (75)
Tropoje	1 (4)
Gjirokaster	1 (4)
Kukes	2 (9)
Librazhd	1 (4)
Shkoder	1 (4)

**Education**

8 years	13 (57)
High school	6 (26)
University	4 (17)

**Testing**

Referred from clinics	15 (65)
Volunteers	5 (22)
Blood donors	3 (13)

**Acquired infection**

Within the country	11 (48)
Outside of the country	12 (52)

**Mode of transmission**

Sexual	23 (100)
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**Died****3 (13)**

Males are counting for most of the infected cases 20 (87%), in comparison with females counting to 3 (13%). In regard to the age of the infected persons with HIV-2 there is a variation from 23 years old to 66 years old (mean age 39.86), the most affected group age is 25-44 years old with 13 cases (57%).

Most of these persons are referred from the clinics 15 (65%) and the rest are being tested voluntary 5 (22%) or are blood donors 3 (13%). Most of the infected cases have Lower level of education 13 (57%).

HIV-2 infection results in 12 cases (52%), to have been acquired abroad and 11 cases (48%) have been acquired within the country. Transmission route for all the cases is the sexual route.

## Discussion

This is the very first study undertaken in Albania, to investigate on the presence of the HIV-2 infection as a co-infection with HIV-1, in sera samples at the national reference laboratory on HIV/AIDS. HIV-2 infection is present at 8.85% of the sera samples HIV-1 positive. Persons infected only with HIV-2 have not been discovered yet in Albania.

According to similar studies undertaken in European countries and especially in neighboring countries with Albania, where most of Albanians emigrants are staying, have shown that infection from HIV- 2 is relatively rare. HIV-2, according to these studies, has been calculated to be less than 1% of all infected cases with HIV. Only in Portugal the prevalence of HIV-2 infection is high, counting for 13% to 29% of all the diagnosed cases with HIV (7, 8, 9, 10, 11). In Italy, HIV-2 has been found in 10.6% of the patients, with origins from the African countries (12).

Although these data are sparse, they confirm that HIV-2 is relatively rare in Europe. HIV-2 accounts for less than 1% of all HIV infections in most studies examined. This review and other studies (7-10) indicate however, that compared with other countries examined, the prevalence of HIV-2 infection is considerably higher in Portugal where HIV-2 infection accounts for 13% of all HIV positive STD patients and 29% of all HIV positive TB patients.

There is an interesting data that 87% of the samples positive to HIV-2 correspond to males and most of these persons have acquired HIV infection abroad. Having said that, considering also that most of the Albanian males have emigrated for economic reasons, without their regular sexual partner, these vulnerability factors have driven towards adopting risky behaviors to acquire HIV-1 and HIV-2 as a co-infection. There are no accurate data on the origins of the sexual partner/s of the Albanian males of our study, but a hypothesis can be that partner/s origins might be from African countries emigrants, that are endemic for HIV-2. This hypothesis might be supported also from another study done from the Institute of Public health in Albania, in cooperation with the Istituto Superiore di Sanita in Rome. In this study was found that subtype A and B of the HIV-1 constitutes 90% of the infected cases in Albania and it is a well known fact that there is a high prevalence of the subtype A of HIV-1, more common in the countries of the West Africa, while subtype B of HIV-1 is dominant in Europe, Americas, Japan, Thailand and Australia (13, 14, 15).

## Conclusions

The virus Type 2 is present in Albania and it is in a rate comparable with the other EU countries. HIV-2 is present as a co-infection with the HIV I type of Virus. There are not yet confirmed individuals infected only with HIV II type of virus.

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