



HIV INFECTION IN THE OLTENIA REGION AT THE BEGINNING OF THE XXIST CENTURY

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Abstract. Objectives: Epidemiological analysis of newly reported cases of HIV infection in the Oltenia region. Material and methods: Retrospective study of the Craiova Regional Center for Monitoring and Evaluation of HIV/AIDS from 01/01/2007 to 31/12/2009, in a group of 113 patients (Px), representing newly diagnosed cases with HIV infection. Results: During 2007-2009, the newly detected cases of HIV infection were chronologically divided as follows: 35 cases in 2007, 46 cases in 2008, 32 cases in 2009. The average age of Px was 24.59 years [limits 0.33-55], distribution by sex: F/M = 61/52 (53.99% F, 46.01% M). At the time of diagnosis, the average CD4 count was 209.22 cells/mm³ [limits 1-977], average HIV-RNA copies per mL = 4.9 lg [limits 1.69-6.31]. Distribution by clinical staging and immunological classification in HIV-related disease was as follows: 13 Px (11.50%) – A1, 15 Px (13.27%) – A2, 5 Px (4.42%) – A3, 11 Px (9.73%) – B2, 18 Px (15.92%) – B3, 2 Px (1.76%) – C1, 6 Px (5.30%) – C2, 43Px (38.05%) – C3. AIDS was diagnosed in 65.48% Px. Distribution by transmission route is: 50.45% - sexual, 45.13% - parenteral, 1.76% - vertical, 2.66% Px - unknown transmission route. Pregnant women were 15.29% of total new detected cases, which represents 29.5% of the total new cases in women. Anti-HIV antibody testing was performed for screening (employment, admission examination) in 3.53% cases. Opportunistic infections present at the time of HIV infection diagnosis were mostly represented by tuberculosis – in 27.43% Px. Conclusions: 1. In the Oltenia region, the number of the newly detected cases of HIV infection, in the last years, remains at a low but steady rate, a sign that in this area there are still major components in the complex epidemiologic process. 2. Increased frequency of HIV infection in women advocates predominantly for sexual transmission, the horizontal transmission to child, almost exclusively encountered during 1987-1990, having completely disappeared. 3. Late detection, in many cases related to the presence of opportunistic infections, leads to postponement of ARV therapy initiation and growth potential of HIV transmission in the community.

Keywords: HIV/AIDS, Oltenia, detection, transmission

Introduction

Globally, at the end of 2008 there were 33.4 million people registered with HIV infec-

tion, out of which 2.7 million new cases were detected; in the same period, 2 million patients with AIDS died [1].

On December 31st, 2009, in Romania, 16162 people with HIV infection (cumulative 1985-2009) appeared in the records of the National Committee to Fight AIDS (CNFAS), out of which 9,810 were children (aged 0-14 years from the date of diagnosis) and 6352 were adults (age >14 years from date of diagnosis). In 2009, 428 people were diagnosed.

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All deaths due to AIDS in this period, reported to CNFAS, are estimated at 5561 [2].

The incidence of HIV infection is increasing in many regions of the world. Early detection of these cases is correlated with increased duration and quality of life and with limiting the transmission of the virus, through ARV treatment.

In European Union countries, it is estimated that approximately 30% of HIV infected individuals in the community are still undiagnosed [3].

The objective of the study was an epidemiological analysis of the HIV infection in the Oltenia region (historical region in southern Romania), at the end of the first decade of the XXIst century, based on newly diagnosed cases.

Material and methods

Retrospective study, from 01/01/2007 to 31/12/2009, in the Regional Center (RC) for Monitoring and Evaluation of HIV/AIDS in Craiova, in which we monitored the patients (Px) of the Oltenia region, which includes the following counties: Dolj, Olt, Gorj, Mehedinţi. The study group included 113 patients (Px), representing the newly detected cases of HIV/AIDS. We didn't include the cases of Px that were resumed into evidence, in the period of study. Diagnosis of HIV/AIDS infection has been established for adults by determining antibodies to HIV by ELISA and Western-blot tests, respectively, for children aged 0-18 months, by determining HIV- RNA-PCR.

Clinical, biological and epidemiological data were collected from the primary records of the RC.

