

## SHORT REPORT

## Impact of injecting drug use on the interruption of antiretroviral therapies

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It has been pointed out that HIV positive patients with a history of drug misuse are less likely to undergo antiretroviral therapy (ART) than those who belong to other categories of transmission.<sup>1,2</sup> Moreover, inadequate use of ART in injecting drug users (IDUs) is controversial because of the risk of parenteral and/or sexual transmission of drug resistant HIV variants.<sup>3</sup>

The aim of this study was to describe the frequency of use and cessation of antiretroviral regimens over a period characterised by the introduction of highly active antiretroviral therapy (HAART) in Spain.

## METHODS

## Patients

Cross sectional study in HIV positive intravenous heroin misusers consecutively referred to detoxification in a tertiary hospital in metropolitan Barcelona between April 1997 and March 2000. Questionnaires on the characteristics of injecting drug use and history of ART use were administered at entry. Blood samples for HIV (EIA and WB), CD4 cell count, and HIV viral load were collected during admission.

## Assessment of antiretroviral medications

All HIV seropositive people reporting current or past ART use were interviewed by a trained physician and the structured questionnaire included dates of first and successive therapeutic regimens, duration and reasons for discontinuing or abandoning ART (that is, personal decision, side effects, drug failure). The prescribed regimens and dates were confirmed through the hospital pharmacy registry and antecedents of opportunistic infections or malignancies through medical records. We classified use of ART into three categories: none, dual nucleosides, and HAART. Data analysis was carried out using Fisher's exact test or  $\chi^2$  test.

## RESULTS

Eighty six HIV(+) IDUs (76 men, 10 women) were admitted. Age at entry 32 years (mean); duration of injecting drug use 12.5 years (mean), the self reported duration of HIV infection was 89 months and HIV viral load was 11 000 copies/ml

**Abbreviations:** ART, antiretroviral therapy; HAART, highly active antiretroviral therapy; IDU, injecting drug user

**Table 1** Measure of association (OR) for abandoning antiretroviral therapy (ART) in HIV positive) injection drug users (current compared with past ART users)

	ART interruption n/N (%)	OR	95% CI	p Value
Sex				
Male	22/47 (47)	1	–	
Female	7/8 (87.5)	7.9	0.9 to 69.8	0.05
Age at admission (y)				
≤32	14/28 (50)	1	–	
>32	15/27 (56)	1.3	0.4 to 3.6	0.8
Duration of injecting drug use (y)				
≤12	13/26 (50)	1	–	
>12	15/28 (54)	1.1	0.4 to 3.4	0.9
Antecedent of incarceration				
No	5/14 (36)	1	–	
Yes	20/37 (54)	2.1	0.6 to 7.5	0.4
Duration of HIV infection				
≤8 years	15/30 (50)	1	–	
>8 years	14/25 (56)	1.3	0.4 to 3.7	0.8
HIV viral load (copies/ml)				
≤400	2/10 (20)	1	–	
401–5000	2/8 (25)	1.3	0.1 to 12.4	0.9
5001–55000	13/21 (62)	6.5	1.1 to 38.6	0.05
>55000	8/9 (89)	32	2.4 to 428	0.005
CD4+cell count (cells/mm <sup>3</sup> )				
>500	5/14 (36)	1	–	
201–500	10/17 (59)	2.6	0.6 to 11	0.3
≤200	12/20 (60)	2.7	0.7 to 11	0.3
AIDS diagnosis before admission				
Yes	6/12 (50)	1	–	
No	23/43 (53.5)	1.1	0.3 to 4.1	0.9

(median) (IQR: 2650–47 000 copies/ml). The mean for CD4 cells at study entry was 422 cel/mm<sup>3</sup>; 16% (14 of 86) of patients had been diagnosed as having AIDS before admission (in 12 of 14 AIDS cases the defining illness was tuberculosis). Overall, the lifetime prevalence of ART use was 64% (55 of 86); 30% of them (26 of 86) were currently taking ART, and 34% (29 of 86) had abandoned ART before admission (past ART use). Not surprisingly, there was a significant trend towards lower HIV viral load in current compared with past ART users (3.4 v 4.4 log<sub>10</sub>; p<0.0001) and 35% (8 of 23) among current ART users had HIV viral load ≤400 copies/ml.

Table 1 shows the odds (ORs with 95% confidence intervals) for abandoning ART. Abandonment of ART did not appear to be associated with age, history of incarceration, duration of HIV infection, duration of intravenous drug use, antecedent of AIDS and CD4 cell count. However, cessation of ART was significantly higher in female IDUs (87.5%) than in male IDUs (47%) and women were 7.9 times more likely to abandon ART than men (p = 0.05) (95%CI 0.9 to 69.8). HIV positive people with HIV viral load >55 000 copies/ml were 32 times more likely to have interrupted ART compared with those who had HIV viral load ≤400 copies/ml (OR 32; 95%CI 2.4 to 428; p = 0.005).

## COMMENT

Despite the small sample size of this cross sectional study and the lack of variables related to socioeconomic status, female IDUs are at increased risk of abandoning ART and, up to 50% of AIDS patients with concurrent drug injection are not taking ART. Treatment of drug dependence, supervised ART, and appropriate health care facilities<sup>4-6</sup> may help to ensure adherence to medication.

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