HIV Drug Therapy GLASGOW 2020 | VIRTUAL

CoRIS Cohort of the Spanish HIV Research Network

RIS Red Española de Investigación en Sida

P023

Virological, immunological response and safety of initial antiretroviral treatment in HIV late presenters in the HIV Spanish National Cohort

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BACKGROUND

- Late presentation (LP) represents an important barrier in achieving the UNAIDS 90-90-90 goal for HIV-infection**,** diagnosis and treatment. Conflicting results exist on its impact on treatment response and safety.
- The aim of this study is to evaluate the impact of late presentation on the effectiveness and safety of initial antiretroviral therapy (ART) and to assess whether there are variations in response between the different ART initial regimens among late presenters

MATERIAL AND METHODS

- We analyzed ART-naïve adults from the cohort of the Spanish HIV/AIDS Research Network (CoRIS)
- **CoRIS** is an open multicentre prospective cohort of HIV-positive adults, naive to ART therapy at study entry, seen for the first time between January 2004 and November 2018 in any of the 46 centres from 13 autonomous regions.
- **Inclusion criteria:**
  - ➢ Information on late presentation (CD4+ <350/µL and/or AIDS defining event) at enrolment
  - ➢ Triple ART treatment (2 NRTI plus either 1 NNRTI or 1 boosted PI or 1 INI)
  - ➢ Viral load, CD4+ cell count before starting ART and at week 48 after ART initiation
- **Outcomes** *(48 weeks after ART initiation)*
  - ➢ **Viral suppression (VS):** viral load <50 copies/mL
  - ➢ **Immunological response (IR):**
    - Change in CD4+ T-cell count
    - CD4% normalization at a cut-off of 29%
    - CD4+/CD8+ cell ratio normalization at cut-offs of 0.4 and 1
    - Multiple T-cell marker recovery (MTMR) (CD4+>500/µL, CD4%>29%, CD4+/CD8+ >1)
  - ➢ **ART discontinuation** due to adverse events (AEs)

Statistical analysis: Linear, logistic and Poisson multivariable regression models were applied. All models were adjusted for CD4+ cell count, age, gender and HIV transmission category combined, country of origin, educational level, presence of HCV antibodies, of HBV surface antigen, and viral load before starting ART and year of ART initiation

RESULTS

Table 1. Sociodemographic and clinical characteristics at ART initiation

	Non-late presenters N=4102 (51.3%)	Late presenters N=3900 (48.7%)	Total (N=8002)
Age (year)			
Median (1st, 3rd quartile)	35.7 (29.8, 42.7)	38.5 (31.7, 46.0)	36.9 (30.6, 44.3)
Transmission group (n ,%)			
MSM	2915 (71.1%)	2000 (51.3%)	4915 (61.4%)
IDU	166 (4.0%)	329 (8.4%)	495 (6.2%)
Heterosexual women	472 (11.5%)	628 (16.1%)	1100 (13.7%)
Heterosexual men	459 (11.2%)	778 (19.9%)	1237 (15.5%)
Other/unknown	90 (2.2%)	165 (4.2%)	255 (3.2%)
Educational level (n ,%)			
Primary education or less	383 (9.3%)	653 (16.7%)	1036 (12.9%)
Secondary education	1915 (46.7%)	1769 (45.4%)	3684 (46.0%)
University	1234 (30.1%)	814 (20.9%)	2048 (25.6%)
Other/unknown	570 (13.9%)	664 (17.0%)	1234 (15.4%)
Country of origin (n (%))			
Europe	3245 (79.1%)	2809 (72.0%)	6054 (75.7%)
Sub-Saharan Africa	104 (2.5%)	206 (5.3%)	310 (3.9%)
Latin America	683 (16.7%)	798 (20.5%)	1481 (18.5%)
Other/unknown	70 (1.7%)	87 (2.2%)	157 (2.0%)
Aids diagnosis			
	46 (1.1%)	972 (24.9%)	1018 (12.7%)
CD4 count, cells/µL			
Median (1st; 3rd quartile)	440.0(348.0,575.8)	186.0(76.0,270.0)	308.(180.0,452.0)
CD4/CD8+			
<0.4	1251 (41.7%)	2206 (81.9%)	3457 (60.7%)
0.4-1	1567 (52.2%)	453 (16.8%)	2020 (35.5%)
≥1	185 (6.2%)	34 (1.3%)	219 (3.8%)
Viral load (n (%)), copies/ml			
<10,000	787 (19.2%)	425 (10.9%)	1212 (15.1%)
10,000-100,000	2051 (50.0%)	1387 (35.6%)	3438 (43.0%)
≥100,000	1223 (29.8%)	1985 (50.9%)	3208 (40.1%)
Unknown	41 (1.0%)	103 (2.6%)	144 (1.8%)
Year of starting ART			
2004-2009	546 (13.3%)	1418 (36.4%)	1964 (24.5%)
2010-2014	1380 (33.6%)	1158 (29.7%)	2538 (31.7%)
2014-2018	2176 (53.0%)	1324 (33.9%)	3500 (43.7%)
Initial ART regimen			
2NRTI+1INI	1198 (29.2%)	792 (20.3%)	1990 (24.9%)
2NRTI+1NNRTI	2077 (50.6%)	1786 (45.8%)	3863 (48.3%)
2NRTI+1PI	827 (20.2%)	1322 (33.9%)	2149 (26.9%)

