PE29/28

Change of prevalence, diseases distribution and factors associated with the risk of AIDS presentation in Italy over last decade (2009-2018)

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EACS European AIDS Clinical Society
17th EUROPEAN AIDS CONFERENCE
November 6–9, 2019 | Basel, Switzerland

BACKGROUND

- Despite universal recommendations about early ART initiation, a consistent proportion of newly diagnosed HIV people continue to be diagnosed and to enter care late.
- In Europe, the annual proportion of patients presenting with AIDS between 2010 and 2013, accounted for 8-20% of all new HIV diagnoses[3], with a slight prevalence decline in the same period[3,4].
- A HIV diagnosis at the stage of advanced HIV infection (characterized by a CD4+ count less than 200 cell/mm3)[3] is still observed in a 28% of the new HIV diagnoses in Europe and a 37% in Italy[4].
- In 2016, according to the Italian HIV surveillance data, 76% of new AIDS diagnoses still occurred less than 6 months after the first HIV diagnosis, with an increasing proportion in the last years[5], and it was estimated that more than 6,000 HIV-positive people with low CD4 counts remained annually undiagnosed between 2012 and 2014 in Italy[6].
- Previous data from observational cohort in Europe[1,2] and in Italy[7] by 2009-2013, suggested that factors associated to presenting late to care were older age, IDU and heterosexual route of HIV transmission and to be migrant.

AIMS

The aims of this study were to investigate in ART-naïve patients:

- **Prevalence of AIDS presentation over the last decade (2009-2018)**
- **Temporal trends of AIDS presenters prevalence**
- **Factors associated with the risk of presenting with an AIDS defining event**

STUDY DESIGN AND METHODS

STUDY POPULATION

- All consecutive individuals in the Icona Foundation Study cohort firstly HIV diagnosed from January 2009 to December 2018 with chronic infection over three months preceding their enrolment were selected and divided into three groups:

a) **ART-naïve patients with an AIDS defining event (AIDS presenters)**;
b) **ART-naïve asymptomatic patients with chronic HIV infection and a CD4 count <=200 cells/mm3 (asympt CD4<=200)**;
c) **ART-naïve asymptomatic patients with chronic HIV infection and a CD4 count >200 cells/mm3 (asympt CD4>200).**

STATISTICAL ANALYSIS

- Comparisons of categorical and continuous variables among groups were made using Chi–square and Kruskal Wallis test respectively.
- Multivariable logistic regression was fitted to identify factors associated with the risk of presentation with AIDS.

RESULTS

Tab 1. Main characteristics of 7,001 HIV-infected naïve patients, according with grouped definitions at HIV diagnosis