The statistical processing of data was performed with the Epi Info program, the significance of correlations was assessed by calculating the threshold for statistical significance (p) and the relative risk (RR), using the Fischer test. P -value <0.05 was considered statistically significant.

Results

During 2007-2009, the newly reported cases of HIV infection were chronologically divided as follows: 35 cases (30.97%) in 2007 (1.87/100,000 inhabitants), 46 cases (40.71%) in 2008 (2.46/100,000 inhabitants), 32 cases (28.31%) in 2009 (1.71/100,000 inhabitants). The geographical distribution is shown in Table I.

In Oltenia, the area with epidemiological risk, statistically significant for the incidence increase of HIV infection was the Olt county, in years

2007 ($p<0.05$; $1.60<RR=3.10<6.02$), 2008 ($p<0.05$; $1.26<RR=2.26<4.05$) and 2009 ($p=0.001$; $1.48<RR=2.95<5.90$) compared to Dolj, Mehedinţi and Gorj counties.

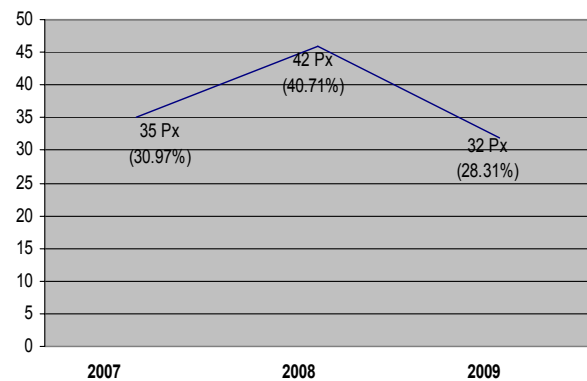


Figure 1. Chronological distribution of newly detected cases of HIV/AIDS

Distribution by age and sex was as follows: <1 year = 1 Px (0.88%) - female (F), 1-4 years = 1 Px (0.88%) - F, 10-12 years = 2 Px (1.76%) - 1F/1 male (M), 15-19 years = 43 Px (38.05%) - 24F/19M, 20-24 years = 23 Px (20.35%) - 13F/10M, 25-29 years = 14 Px (12.38%) - 8F/6M, 30-34 years = 12 Px (10.61%) - 6F/6M, 35-39 years = 7 Px (6.19%) - 3F/4M, 40-49 years = 7 Px (6.19%) - 4F/3M, 50-59 years = 3 Px (2.65%) - 2F/3M.

The analysis of the distribution by sex proves the predominance of HIV infection in women: F/M=61/52 (53.99% F; 46.01% M), but without statistically significant risk at Oltenia population level, in 2007 ($p>0.05$; $0.55<RR=1.07<2.08$), 2008 ($p>0.05$; $0.68<RR=1.21<2.16$) and 2009 ($p>0.05$; $0.61<RR=1.24<2.49$).

The mean age of Px was 24.59 years [limits: 0.33-55].

The probable mode of transmission was: 50.45% - sexual, 45.13% - parenteral, 1.76% - vertical, 2.66% Px - unknown (figure 2).

The marital status of Px with age >17 years at the time of HIV diagnosis was: 38 Px were unmarried (34.86%), 33 Px (30.27%) married, 36 Px in consensual union (33.02%), 2 Px divorced (1.84%). Discordant couples were recorded in 34 cases (49.27%).

Of all adults, 37 Px (33.95%) had traveled to Europe during the past 7 years.

At the moment of HIV/AIDS detection, 71 Px (65.14%) had no occupation; the remaining 38 Px (34.86%) were: 15 (39.47%) students, 8 (21.05%) workers, 3 (7.89%) retired, 2 (5.26%) farmers, 1

Year	Number of cases cazuri	%	Dolj		Olt		Gorj		Mehedinți	
			No. Px	Incidence /100,000 inhabitants	No. Px	Incidence /100,000 inhabitants	No. Px	Incidence /100,000 inhabitants	No. Px	Incidence /100,000 inhabitants
2007	35	30.97	10	1.40	18	3.79	4	0.79	3	1.004
2008	46	40.71	22	3.08	20	4.25	3	1.04	1	0.33
2009	32	28.31	13	1.82	16	3.36	2	0.52	1	0.34
Total	113		45		54		9		5	

Table I. Chronological and geographical distribution of newly detected cases of HIV/AIDS in the Oltenia region

(2.63%) - an engineer, teacher, reporter, forester, civil servant, policeman, waiter, electrician, dancer.