**MSM, male-male sexual contact; IDU, injection drug use; ART, antiretroviral therapy (ART), NRTI, nucleoside reverse transcriptase inhibitor; INI, integrase inhibitor, NNRTI, non-nucleoside reverse transcriptase inhibitor; PI, protease inhibitor*

Figure 1. Impact of late presentation on viral suppression and on change in CD4+ T cell count at 48 weeks from ART initiation

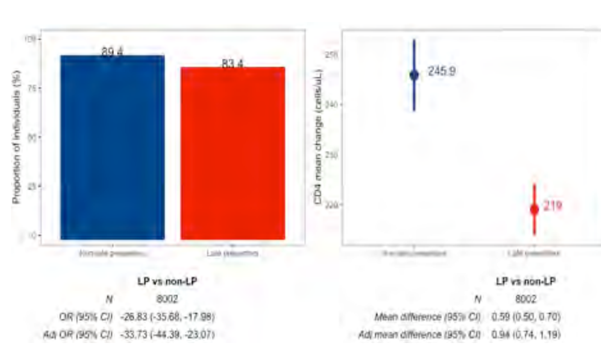

Figure 2. Impact of late presentation on CD4% and CD4+/CD8+ cell ratio normalization, and on achievement of MTMR at 48 weeks from ART initiation

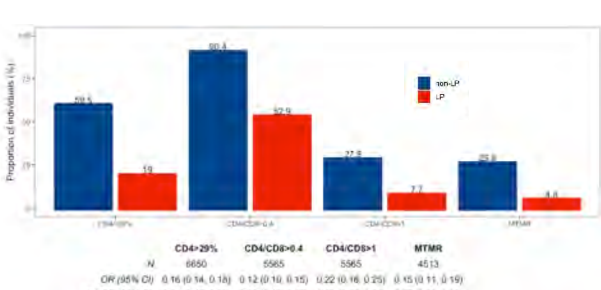

Figure 3. Impact of initial regimen on viral suppression and on change in CD4+ T cell count at 48 weeks from ART initiation among late presenters

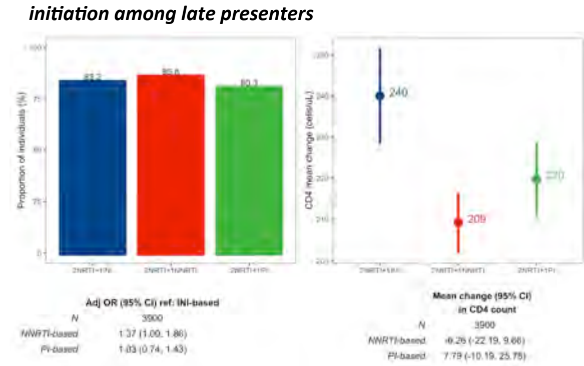

Figure 4. Impact of initial regimen on CD4% and CD4+/CD8+ cell ration normalization, and on achievement of MTMR at 48 weeks from ART initiation among late presenters