N = 7,001		AIDS presenters n = 959 (13.7%)	asymptomatic CD4<=200 n = 1,565 (22.3%)	asymptomatic CD4>200 n = 4,477 (64.0%)	p - value
Female gender, n(%)		246 (25.6%)	335 (21.4%)	778 (17.4%)	<0.001
Age, yrs, median (IQR)		44 (36 - 53)	42 (34 - 51)	36 (28 - 45)	<0.001
Nationality, n(%)	Italian	561 (58.5%)	942 (60.2%)	2882 (64.4%)	<0.001
	Not Italian	255 (26.6%)	343 (21.9%)	809 (18.0%)	
	unknown	143 (14.9%)	280 (17.9%)	786 (17.6%)	
Days from first HIV test to enrolment, median (IQR)		9 (3-20)	12 (4 - 23)	16 (6-35)	< 0.001
Mode of HIV transmission	heterosexual	532 (55.5%)	808 (51.6%)	1515 (33.8%)	< 0.001
	MSM	272 (28.4%)	515 (32.9%)	2474 (55.2%)	
	IDU	45 (4.6%)	83 (5.3%)	186 (4.2%)	
	other/unknown	110 (11.5%)	159 (10.2%)	302 (6.8%)	
HCV Ab	positive	46 (4.8%)	93 (5.9%)	220 (4.9%)	<0.001
	negative	732 (76.3%)	1223 (78.2%)	3717 (83.0%)	
	not tested	181 (18.9%)	249 (15.9%)	540 (12.1%)	
HBs Ag	positive	59 (6.2%)	56 (3.6%)	158 (3.5%)	<0.001
	negative	729 (76.0%)	1244 (79.5%)	3685 (82.3%)	
	not tested	171 (17.8%)	265 (16.9%)	634 (14.2%)	
CD4 at enrolment, median (IQR)		42 (19 - 115)	94 (40 - 146)	447 (325 - 610)	< 0.001
HIV-RNA, copies/mL	< 100.000 copies/mL	220 (22.9%)	524 (33.5%)	2972 (66.4%)	< 0.001
	> 100.000 copies/mL	632 (65.9%)	950 (60.7%)	1254 (28.0%)	
	not available	107 (11.2%)	91 (5.8%)	251 (5.6%)	
eGFR, median (IQR)		96 (75-113)	93 (74 - 110)	90 (76 - 109)	0.005
# of comorbidities	0	776 (80.9%)	1329 (84.9%)	4051 (90.5%)	< 0.001
	1	151 (15.7%)	190 (12.1%)	329 (7.4%)	
	2	26 (2.7%)	43 (2.8%)	75 (1.6%)	
	3/4	6 (0.7%)	3 (0.2%)	22 (0.5%)	
Employment status	unemployed	143 (14.9%)	204 (13.0%)	577 (12.9%)	<0.001
	employed	325 (34.0%)	557 (35.6%)	1660 (37.1%)	
	self employed	110 (11.5%)	194 (12.4%)	557 (12.4%)	
	occasional	47 (4.9%)	48 (3.1%)	120 (2.7%)	
	student	9 (0.9%)	18 (1.1%)	234 (5.2%)	
	retired	45 (4.7%)	68 (4.4%)	86 (1.9%)	
	housewife	33 (3.4%)	29 (1.9%)	62 (1.4%)	
	other	38 (3.9%)	54 (3.4%)	146 (3.3%)	
	unknown	209 (21.8%)	393 (25.1%)	1035 (23.1%)	
Level of education	primary school	83 (8.7%)	102 (6.5%)	161 (3.6%)	< 0.001
	Junior high school	180 (18.8%)	273 (17.4%)	574 (12.8%)	
	high school/university	333 (34.7%)	574 (36.7%)	2041 (45.6%)	
	unknown	363 (37.9%)	616 (39.4%)	1701 (38.0%)	

Fig 1. Overall prevalence of AIDS presentation (2009-2018)

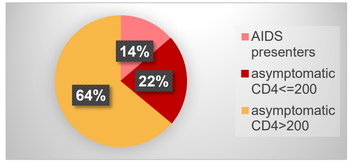
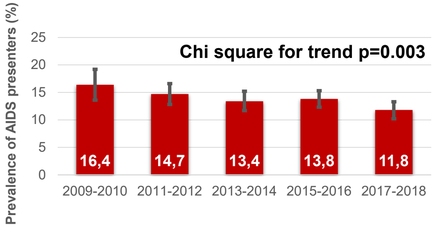


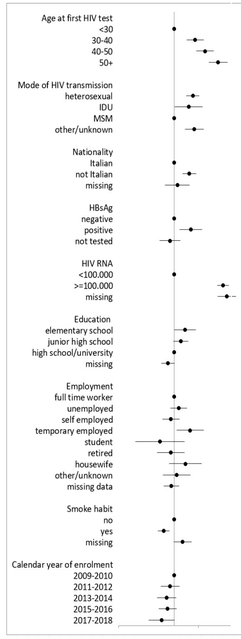
Fig 2. Prevalence trend of AIDS presentation (2009-2018)



Tab 2. Prevalence trend of AIDS presentation (2009-2018)

Years	AIDS pres N (%)	95%CI	Total N
2009 - 2010	113 (16.4%)	13.6%-19.2%	689
2011-2012	198 (14.7%)	12.8%-16.6%	1344
2013-2014	187 (13.4%)	11.6%-15.1%	1400
2015-2016	268 (13.8%)	12.3%-15.3%	1940
2017-2018	193 (11.8%)	10.3%-13.4%	1628
2009 - 2018	959 (13.7%)	12.9%-14.5%	7001

