



## Oral Communication

## Session/Topic: HIV transmission and primary HIV infection

N. Title:

### OC 77 Prevalence of recent HIV infection (RHI) and characterisation of the RHI population in a cohort of patients seen for care in Italy over 1997-2014

#### Authors:

S. Nozza<sup>1</sup>, A. Cozzi-Lepri<sup>2</sup>, S. Rusconi<sup>3</sup>, A. Gori<sup>4</sup>, P. Cinque<sup>1</sup>, A. Ammassari<sup>5</sup>, P. Caramello<sup>6</sup>, G. Tambussi<sup>1</sup>, A. D'Arminio Monforte<sup>3</sup>, G. Marchetti<sup>3</sup> for ICONA Study Group

#### Affiliation:

<sup>1</sup>San Raffaele Scientific Institute, Milano, Italy, <sup>2</sup>Research Department of Infection and Population Health, University College London, London, UK, <sup>3</sup>Università degli Studi di Milano, Milano, Italy, <sup>4</sup>Division of Infectious Diseases, Department of Internal Medicine, "San Gerardo" Hospital, University of Milan-Bicocca, Monza, Italy, <sup>5</sup>INMI Spallanzani, Roma, Italy, <sup>6</sup>Department of Infectious Diseases, Amedeo di Savoia Hospital, Torino, Italy

#### Abstract:

**Background:** Early diagnosis of HIV infection is important to improve access to antiretroviral therapy and prevention services. The incidence of recent HIV infection (RHI) in Italy is not monitored. The aim of this analysis was to use the data of a national cohort of HIV-infected patients seen for care in Italy to estimate the incidence and the characteristics of RHI enrolled over time.

**Materials and Methods:** We included patients enrolled in ICONA cohort with documented dates of HIV-negative and positive antibodies tests. Participants' date of HIV seroconversion was estimated as the midpoint between the last available HIV-negative and the first available HIV-positive test. People with such a date recorded within 1 year of their date of enrolment were defined as RHI. We grouped our study population into RHI and non-recent infections (NRHI).

We investigated the prevalence of RHI at entry in the cohort and the trend of this proportion by calendar period of enrolment using a Chi-square test. We also identified other factors independently associated with being a RHI by means of a logistic regression model. Kaplan-Meier curves were employed to compare the time from enrolment to ART initiation in RHI and NRHI overall and after stratification by calendar period of enrolment.

**Results:** Over 19 years of recruitment in ICONA, the date of HIV seroconversion could be estimated for 2608 out of a total of 12,616 enrolled patients. Of these, 981 (37.6%) had evidence of RHI. Patients' characteristics according to calendar year are summarized in Table 1. The most frequent mode of transmission was men who have sex with men (MSM, 71.1%), 42.9% were females and 41.8% declared high education level (University or above). Median CD4 count was 481 (IQR: 337-643) cells/mm<sup>3</sup> and HIVRNA 4.65 log<sub>10</sub> copies/mL (IQR:4.11-5.16). There was a significant trend for an increase proportion of RHI over time (increasing from 36.9% in 1996-2000 up to 56.7% in more recent years, p=0.015). Other factors with different prevalence in RHI and NRHI were MSM (OR=1.36, p=0.034), female gender (OR=0.67 p<0.001) and age (OR=0.77, p<0.001)

Overall, 49% (95% CI ) of participants started antiretroviral therapy by 3 years from enrolment. There was no difference in the 3-year cumulative probability of ART initiation between RHI and NRHI (74.2% in RHI vs. 74% in NRHI, log-rank p=0.73 ). When restricting to specific calendar periods of enrolment, 1996-2000 was characterized by a significant faster rate of ART initiation in RHI compared to NRHI (p=0.04) (Figure 1).

**Conclusions and discussion:** The increase in RHI over-time most likely reflect a higher propensity of HIV testing in selected populations. Our data did not confirm a higher therapy initiation rate in RHI vs NRHI with the exception of 1996-2000. The difference in RHI among different year strata is confirmed by Cox analysis after controlling for age.

