

Trends in HIV diagnoses and AIDS-defining conditions, Croatia 2009 to 2023



P216

Begovac, Josip^{1,2}, Benković, Ivana¹; Zekan, Šime^{1,2}, Vrsaljko, Nina¹ Santini, Marija^{1,2}

¹HIV/AIDS Department, University Hospital for Infectious Diseases, Zagreb, Croatia

²University of Zagreb, School of Medicine, Croatia

BACKGROUND: All persons living with HIV (PLWH) in Croatia (population: 3.9 million) are treated at one center, the University Hospital of Infectious Diseases (UHID) in Zagreb. **We aimed to assess the trend in presentation to care with an HIV diagnosis and AIDS-defining conditions (ADC) and to describe changes for the period 2009-2023.**

METHODS: The data were extracted from the electronic database at UHID. We included all PLWH who were treated at UHID in the period 2009-2023. Trends were examined by Joinpoint Trend Analysis Software and by the chi-square test for trend.

RESULTS: Of 1401 PLWH who entered care, 1205 have never been in care previously, and 196 were previously in care elsewhere ("in-migration"). **There was a decline in previously HIV-undiagnosed PLWH entering care after 2015** (Figure). The number of PLWH who in-migrated increased over the period reaching 41% (41 of 99) in 2023 (p-trend <0.001). 355 PLWH had 456 episodes of an ADC (Table 1.), with an insignificant trend over time (Figure).

The most frequent ADC was *Pneumocystis jirovecii* pneumonia (n=153, 33.6%) followed by oesophageal candidiasis and non-Hodgkin's lymphoma (NHL) (both n=42, 9.2%), Kaposi's sarcoma (n=41, 8.9%), and tuberculosis (n=33, 7.2%) (Table 2). The proportion of tuberculosis cases among ADC ranged from 20% (5/24) in 2009 to no cases in 2021 and 2022 (p-trend=0.018). Of 456 ADC, 326 (71.5%) occurred within 3 months of the HIV diagnosis with a nonsignificant trend over time (p-trend=0.111).

The median time from HIV diagnosis to a non-concurrent HIV/AIDS diagnosis was 6.6 (Q1-Q3, 3.3-11.3) years. PLWH with NHL had more frequently a non-concurrent HIV/AIDS diagnosis (23/42) compared to all other ADC (107/414, p<0.001), and had HIV-1 RNA less than 200 copies/ml in 42.9% (18/42) at diagnosis. 55 (15.5%) persons died within 6 months and 64 (18.0%) within 12 months from the first AIDS diagnosis (p-trend=0.438 and 0.502 respectively).