Fig 3. Adjusted OR of being AIDS presenters at HIV diagnosis by fitting a multivariable logistic regression model (adjusted also for gender, HCV Ab coinfection and comorbidities)



	OR	95%CI	
Age at first HIV test			
<30	1.00		
30-40	1.83	1.43	2.34
40-50	2.44	1.90	3.14
50+	3.54	2.70	4.64
Mode of HIV transmission			
heterosexual	1.71	1.42	2.07
IDU	1.51	1.01	2.26
MSM	1.00		
other/unknown	1.79	1.37	2.34
Nationality			
Italian	1.00		
not Italian	1.55	1.26	1.89
missing	1.09	0.77	1.56
HBsAg			
negative	1.00		
positive	1.62	1.17	2.24
not tested	0.88	0.65	1.20
HIV RNA			
<100.000	1.00		
>=100.000	4.08	3.45	4.82
missing	4.55	3.48	5.95
Education			
elementary school	1.36	0.99	1.86
junior high school	1.21	0.97	1.50
high school/university	1.00		
missing	0.83	0.68	1.01
Employment			
full time worker	1.00		
unemployed	1.14	0.90	1.45
self employed	0.91	0.71	1.16
temporary employed	1.59	1.07	2.35
student	0.66	0.33	1.35
retired	0.91	0.61	1.35
housewife	1.38	0.86	2.22
other/unknown	1.08	0.72	1.60
missing data	0.92	0.73	1.15
Smoke habit			
no	1.00		
yes	0.74	0.62	0.88
missing	1.28	0.99	1.65
Calendar year of enrolment			
2009-2010	1.00		
2011-2012	0.89	0.68	1.17
2013-2014	0.80	0.61	1.05
2015-2016	0.83	0.64	1.07
2017-2018	0.69	0.48	1.01

CONCLUSIONS

- **AIDS presentation still occurs in approximately 14% of newly HIV diagnosed individuals in Italy in the last decade, even though a slight reduction trend in the last years was observed.**
- **Older age, heterosexual route, non-Italian origin, low educational level and casual employment seems to identify a socio-demographic profile of HIV people who presents for care very late (at time of AIDS diagnosis).**
- **Predictive factors of late presentation are consistent with what reported in previous observation in the Icona cohort by 2009[1], suggesting a well defined stable characteristics of people presenting late for care in Italy.**
- **These are key informations for planning focused interventions to discover unknown infections.**

Acknowledgments – Icona Foundation Study Group

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SCIENTIFIC SECRETARY: A d'Arminio Monforte, A Antinori, A Castagna, F Ceccherini-Silberstein, A Cozzi-Lepri, E Girardi, S Lo Caputo, C Mussini, M Puoti, CF Perno. **STEERING COMMITTEE**: A Antinori, F Bai, C Balotta, A Bandera, S Bonora, M Borderi, A Calcagno, A Capetti, MR Capobianchi, A Castagna, F Ceccherini-Silberstein, S Cicalini, A Cingolani, P Cinque, A Cozzi-Lepri, A d'Arminio Monforte, A Di Biagio, E Girardi, N Gianotti, A Gori, G Guaraldi, G Lapadula, M Lichtner, S Lo Caputo, G Madeddu, F Maggiolo, G Marchetti, L Monno, C Mussini, S Nozza, CF Perno, C Pinnetti, M Puoti, E Quiros Roldan, R Rossotti, S Rusconi, MM Santoro, A Saracino, L Sarmati. **STATISTICAL AND MONITORING TEAM**: A Cozzi-Lepri, I Fanti, L Galli, P Lorenzini, A Rodano', M Macchia, A Tavelli. **BIOLOGICAL BANK INMI**: F Carletti, S Carrara, A Di Caro, S Graziano, F Petroni, G Prota, S Truffa.
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Funding

ICONA Foundation is supported by unrestricted grants from BMS, Gilead Sciences, Janssen, MSD and ViiV Healthcare

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