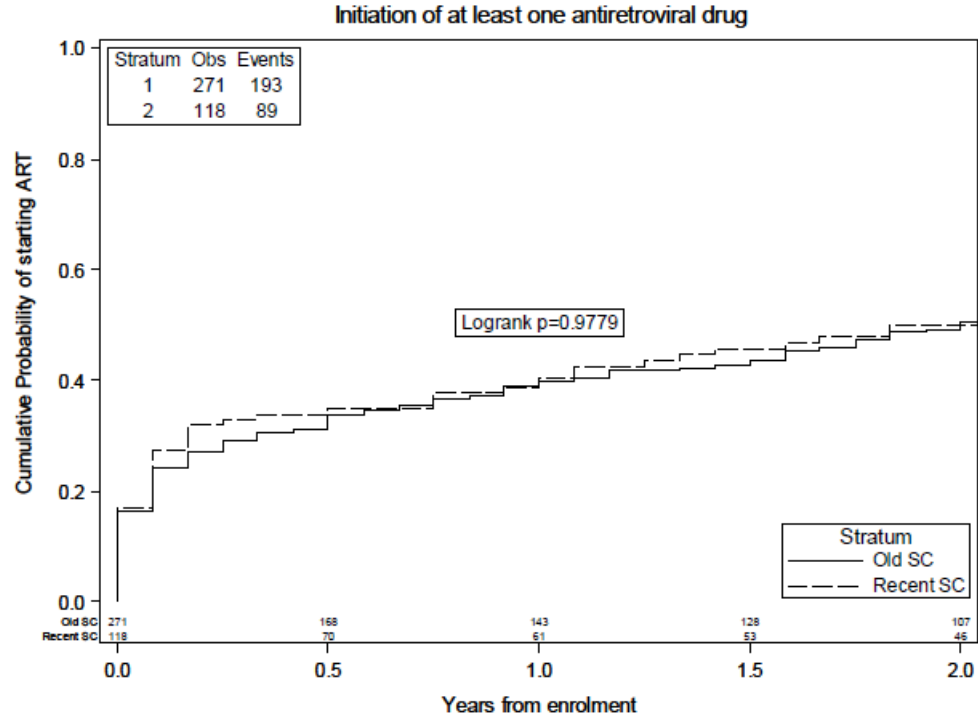
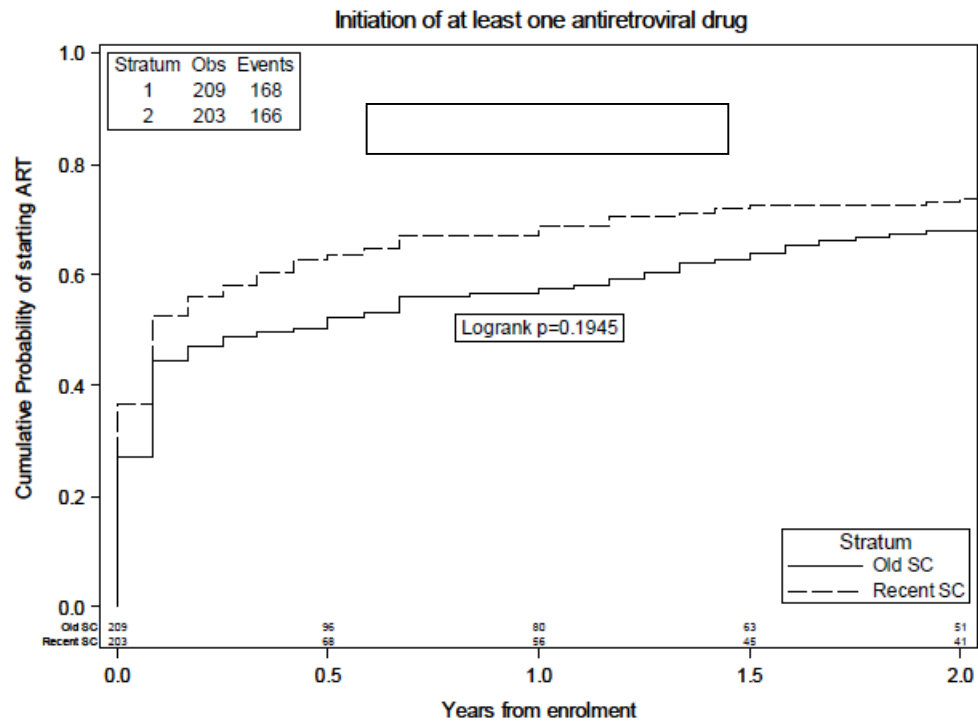
**Table 1. Characteristics of patients by period of seroconversion**