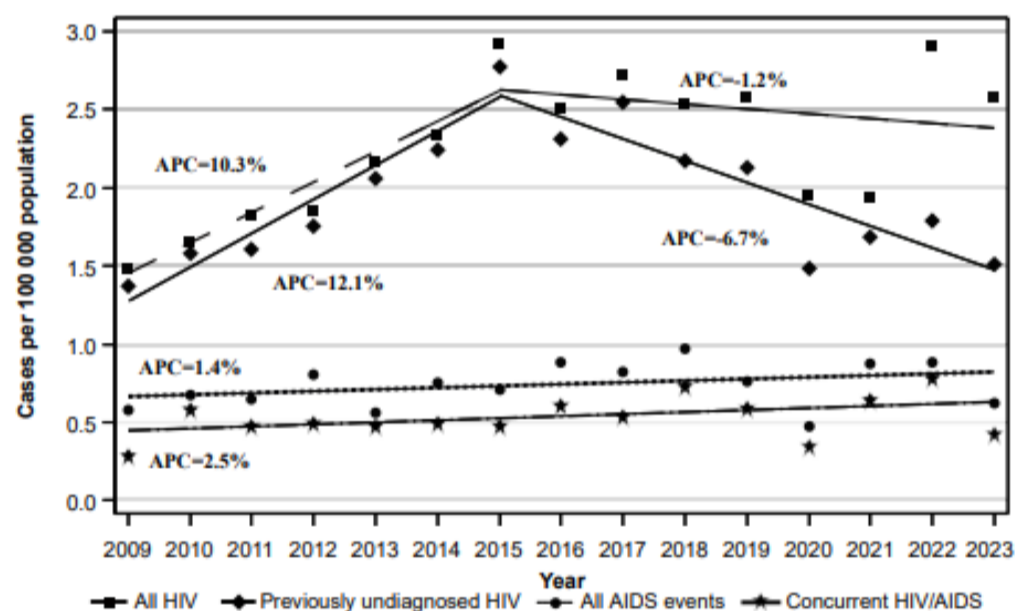


Figure. The trend in presentation to care with HIV and AIDS-defining diseases, Croatia, 2009 to 2023.

Table 2. AIDS-defining illnesses, Croatia, 2009 to 2023

AIDS-defining illnesses	Concomitant HIV and AIDS		Total AIDS diagnoses
	Yes	No	
<i>Pneumocystis jirovecii</i> pneumonia	117	36	153
Candidiasis, esophageal	34	8	42
Kaposi's sarcoma	31	10	41
Lymphoma (except primary brain)	16	22	38
Tuberculosis	22	11	33
HIV-encephalopathy	19	14	33
Wasting	20	6	26
Cryptococcosis, extrapulmonary	16	7	23
Brain toxoplasmosis	16	4	20
PML	8	3	11
CMV other sites	8	1	9
CMV retinitis	6	2	8
Mycobacteria, nontuberculous	4	3	7
Primary brain lymphoma	3	1	4
CNS focal disease, undefined	2	0	2
Cryptosporidiosis	2	0	2
Cervical carcinoma	0	2	2
Salmonellosis	1	0	1
Bacterial pneumonia, recurrent	1	0	1

PML, progressive multifocal leukoencephalopathy; CMV, cytomegalovirus; CNS, central nervous system;

Table 1. Main characteristics of 355 persons living with HIV with an AIDS-defining condition, Croatia, 2009 to 2023

CHARACTERISTICS	Total (N=355)
Gender, males	322 (90.7)
Age at clinical AIDS event, years, median (Q1-Q3)	43.0 (36.0-50.7)
MODE OF ACQUISITION	
MSM	278 (78.3)
Heterosexual	53 (14.9)
PWID	7 (2.0)
Other/unknown	17 (4.8)
CD4 cells, per mm ³ , median (Q1-Q3)	37.0 (16.0-94.0)
CD4 cell categories, mm³	
<50	193 (59.4)
50 to 200	94 (8.9)
>200	38 (11.7)
HIV-1 RNA copies/ml	
≥1000	288 (87.8)
< 1000	40 (12.2)
Calendar years of clinical AIDS diagnosis	
2009 to 2011	70 (19.7)
2012 to 2014	76 (21.4)
2015 to 2017	76 (21.4)
2018 to 2020	72 (20.3)
2021 to 2023	61 (17.2)
Calendar years of inclusion into care	
<2009	44 (12.4)
2009 to 2013	111 (31.3)
2014 to 2018	119 (33.5)
2019 to 2023	81 (22.8)
Concurrent HIV and AIDS diagnosis, yes	257 (72.4)
Living in Zagreb, yes	121 (34.1)
Died within 6 months of first clinical AIDS, yes	55 (15.5)
Died within 12 months of first clinical AIDS, yes	64 (18.0)
Number of clinical AIDS events per person	
One	275 (77.5)
Two	61 (17.2)
Three	17 (4.8)
Four	2 (0.6)

CONCLUSION: Since 2015, there has been a significant decline in the rate of previously HIV-undiagnosed PLWH entering care at UHID. Presentation with tuberculosis declined, whereas NHL compared to other ADC occurred more frequently in PLWH with a non-concurrent HIV/AIDS diagnosis.

Interventions to sustain the decrease of new HIV infections and to decrease AIDS presentations are needed.