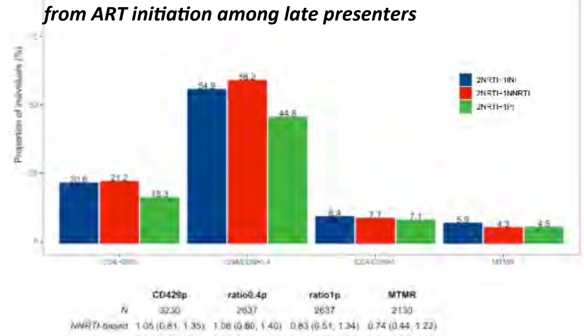

Table 2. Impact of LP on treatment discontinuations due to AE during the first 48 weeks after ART initiation

	Non-late presenters N=4102	Late presenters N= 3900	p-value
Treatment discontinuations due to AE [n (%)]	393 (9.6%)	387 (9.9%)	0.606 [a]
Type of AE:			0.165 [a]
Osteoarticular	10 (2.5%)	9 (2.3%)	
Gastrointestinal	33 (8.4%)	41 (10.6%)	
Hepatic	12 (3.1%)	11 (2.8%)	
Neuropsychiatric	64 (16.3%)	36 (9.3%)	
Renal	25 (6.4%)	31 (8.0%)	
Cutaneous	44 (11.2%)	42 (10.9%)	
Other	30 (7.6%)	26 (6.7%)	
Unknown	175 (44.5%)	191 (49.4%)	
Discontinuation rate due to AE, per 100 py (95% CI)	12.0 (10.9, 13.3)	13.1 (11.8, 14.4)	
Unadjusted Rate Ratio (95% CI) [b]	1.00	1.09 (0.94, 1.25)	0.246
Adjusted Rate Ratio (95% CI) [b,c]	1.00	0.91 (0.75, 1.09)	0.305

Table 3. Impact of the initial regimen on treatment discontinuation due to AE during the first 48 weeks after ART initiation in late presenters

	2NRTI+1INI	2NRTI+1NNRTI	2NRTI+1PI	p-value
Treatment discontinuation due to AE [n (%)]	44 (5.6%)	192 (10.8%)	151 (11.4%)	<0.001[a]
Type of AE:				<0.001[a]
Osteoarticular	4 (9.1%)	3 (1.6%)	2 (1.3%)	
Gastrointestinal	2 (4.5%)	6 (3.1%)	33 (21.9%)	
Hepatic	2 (4.5%)	3 (1.6%)	6 (4.0%)	
Neuropsychiatric	8 (18.2%)	25 (13.0%)	3 (2.0%)	
Renal	15 (34.1%)	4 (2.1%)	12 (7.9%)	
Cutaneous	3 (6.8%)	27 (14.1%)	12 (7.9%)	
Other	1 (2.3%)	9 (4.7%)	16 (10.6%)	
Unknown	9 (20.5%)	115 (59.9%)	67 (44.4%)	
Discontinuation rate due to AE, per 100 py (95% CI)	7.4 (5.4, 10.0)	13.8 (11.9, 15.9)	15.5 (13.1, 18.1)	
Unadjusted Rate Ratio (95% CI) [b]	1.00	1.86 (1.34, 2.59)	2.09 (1.49, 2.93)	<0.001
Adjusted Rate Ratio (95% CI) [b,c]	1.00	1.62 (1.12, 2.35)	1.78 (1.22, 2.60)	0.011

**ART, antiretroviral therapy; NRTI,* nucleoside reverse transcriptase inhibitor; INI, integrase inhibitor, NNRTI, non-nucleoside reverse transcriptase inhibitor; PI, *protease inhibitor , AE advers events*

CONCLUSIONS

- **Late presenters had similar viral response but worse inmunological recovery than patients presenting at earlier stages.**
- **Late presenters has similar ART discontinuation rate due to AEs than Non-late presenters.**
- **In late presenters initiating ART with an INI-based regimen showed similar viral response and inmunological response but better safety than PI- and NNRTI-based regimens.**

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Participating centres: [illegible]