

Prevalence, clinical characteristics and outcomes of severe acute HIV-1 infection

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Background

- Primary HIV infection (PHI) comprises the first 6 months following the virus acquisition and it is classified as acute (<30 days) and recent (<6 months) infection.
- In a variable proportion of patients (40-90%), PHI presents with mild non-specific symptoms.
- Severe cases of PHI have been described and some of them appear in form of neurological involvement, AIDS defining events (ADEs) or other life-threatening entities.
- These severe forms of PHI have not been fully described in cohort studies previously. A severity score index has been proposed.

Objectives

- To describe the prevalence of severe PHI in the Acute/Recent HIV Infection cohort of Hospital Clinic of Barcelona.
- To compare the clinical, epidemiological and viro-immunological characteristics of the severe and non-severe PHI
- To evaluate 12-months response after the onset of early antiretroviral therapy (ART).

Methods

- Retrospective cohort study performed between 1997 and 2015 in a tertiary-care University hospital in Barcelona (Spain) on 224 patients with PHI.
- Based on previous publications **severe PHI was defined as one of the following:**
 - Clinical criteria (B/C ADEs, neurological involvement)
 - Laboratory criteria (acute hepatitis, thrombocytopenia)
 - Immunological criteria (CD4<350 cells/mm³)

Results

Thirty-three percent (95% CI [26.84%-39.16%]) of patients presented a severe PHI.

Severe PHI condition	74 (33)*
Clinical severity #	30 (13.4)
• Hepatitis † ‡	6 (2.9)
• Bacterial pneumonia	3 (1.3)
• Oral candidiasis	14 (6.3)
• Esophageal candidiasis	7 (3.1)
• Esophageal herpes ◇	2 (0.9)
• Fever > 1 month	1 (0.4)
• Diarrhoea > 1 month	1 (0.4)
• Meningoencephalitis ¶	11 (4.9)
CD4 at diagnosis below 350 cells/mm ³	56 (25)
Platelets at diagnosis below 100x10 ⁹ /L	5 (2.4)

* N (%) # Any of the below criteria. † Active HBV/HCV infection excluded. ◇ In 2 cases, together with esophageal candidiasis. ¶ In 2 cases, together with oral candidiasis.

Epidemiological characteristics

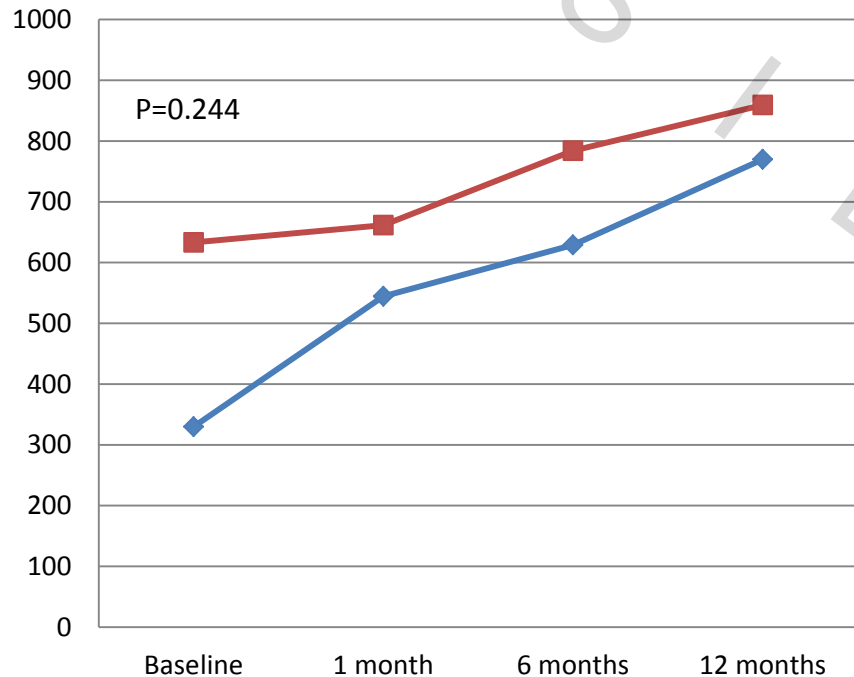
	SEVERE (N=74)	NON-SEVERE (N=150)	P		SEVERE (N=74)	NON-SEVERE (N=150)	P
Fiebig at diagnosis*				Symptomatic PHI #	73 (98.6)	117 (78)	< 0.001
• II	17 (23)	21 (14)	0.279	• Fever	71 (95.9)	109 (72.7)	< 0.001
• III	10 (13.5)	18 (12)		• Fever ≥ 7 days	55 (77.5)	55 (41.4)	< 0.001
• IV	15 (20.3)	43 (28.7)		• Rash	36 (48.6)	44 (29.3)	0.005
• V	32 (43.2)	68 (45.3)		• Headache	34 (45.9)	42 (28)	0.008
Gender (male)*	71 (95.9)	139 (92.7)	0.340	• Night sweats	18 (24.3)	31 (20.7)	0.533
Age at diagnosis (years) #	36 ±9	34 ±8	0.142	• Pharyngitis	34 (45.9)	49 (32.7)	0.053
Origin (Spanish)*	43 (58.1)	98 (65.8)	0.264	• Oral/genital ulcers	16 (21.6)	22 (14.7)	0.192
HIV risk factor (MSM)*	62 (84.9)	128 (85.9)	0.616	• Lymphadenopathies	38 (51.4)	60 (40)	0.107
Comorbidities&	14 (18.9)	16 (10.7)	0.088	Hospitalization required #	35 (47.3)	22 (14.7)	< 0.001
				Concomitant STD #	6 (8.1)	30 (20)	0.023
				ART beginning < 1 month	31 (41.9)	40 (26.7)	0.021
				Viral load (log ₁₀ copies/mL)*	5.71 ± 0.93	4.81 ± 1.18	< 0.001
				CD4 at diagnosis	322,69 ± 142,16	622,13 ± 285,63	-
				(cells/mm3)*			
				Tropism #			
				• R5	26 (83.9)	46 (78.0)	0.172
				• X4	5 (16.1)	7 (11.9)	
				• Dual	0 (0)	6 (10.2)	