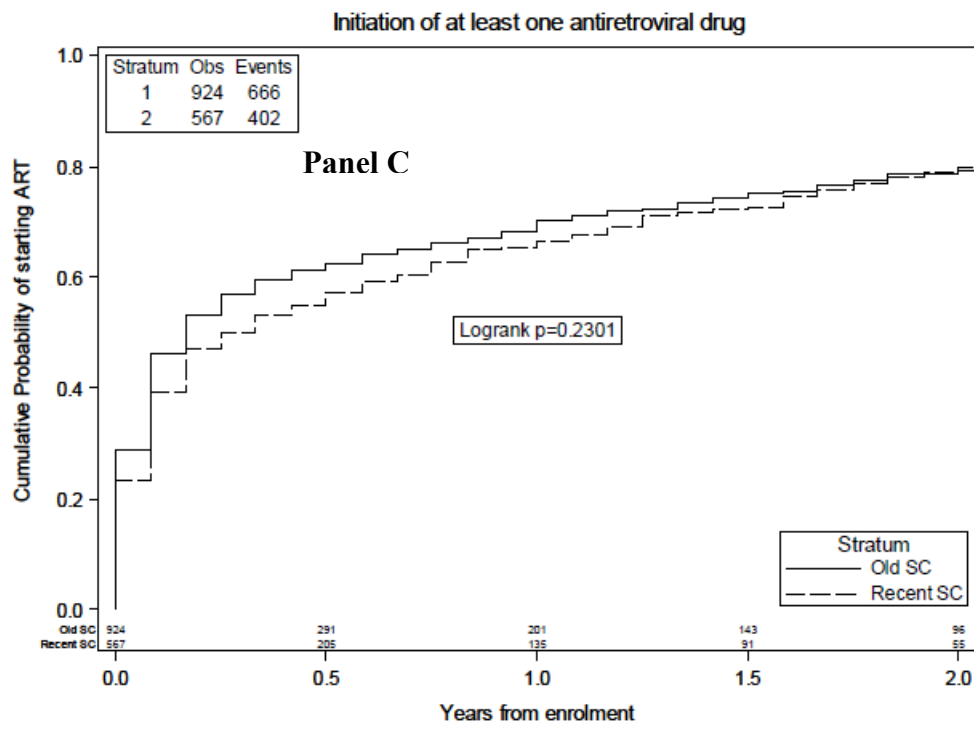
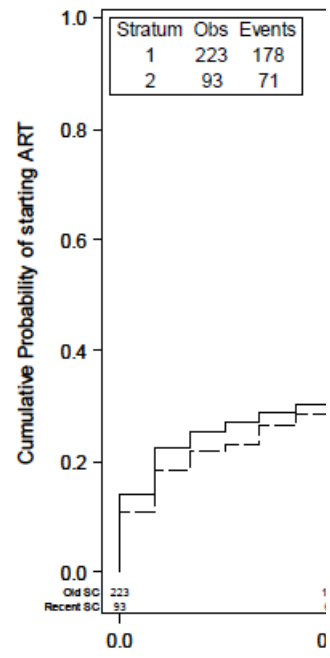
Characteristics	Period of SC				P-value*
	1996-2000	2001-2006	2007-2009	2010-2014	
	N= 578	N= 676	N= 427	N= 927	
<b>Recent seroconversion<sup>8</sup>, n(%)</b>					<.001
Yes	213 (36.9%)	122 (18.0%)	120 (28.1%)	526 (56.7%)	
<b>Mode of HIV Transmission, n(%)</b>					<.001
IDU	128 (22.1%)	62 (9.2%)	23 (5.5%)	30 (3.3%)	
Homosexual contacts	185 (32.0%)	376 (55.7%)	264 (62.6%)	655 (71.1%)	
Heterosexual contacts	239 (41.3%)	207 (30.6%)	119 (27.9%)	180 (19.4%)	
Other/Unknown	26 (4.5%)	30 (4.4%)	16 (3.8%)	56 (6.1%)	
<b>Nationality, n(%)</b>					0.449
Not Italian	40 (6.9%)	77 (11.4%)	65 (15.2%)	153 (16.5%)	
<b>AIDS diagnosis, n(%)</b>					<.001
Yes	33 (5.7%)	28 (4.1%)	19 (4.4%)	13 (1.4%)	
<b>Calendar period of enrolment</b>					<.001
Median (IQR)	2000 (1997, 2001)	2008 (2006, 2011)	2010 (2010, 2011)	2013 (2012, 2014)	
<b>Age, years</b>					
Median (IQR)	34 (30, 41)	37 (31, 43)	36 (29, 42)	33 (27, 40)	
<b>CD4 count, cells/mm<sup>3</sup></b>					
Median (IQR)	480 (294, 670)	466 (301, 655)	448 (295, 643)	479 (331, 629)	
<b>CD4 count nadir, cells/mm<sup>3</sup></b>					
Median (IQR)	473 (294, 664)	460 (301, 630)	448 (293, 617)	481 (337, 643)	
<b>CD8 count, cells/mm<sup>3</sup></b>					
Median (IQR)	865 (657, 1196)	942 (678, 1277)	990 (728, 1428)	930 (658, 1340)	
<b>Viral load<sup>**</sup>, log<sub>10</sub> copies/mL</b>					
Median (IQR)	4.35 (3.73, 5.01)	4.42 (3.78, 5.00)	4.57 (3.98, 5.00)	4.65 (4.11, 5.16)	
<b>Site geographical position, n(%)</b>					<.001
North	284 (49.1%)	357 (52.8%)	256 (60.0%)	609 (65.7%)	
Center	225 (38.9%)	278 (41.1%)	153 (35.8%)	273 (29.4%)	
South	69 (11.9%)	41 (6.1%)	18 (4.2%)	45 (4.9%)	
<b>Time from HIV diagnosis to date of enrollment, months</b>					
Median (IQR)	16 (8, 31)	33 (17, 62)	21 (11, 35)	10 (5, 18)	
<b>Gender, n(%)</b>					<.001
Female	163 (28.2%)	108 (16.0%)	45 (10.5%)	74 (8.0%)	
<b>CD4/CD8 ratio, cells/mm<sup>3</sup></b>					
Median (IQR)	0.52 (0.32, 0.79)	0.48 (0.30, 0.72)	0.45 (0.27, 0.67)	0.48 (0.32, 0.72)	
<b>Started ART over 3 months after enrolment, n(%)</b>					<.001
Yes	272 (47.1%)	255 (37.7%)	182 (42.6%)	458 (49.4%)	
<b>Education, n(%)</b>					<.001
Primary school	49 (8.5%)	18 (2.7%)	14 (3.3%)	18 (1.9%)	
Secondary school	201 (34.8%)	160 (23.7%)	67 (15.7%)	120 (12.9%)	
College	157 (27.2%)	247 (36.5%)	164 (38.4%)	319 (34.4%)	
University	43 (7.4%)	108 (16.0%)	68 (15.9%)	191 (20.6%)	

