

Factors associated with HIV viral suppression in patients with HIV-HCV co-infection in Spain, 2004-2013

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Introduction

Infection with the hepatitis C virus (HCV) is one of the most important co-morbidities in people living with HIV (PLWH) in Spain. According to the "Encuesta hospitalaria de pacientes infectados con VIH (EH)", a population-based surveillance system established in the country, the prevalence of active co-infection with HCV in 2013 was 31.1%, and a decreasing trend in prevalence of co-infection has been noted [1]. Most co-infected patients acquired both viruses by sharing injection material.

Objectives

To analyse factors associated with HIV viral suppression in patients with HIV-HCV co-infection in Spain, using data collected through the EH.

Methods

Epidemiological, behavioural and clinical data were collected, through a one-day cross-sectional survey carried out in public hospitals (the EH), in standard questionnaires filled out by clinical staff. All HIV inpatients and outpatients receiving HIV-related care on the survey day during 2004-2013, and co-infected with HCV were included. HIV-HCV co-infection was defined as having a positive PCR for HCV in the last determination before the survey; and HIV viral suppression as having less than 200 copies/ml also in the last determination. Descriptive, bivariate and multivariate analyses (logistic regression) were performed; the odds ratio and its 95% confidence interval (OR; 95%CI) were used as the measure of association.

Table 1: Characteristics of HIV-HCV co-infected patients, and % of HIV viral suppression by different variables. Encuesta Hospitalaria, Spain, 2004-2013

Variables	Characteristics		VL<200 copies/ml among cases on HAART	
	Nº	%	Nº	%
Sex				
Male	1635	69.6	1077	78.4
Female	601	25.6	405	82.6
Unknown	112	4.8	82	86.3
Age group				
<30 years	45	1.9	24	70.6
30-34 years	159	6.8	87	74.4
35-39 years	407	17.3	237	75.0
40-49 years	1337	57.0	921	80.8
≥ 50 years	369	15.7	273	84.8
Unknown	31	1.3	22	75.9
Place of birth				
Spain	2274	96.9	1511	79.7
Latin America	14	0.6	9	81.8
Central/Eastern Europe	16	0.7	10	76.9
Western Europe	29	1.2	20	83.3
Africa	4	0.2	3	75.0
Other/Unknown	11	0.5	11	100.0
Transmission route				
Heterosexual	256	10.9	183	84.7
MSM	55	2.3	40	83.3
PWID	1947	82.9	1282	79.2
Haemophilic/transfusion recipient	23	1.0	19	86.4
Other/Unknown	67	2.9	40	75.5
Residence				
Living alone	285	12.1	180	75.0
Living with family/friends	1688	71.9	1158	81.7
Closed institutions	160	6.8	112	82.4
Prisons	99	4.2	49	64.5
Homeless	41	1.8	8	38.1
Other	36	1.5	29	85.3
Unknown	39	1.7	28	84.9
Employment status				
Employed	843	35.9	616	85.7
Unemployed	591	25.2	329	72.3
Retired/disabled	737	31.4	511	79.8
Housewife/student	62	2.6	45	86.5
Other	58	2.5	29	64.4
Unknown	57	2.4	34	72.3
Drug injection (30 days before the survey)				
Yes	172	7.3	68	61.3
HIV Stage				
Asymptomatic	735	31.3	495	85.2
Symptomatic non-AIDS	554	23.6	388	81.9
AIDS	990	42.2	635	74.9
Unknown	69	2.9	46	83.6
Years from HIV diagnosis				
≤ 1 year	60	2.6	17	47.2
2-5 years	161	6.9	103	84.4
6-10 years	401	17.1	258	78.0
11-15 years	649	27.6	421	78.4
>15 years	1027	43.7	733	82.4
Unknown	50	2.1	32	76.2
HCV treatment				
Yes	653	27.8	502	89.0
Year of survey				
2004	295	12.6	156	70.9
2006	341	14.5	182	70.8
2007	278	11.8	181	81.2
2009	245	10.4	159	77.2
2009	264	11.2	192	85.0
2010	248	10.6	175	80.7
2011	243	10.4	198	90.0
2012	221	9.4	156	81.7
2013	213	9.1	165	83.3
TOTAL	2348	100	1564	79.9

