

Differential distribution of hepatitis C virus genotypes in different patient's cohorts

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BACKGROUND

Genotyping of Hepatitis C virus (HCV) continues to be epidemiologically relevant. In Argentina sub genotype (sGt) 1b is the most prevalent followed by 1a. The circulation of sGt 2c, 3a and 4a was also reported although at a lower frequency.

The aim of the present study was to analyze and compare the HCV Gt distribution, in particular the relation sGt 1b/1a, studying two cohorts of patients.

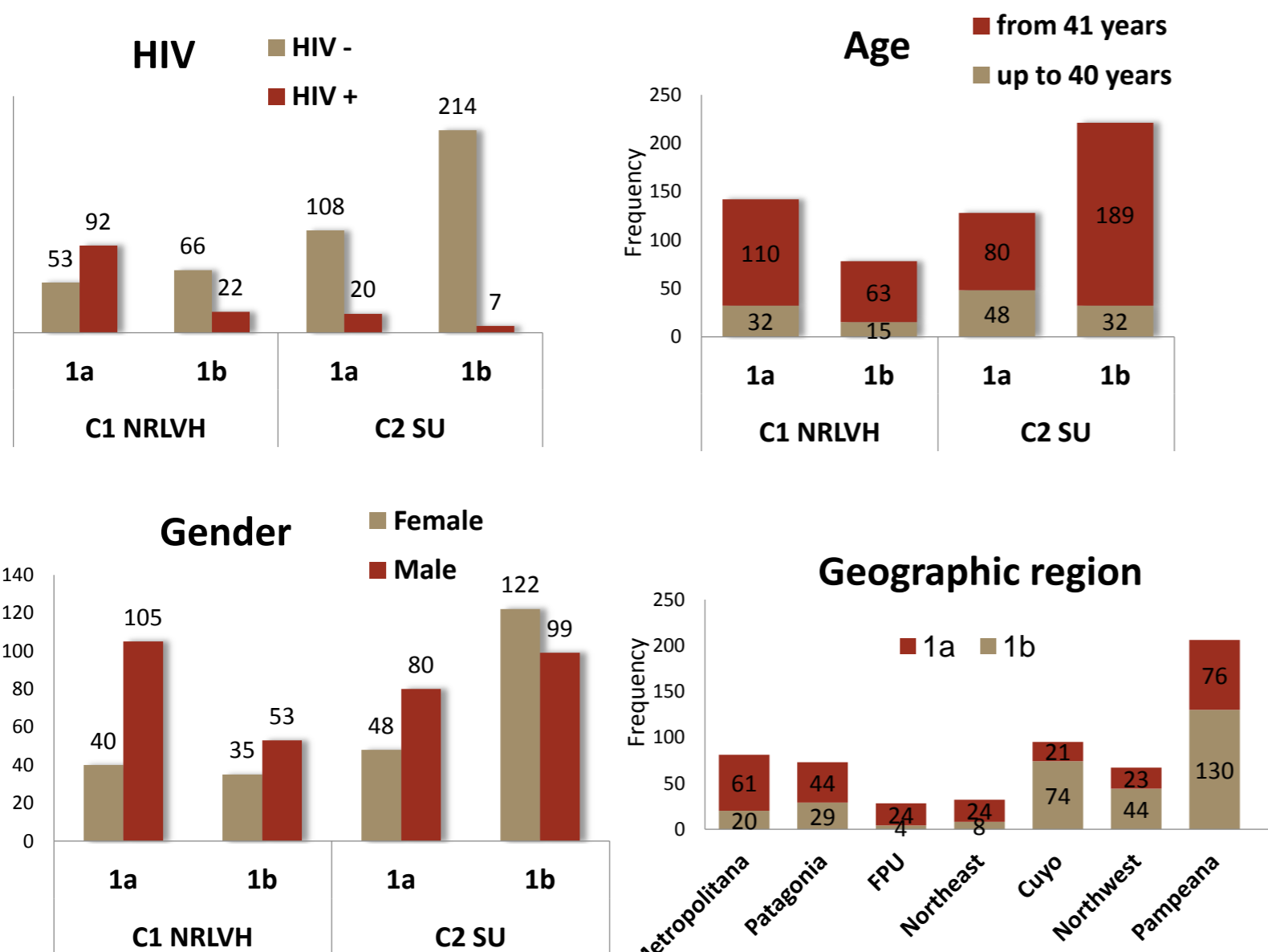
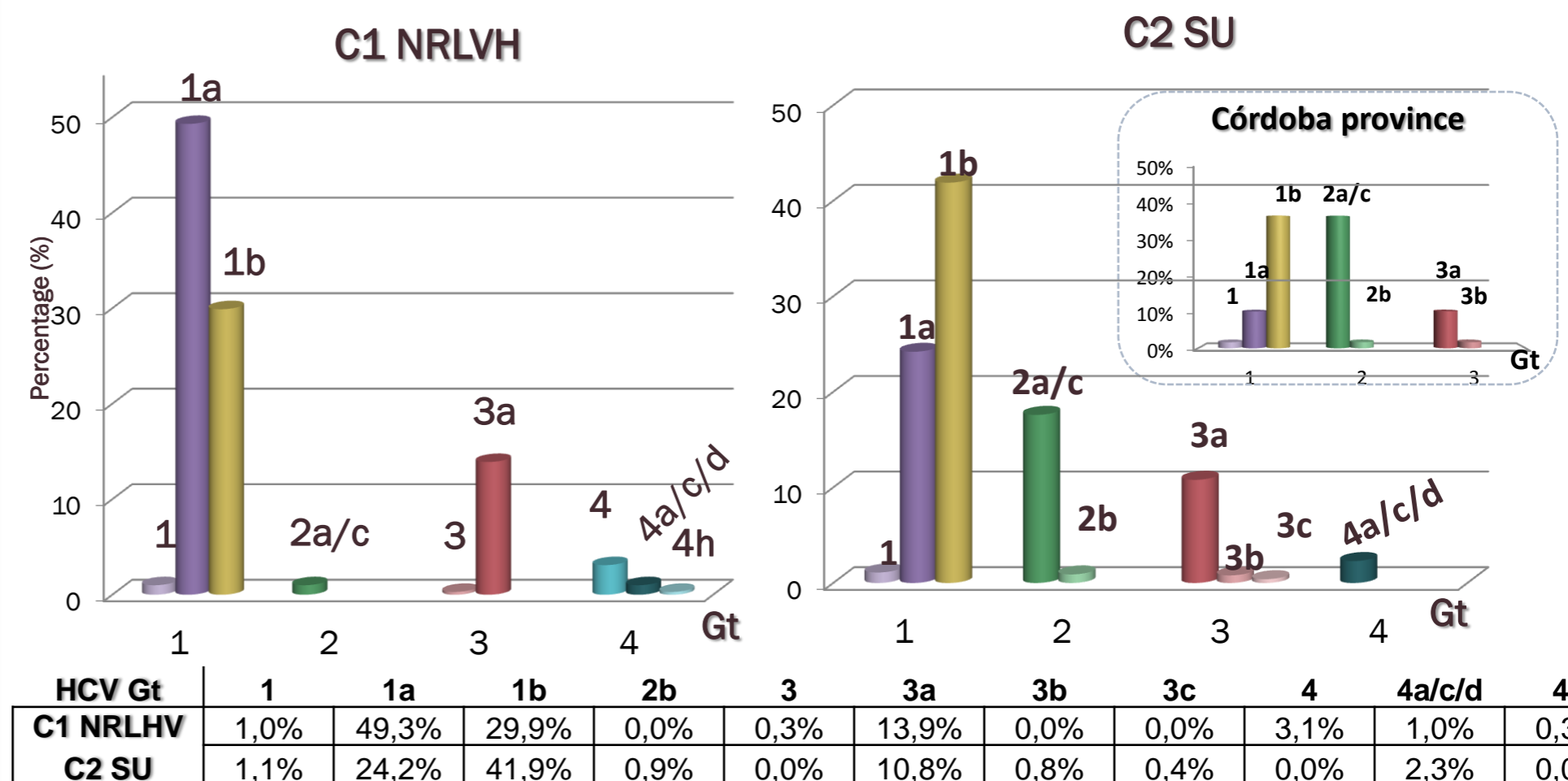
METHODS