In the majority of Px newly diagnosed with HIV infection, the motive for testing of antibodies to HIV was predominantly the presence of opportunistic infections (70% of Px).

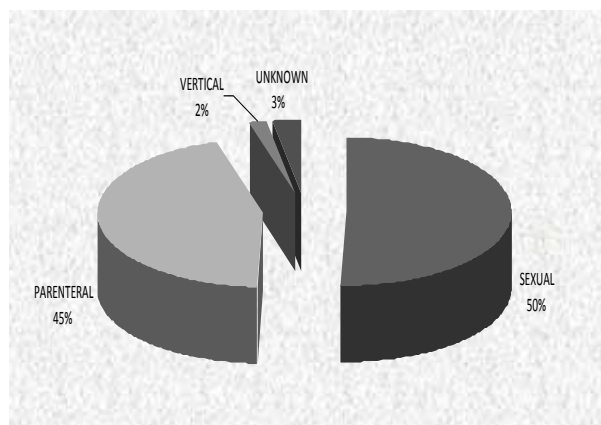


Figure 2. Probable mode of HIV transmission

The opportunistic infections present at the diagnosis of HIV infection were mostly represented by tuberculosis -31 Px (27.43%), followed by oropharyngeal/vaginal candidiasis -25 Px (22.13%), recurrent bacterial pneumonia -6 Px (5.31%), herpes zoster -4 Px (3.53%), persistent diarrhea -3 Px (2.65%), Kaposi sarcoma -2 Px (1.77%), genital warts -2 Px (1.77%), chronic parotitis -1 Px (0.88%), meningitis with *Cryptococcus neoformans* -1 Px (0.88%).

Pregnant women were 15.29% of all new detected cases, which represents 29.5% of the total number of new cases in women. Eight percent of newly diagnosed Px were sexual partners of people living with HIV/AIDS.

Anti-HIV antibody testing was performed for screening (employment, admission examination) in 3.53% cases.

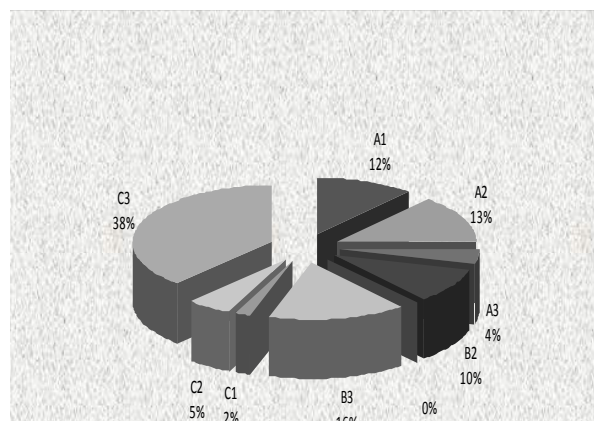


Figure 3. Distribution of Px by clinical and immunological stage at the time of HIV infection diagnosis

Children born from mothers infected with HIV accounted for 1.76% of newly detected cases.

At the time of diagnosis, the average CD4 count was 209.22 cells/mm³ [limits 1-977], average HIV-RNA copies per mL= 4.9 lg [limits 1.69-6.31]. The distribution of Px on the clinical and immunological stages of disease was as follows: 13 Px (11.50%) – A1, 15 Px (13.27%) – A2, 5 Px (4.42%) – A3, 11 Px (9.73%) – B2, 18 Px (15.92%) – B3, 2 Px (1.76%) – C1, 6 Px (5.30%) – C2, 43Px (38.05%) – C3. AIDS was diagnosed in 65.48% of Px (figure 3).

Discussion

In many European countries the number of newly detected HIV infection cases is continuously rising [4,5].

In 2008, in Central Europe, 1762 cases of HIV infection were diagnosed; the incidence (1.5/100,000 inhabitants) is low compared to that of Eastern Europe (17.9/100,000 inhabitants) and of Western Europe (7.2/100,000 inhabitants) [4]. At the level

of central European region, the highest rates are in Bulgaria, Czech Republic and Hungary (>5/100,000 inhabitants) with a double incidence compared to 2000 [4].