MSM: Men who have sex with men; PWID: People who inject drugs

Results

During 2004-2013, 2,348 patients with HIV-HCV co-infection were included in the study. The majority was male (69.6%), Spanish (96.9%), in the age group 40-49 years (57.0%), was/had been drug injector (82.9%) and a total of 2,035 cases received highly active antiretroviral treatment (HAART) for HIV (86.7%). Information on viral load was available for 1,958 HIV-HCV cases on HAART (96,2%). Of these, 1,564 (79.9%) had less than 200 copies/ml in the last determination. HIV viral suppression prevalence increased with age; was higher in employed patients and those living with family/friends; in people with an asymptomatic HIV status, and among patients on HCV treatment. HIV viral suppression prevalence was lower in patients who were current drug injectors and those recently diagnosed (Table 1).

The multivariate analysis showed that, among co-infected patients on HAART, HIV viral suppression was less likely among homeless people (OR:0.2; 95%CI:0.1-0.5), those living alone (OR:0.6; 95%CI:0.4-0.9), the unemployed (OR:0.5; 95%CI:0.4-0.7), and those who injected illegal drugs in the last month (OR:0.5; 95%CI:0.3-0.8). On the contrary, HIV viral suppression was more likely in participants receiving HCV treatment (OR:1.9; 95%CI:1.4-2.6) and those included in the 2009-2013 rounds (Table 2).

Table 2: Factors associated with HIV viral suppression in patients with HIV-HCV co-infection on HAART. Encuesta Hospitalaria, Spain, 2004-2013

Variables	ORa	95%CI
Sex (Female)		
Male	0.8	0.6-1.1
Age group (30-34 years)		
<30 years	0.6	0.2-1.7
35-39 years	0.9	0.5-1.6
40-49 years	1.0	0.6-1.7
≥ 50 years	1.2	0.7-2.2
Place of birth (Spain)		
Latin America	0.7	0.1-3.8
Central/Eastern Europe	2.7	0.5-15.2
Western Europe	1.1	0.3-3.7
Africa	1.9	0.2-24.4
Transmission route (Heterosexual)		
MSM	1.0	0.4-2.6
PWID	0.8	0.5-1.3
Haemophilic/transfusion recipient	1.1	0.3-4.5
Other	0.8	0.1-12.6
Residence (Living with family)		
Living alone	0.6	0.4-0.9
Closed institutions	1.3	0.8-2.1
Prisons	0.7	0.3-1.3
Homeless	0.2	0.1-0.5
Other	0.8	0.3-2.4
Employment status (Employed)		
Unemployed	0.5	0.4-0.7
Retired/disabled	0.7	0.5-0.9
Housewife/student	0.9	0.4-2.2
Drug injection (30 days before the survey) (No)		
Yes	0.5	0.3-0.8
HIV Stage (Asymptomatic)		
Symptomatic non-AIDS	0.9	0.6-1.3
AIDS	0.6	0.4-0.8
Years from HIV diagnosis (> 15 years)		
≤ 1 year	0.2	0.1-0.5
2-5 years	1.5	0.8-2.6
6-10 years	1.1	0.7-1.5
11-15 years	0.9	0.6-1.2
HCV treatment (No)		
Yes	1.9	1.4-2.6
Year of survey (2004)		
2006	1.0	0.7-1.6
2007	1.7	1.0-2.7
2008	1.3	0.8-2.1
2009	2.2	1.3-3.8
2010	2.0	1.2-3.3
2011	3.9	2.1-6.9
2012	1.9	1.1-3.3
2013	2.1	1.2-3.6

*Model adjusted by Autonomous Regions of hospital

MSM: Men who have sex with men; PWID: People who inject drugs

Conclusions

Population-based data show that among patients with HIV-HCV co-infection, HCV treatment has a very positive effect on HIV viral suppression, and that social factors play an important role on the outcome of HAART.