Cohort 1 (C1): 294 patients studied between June 2011-August 2016 at the National Reference Laboratory for viral Hepatitis (NRLVH). Mean age 46 years, 68% male, 49% HIV co-infected. The majority of patients (37%) came from public hospitals from the Metropolitana region (Buenos Aires City and surroundings), 12% of patients were prisoners at Federal Prison Units (FPU).

Cohort 2 (C2): 528 patients studied between January 2007-July 2015 at the Sentinel Unit Network (SU) -27 public Hospitals located in 18 out of the 24 provinces of the country- which are implicated in intensive surveillance for viral hepatitis. Mean age 49 years, 51% male, 8% HIV co-infected. The majority of patients (55%) came from Pampeana region (Center): Córdoba, Mar del Plata, Rosario and Santa Fe cities. The distribution of Gt was analyzed according to the following variables: age (up to 40 years, from 41 years), gender, HIV co-infection, Cohort and origin categorized by geographic region and FPU. Statistical analysis was performed using univariable and multivariable logistic regression; $p < 0.05$ was considered statistically significant. In C1 the genotypes were determined by LIPA; in C2 by LIPA (60%) and RFLP (37%) (no data 3%).

RESULTS

VARIABLES	COHORT	
	C1 NRLVH 294 patients	C2 SU 528 patients
HIV Co-infection	No	52,0%
	Yes	48,0%
Gender	Female	31,3%
	Male	68,7%
Age	no data	6,8%
	up to 40 years	18,7%
	from 41 years	74,5%
Geographic Region	Cuyo	15,0%
	Metropolitana	36,7%
	Northeast	6,5%
	Northwest	,3%
	Pampeana	10,2%
	Patagonia	19,0%
	FPU	12,2%



VARIABLES	HCV Genotype				UNIVARIATE ANALYSIS			MULTIVARIATE ANALYSIS					
	1a		1b		OR (1b/1a)	C. I. 95%		OR (1b/1a)	C. I. 95%		Sig.		
	N	%row	N	%row		L.	H.		L.	H.			
HIV Co-infection	No	161	36,5%	280	63,5%	Ref.							
	Yes	112	79,4%	29	20,6%	,149	,095	,234	,000	,312	,180	,543	,000
Gender	Female	88	35,9%	157	64,1%	2,171	1,549	3,044	,000	1,655	1,126	2,434	,010
	Male	185	54,9%	152	45,1%	Ref.				Ref.			
Age	no data	3	23,1%	10	76,9%	5,674	1,486	21,658	,011	5,174	1,201	22,285	,027
	Up to 40 years	80	63,0%	47	37,0%	Ref.				Ref.			
	from 41 years	190	43,0%	252	57,0%	2,258	1,504	3,390	,000	2,912	1,830	4,633	,000
Region	Cuyo	21	22,1%	74	77,9%	21,143	6,600	67,725	,000	11,054	3,098	39,440	,000
	Metropolitana	61	75,3%	20	24,7%	1,967	,609	6,356	,258	2,028	,596	6,897	,258
	Northeast	24	75,0%	8	25,0%	2,000	,531	7,539	,306	1,151	,277	4,781	,846
	Northwest	23	34,3%	44	65,7%	11,478	3,554	37,075	,000	4,934	1,296	18,774	,019
	Pampeana	76	36,9%	130	63,1%	10,263	3,431	30,699	,000	4,945	1,432	17,080	,011
	Patagonia	44	60,3%	29	39,7%	3,955	1,243	12,585	,020	2,225	,642	7,711	,207
	FPU	24	85,7%	4	14,3%	Ref.				Ref.			
Cohort	C1 NRLVH	145	62,2%	88	37,8%	,352	,249	,495	,000	,856	,497	1,475	,576
	C2 SU	128	36,7%	221	63,3%	Ref.				Ref.			

CONCLUSIONS

The different distribution of Gt2 in both cohorts reflects its prevalence previously reported in Córdoba province. The different proportion of sGt 1a and 1b in both cohorts reflects a different prevalence in risk factors, demographic characteristics and in the origin of the populations studied. Differences by region of origin should be studied in greater depth, but could be due, among other causes, to differences in risk factors not analyzed in this study, such as intravenous drug addiction, which is not reported in the referral of samples to the NRLVH.

In the multivariate analysis (OR; CI 95%) the proportion sGt1b/1a evidenced an association with: Gender (1,65; 1,13-2,43); Age (from 41 years: 2,9; 1,83-4,63); HIV (0,31; 0,18-0,54); and Geographic region (reference: FPU): Cuyo (11,05; 3,1-39,44), Northwest (4,93; 1,30-18,77), Pampeana (4,94; 1,43-17,08) and Patagonia (2,22; 0,64-7,71); showing a greater proportion of sGt1a in the regions Metropolitana, Northeast, Patagonia and FPU. The variable Cohort was significant only in the univariate analysis (0,35; 0,25-0,50).

Conflicts of Interest : None

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