In our investigation, the number of Px newly detected with HIV infection in Oltenia has been relatively constant in the period 2007-2009, with low incidence, value comparable to that on national level (1.98/100,000 inhabitants in 2009) [2,6]. The highest incidence in the region has been established in Olt county, similar to that of the past 10 years [2].

The group of age 15-24 years has been a majority in our study (58.4% of cases), far exceeding the rates of Western Europe (10% of cases) and Eastern Europe (15% of cases) [4], probably because of the cases which have been infected through horizontal transmission in the period 1987-1990 and detected late.

In Oltenia region, newly detected cases of HIV infection were more common in women, both overall and by age group, the difference being more pronounced in the age group 15-24 (56.06% F vs. 43.93% M), where the rate is higher than that reported in Europe (22% F in Central Europe, 41% F in Eastern Europe and 30% in Western Europe F) [4]. Feminization of the HIV phenomenon is observed in several European countries [7], AIDS being the main cause of mortality of women of fertile age [8].

In Europe, the predominant mode of transmission of the infection is different depending on geographical region, thus, in the East, drug injection is still the main mode of transmission, in the Centre and the West prevailing the homosexual transmission mode followed by the heterosexual transmission mode [4]. The heterosexual mode of transmission is increased for many European countries [4], here is seen the decline of the cases of HIV infection sex between men [7,8].

In Central Europe, there are geographical differences regarding the mode of transmission of HIV, thus in 2008, over 50% of the newly diagnosed cases with infection have been transmitted by heterosexual contact in Albania, Bosnia, Herzegovina and Romania, unlike Croatia, Czech Republic, Hungary, Serbia, Slovakia and Slovenia, where over 50% of cases have been reported at homosexual [4].

In our research, the predominant mode of transmission for HIV infection has been the heterosexual contact, followed in frequency by the parenteral mode, with an important proportion; here we include those cases infected in the period 1987-1990

and detected late, that placed Romania in a special position at an European level in that period.

In Europe, in the year 2008, the vertical transmission has been registered in 1% of the newly detected cases [4,10]; there are countries like Holland [11], Switzerland [10], who have not had such cases. In our study, the mother-to-child transmission has been found in a small percentage, close to the European value.

Oltenia has reported a small proportion of cases with unknown risk factors for HIV, but Europe finds a high frequency of these cases (24% at the European level, 46% in the Central Europe) [4].

It is estimated that on European level, the rate of cases detected late is of 15-38%, being relatively stable in the past 10 years [12,13,14]. A study which has been performed in France, USA, UK, has found that the persons which have been infected with HIV, from heterosexual path, have had the highest risk of late diagnosis [15].

In Central Europe, in 2008, the rate of the newly detected cases in AIDS stage has been of 0.5/100,000 inhabitants; the highest rate has been found in Romania, 1/100,000 inhabitants [4].

In our region, the cases detected in AIDS stage have been in majority diagnosed late, through the occurrence of opportunistic infections, among which tuberculosis represented the most frequent AIDS related condition.

Tuberculosis is widespread in Eastern Europe [4,9], representing the opportunistic infection with the highest frequency at the time of diagnosis with HIV infection in adults and adolescents (32% -pulmonary tuberculosis, 12% -extrapulmonary tuberculosis).

In Central Europe, the most common AIDS-indicative diseases diagnosed are wasting syndrome (32%), pneumonia with *Pneumocystis jirovecii* (11%) and tuberculosis (10%) [4,9].

Given the constant frequency of detection of cases of HIV/AIDS infection in the recent years and the increased share of late-diagnosed cases, it can be assumed that there are still many undiagnosed cases in our region, probably due to an insufficient application of screening for HIV infection.

Conclusions

1. In the Oltenia region, the number of the newly detected cases of HIV infection, in the last years, remains at a low but steady rate, a sign that in this area there are still major components in the

complex epidemiologic process.

2. Increased frequency of HIV infection in women advocates predominantly for sexual transmission, the horizontal transmission to child, almost exclusively encountered during 1987-1990 having completely disappeared.

3. Late detection, in many cases related to the presence of opportunistic infections, leads to postponement of ARV therapy initiation and growth potential of HIV transmission in the community.

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