Other/Unknown	128 (22.1%)	143 (21.2%)	114 (26.7%)	279 (30.1%)	
<b>Employment, n(%)</b>					<.001
Unemployed	104 (18.0%)	80 (11.8%)	41 (9.6%)	97 (10.5%)	
Employed	260 (45.0%)	360 (53.3%)	204 (47.8%)	419 (45.2%)	
Self-employed	107 (18.5%)	101 (14.9%)	77 (18.0%)	137 (14.8%)	
Occasional	25 (4.3%)	21 (3.1%)	11 (2.6%)	22 (2.4%)	
Student	13 (2.2%)	23 (3.4%)	13 (3.0%)	61 (6.6%)	
Retired	13 (2.2%)	21 (3.1%)	8 (1.9%)	8 (0.9%)	
Invalid	2 (0.3%)	0 (0.0%)	0 (0.0%)	1 (0.1%)	
Housewife	43 (7.4%)	13 (1.9%)	6 (1.4%)	4 (0.4%)	
Other/unknown	11 (1.9%)	57 (8.4%)	67 (15.7%)	178 (19.2%)	

**Figure 1. Probability of ART initiation between RHI and NRHI in 1996-2000 (Panel A), 2001-2006 (Panel B), 2007-2009 (panel C), 2010-2014 (panel D) .**

**Panel A**





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