* N (%); # Mean (Standard deviation);& Charlson index>3; MSM: Men having sex with men.

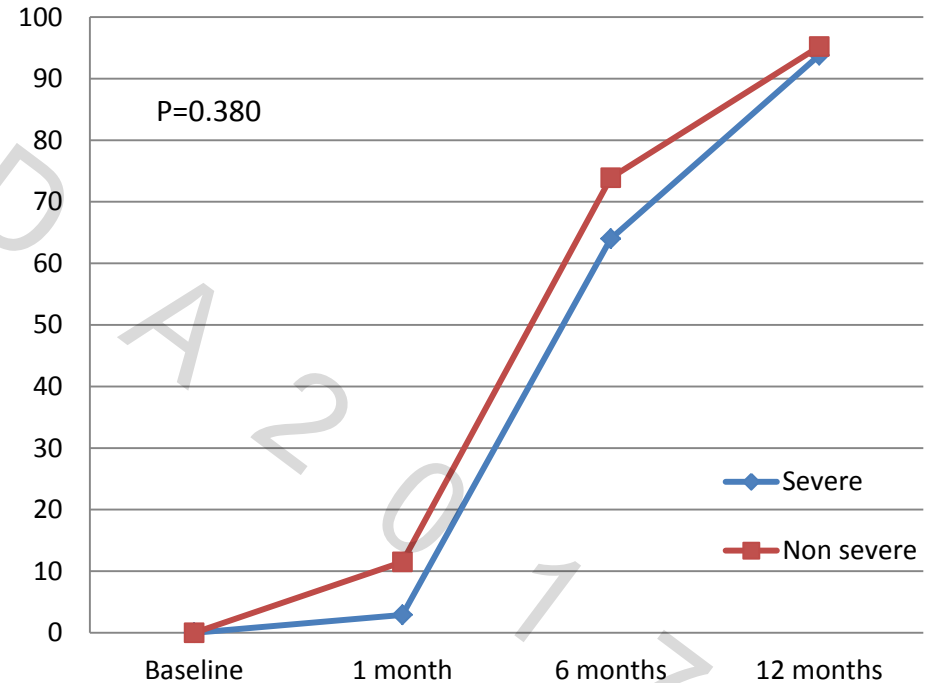
- Patients with severe PHI presented more symptoms, and required more hospital admissions.
- Patients with a non-severe PHI presented a higher proportion of STD, probably due to an earlier consultation.
- The severe PHI group had a significant higher viral load.
- ART was started earlier in patients with severe PHI.

Virological and immunological outcomes

CD4 cell count (cells/mm³) evolution



Percentage of patients with suppressed viremia



No significant differences were observed between groups in terms of viral suppression or CD4 recovery in those patients starting ART in the first 3 months from the diagnosis.

Conclusions

- Up to one third of patients of the cohort presented severe PHI.
- Severe PHI was associated with more hospitalization rates and higher plasma HIV RNA viral load.
- However, severe forms were not associated with a worst clinical, immunological or virological outcome when ART was started promptly.