Non-Adherence to Antiretroviral Therapy Associated Factors:
preliminary results from a Portuguese cohort of HIV-1 infected adults

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Background

Adherence to combination antiretroviral therapy (cART) is an important determinant of the HIV/AIDS infection control. In fact, high levels of adherence are required to achieve the best response to treatment, preventing drug resistances, disease progression and death [1]. Moreover, knowledge on this behaviour is needed to design interventions that promote adherence [2].

Objectives

This study aims to estimate non-adherence prevalence and associated patient-related factors, in a Portuguese cohort of HIV-1 patients prescribed to cART.

Methods

We conducted a cross-sectional study from a systematic sample of HIV-1 infected adults prescribed to cART and followed at the Infectious Disease Outpatient Clinic (Hospital de Santa Maria - HSM, Lisbon).
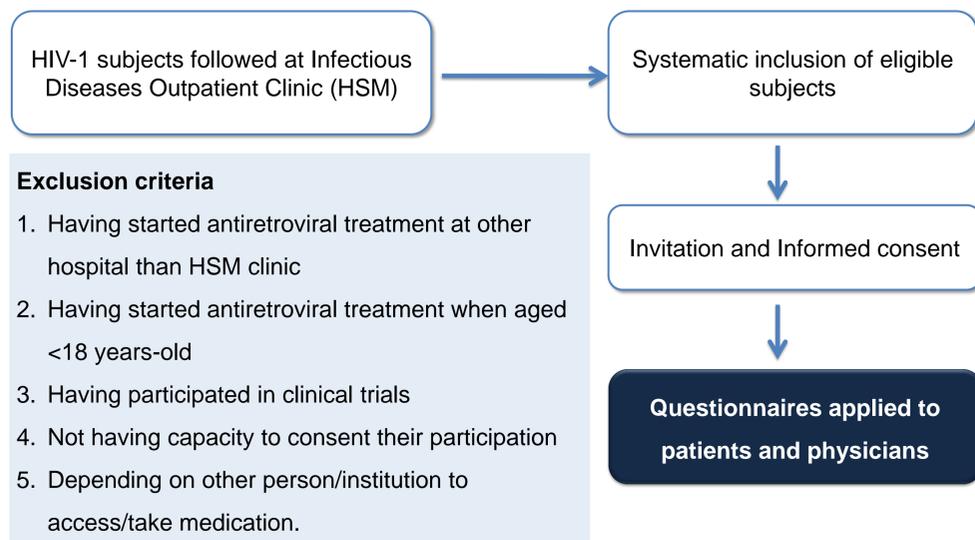
HIV-1 subjects followed at Infectious Diseases Outpatient Clinic (HSM) → Systematic inclusion of eligible subjects

Exclusion criteria

1. Having started antiretroviral treatment at other hospital than HSM clinic
2. Having started antiretroviral treatment when aged <18 years-old
3. Having participated in clinical trials
4. Not having capacity to consent their participation
5. Depending on other person/institution to access/take medication.

Invitation and Informed consent

Questionnaires applied to patients and physicians

Figure 1. Sampling and eligibility evaluation

Adherence was assessed through the Adults AIDS Clinical Trials Group (AACTG) Adherence questionnaire. Subjects were classified as non-adherents when presenting moderate or poor adherence (**Table 1**).

Table 1. Adherence definition according to AACTG questionnaire

Variables	High adherence	Moderate adherence	Poor adherence
Last 4 days - skipping	All days	All days	Missed a day
Last 4 days - schedule	Always	Frequently or less	——————
Last weekend	Yes	No	——————
Last 30 days	Always	Frequently or occasionally	Rarely or never

Related variables included the Illness Perception Questionnaire (IPQ), the Satisfaction with Social Support Scale (ESSS), and the Anxiety Depression and Stress Scale (EADS), among other variables. Logistic regression model was used to describe factors independently associated with non-adherence.

References:
1. Ortego C, et al. Adherence to highly active antiretroviral therapy (HAART): a meta-analysis. AIDS Behav 2011; 15(7):1381-96.
2. Adherence to Long-Term Therapies: Evidence For Action. World Health Organization; 2003.

Results

Study sample

From 306 subjects who had a medical appointment during the enrolment period, 203 (66.3%) were eligible. The participants were 47.8±10.0 years-old (mean±sd) 75.6% man, and prescribed to cART for 115±66.3 months.

Non-adherence to cART

From the 195 subjects that completed the AACTG questionnaire, 89 (45.6%) were classified as non-adherent.
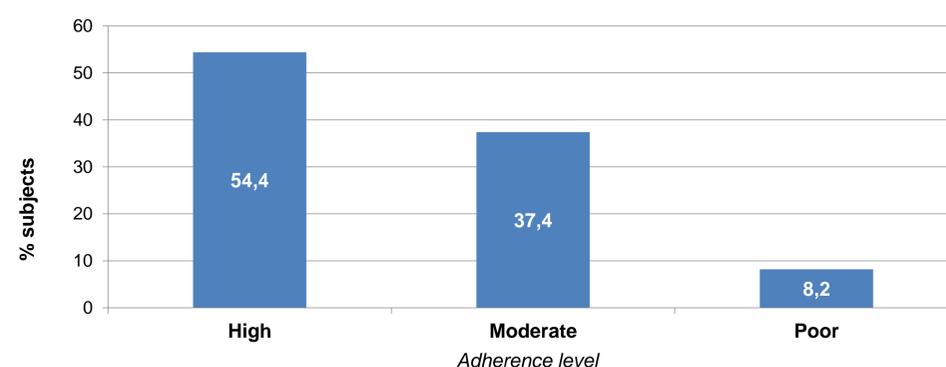

Figure 2. Self-reported adherence, assessed by AACTG questionnaire

Factors associated to non-adherence

Data from 183 patients were included in the regression model (**Table 2**). A stepwise approach was performed for the following variables associated to non-adherence (p<0.15): binge-drinking, anxiety, depression, stress, comorbidities, satisfaction with social support, reported adverse drug reactions, marital status, and the IPQ dimensions *treatment control*, *emotional representations*, *consequences*, *timeline cyclical*.

Table 2. Factors independently associated to non-adherence to cART

Variable		OR	95% CI	p-value
Binge-drinking				
	Yes	4.49	(2.00-10.09)	<0.01
Anxiety				
	Higher values	1.16	(1.06-1.28)	<0.01
IPQ - treatment control				
	Higher values	1.14	(1.02-1.27)	0.02

OR, odds ratio estimation by multiple logistic regression analysis; CI, confidence interval for the OR. **(ROC curve: AUC=0.72, sensitivity=0.60, specificity=0.72)**

Discussion and Conclusions

- **Non-adherence to cART is frequent** and mainly due to moderate levels of patient adherence with the antiretroviral regimen.

- **Patient-related variables were independently associated to non-adherence**, namely *binge-drinking*, *anxiety* and patient perception regarding treatment efficacy (*treatment control*).

- These factors should be addressed on **interventional programs** addressing the promotion of patient adherence to cART.