

Decline in the Rate of to Antiretroviral Drugs in

***Carmen de Mendoza¹, Jorge del Romero², Carmen
¹Instituto de Salud Carlos III.***

Genotypic Resistance in HIV Seroconvertors Spain

***Rodríguez², Angelica Corral¹, and Vincent Soriano¹
²Centro Sandoval. Madrid. Spain***

BACKGROUND I

Resistance to antiretroviral drugs represents one of the major obstacles for the success of HIV therapy. Viruses carrying drug-resistant mutations can be transmitted and, then, compromise the response to therapy in drug-naïve individuals.

BACKGROUND II

In Spain, surveillance studies conducted over the last 5 years have demonstrated that the rate of genotypic resistance among drug-naive individuals with chronic HIV infection has declined significantly since 1997¹⁻³. However, data from HIV seroconvertors are scarce, although alarming rates of primary resistance have been reported occasionally⁴.

PATIENTS

We have compared the rate of primary mutations associated to drug resistance (IAS update 2001)⁵ in a well-characterized panel of plasma samples collected from individuals with primary acute HIV infection or seroconversion lasting <12 months who were attended over the last 5 years in several clinics in Madrid.

METHODS

An automatic sequencer (ABI 3100) was used to generate RT and protease sequences.

Sequences were aligned, and HIV subtyping was carried out based on this information.

RESULTS I

A total of 57 individuals were examined, being 26 of them recruited during 2000 and 2001. The remaining 31 subjects had acquired HIV infection between 1997 and 1999, and all but one of them have been reported previously⁶.

RESULTS II

Their mean age was 34 years old (range 25 to 45). The route of HIV infection had been through homosexual contacts (69%), heterosexual relationships (23%), needle sharing (6%), and blood transfusion (one subject). Demographics of patients belonging to the two different periods did not differ significantly (see Table 1)

Table 1. Main demographics and rate of genotypic resistance in the study population.

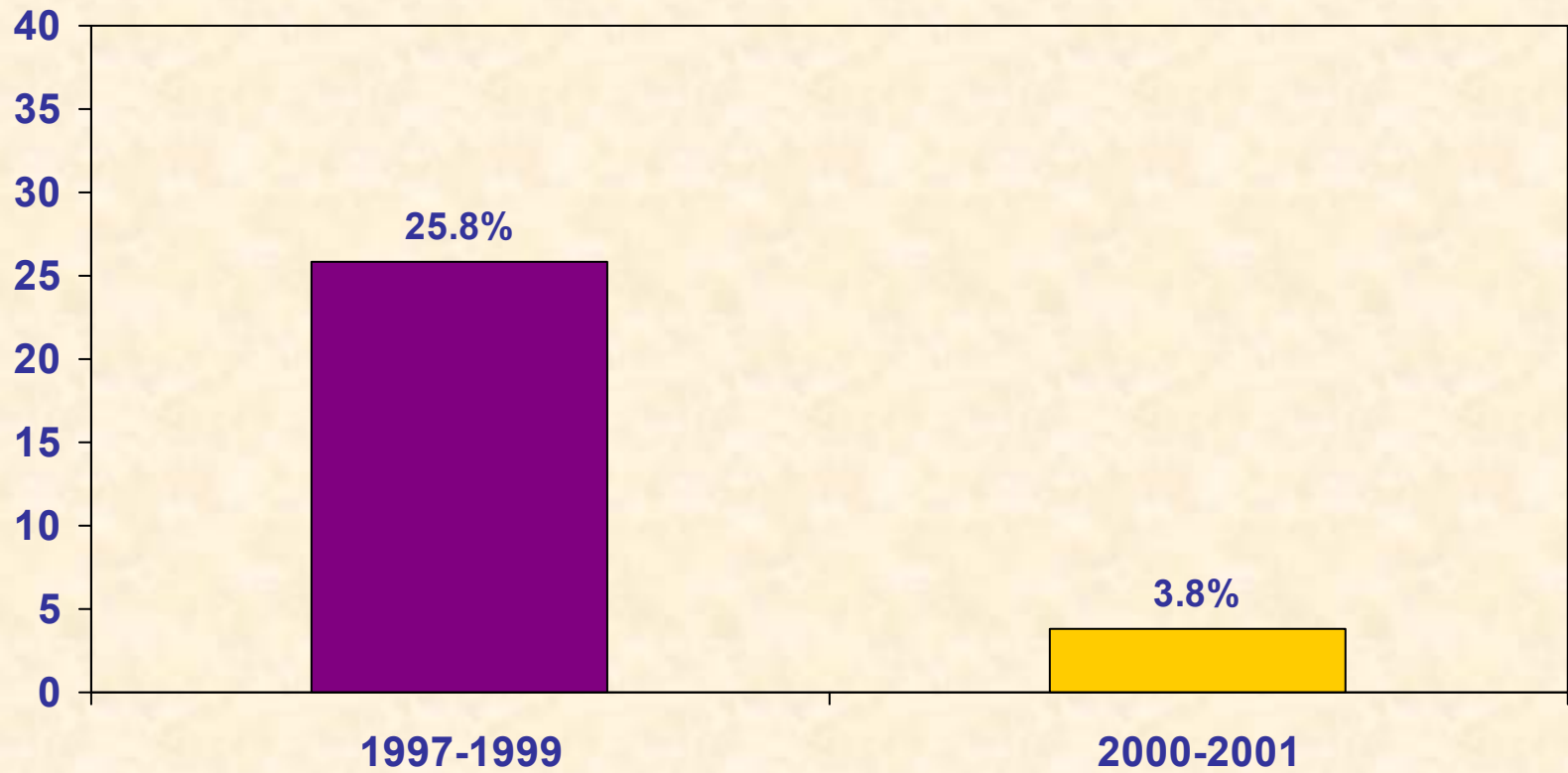
Characteristics	1996-1999	2000-2001
Number	31	26
Male (%)	80	83
Risk factor		
Homosexual (%)	70	67
Heterosexual (%)	20	28
Intravenous drug use (%)	10	0
Others (%)	0	5
Estimated number of months after HIV exposure (mean)	6.6	8
Primary drug resistance mutations (%)		
Reverse transcriptase gene	22.6*	0*
Protease gene	6.6	4.3
Total	25.8*	4.3*

*statistically significant differences among groups (p<0.05).

RESULTS III

The overall prevalence of HIV genotypes associated with reduced drug susceptibility was 25.8% (8/31) in samples collected until 1999. In contrast, it declined to 3.8% (1/26) in subjects having seroconverted thereafter ($p < 0.05$). (See Figure 1)

Fig 1. Prevalence of resistance genotypes in Seroconvertors in two different periods



RESULTS IV

The distribution of resistance genotypes was as follows in the period 1997 to 1999: RT (M41L in 4 subjects; T215Y in 3; M184V in 1; Y181C in 1) and PRO (M46L in 1; V82I in 1; L90M in 1). In contrast, only one subject harboring M46L at the protease was recognized in the period 2000-2001.

RESULTS V

No differences in the rate of genotypic resistance were found comparing subjects with acute HIV infection and those with recent seroconversion. All virus sequences were characterized as belonging to HIV-1 subtype B.

CONCLUSIONS I

The rate of genotypic resistance in newly infected individuals has declined significantly in the last two years in Madrid.

This finding supports that most new infections come from subjects being not exposed to antiretroviral drugs (even not aware of their HIV status) rather than from subjects failing their current antiretroviral treatment.

CONCLUSIONS II

Drug resistance testing in recent seroconverters does not seem to be required before beginning antiretroviral therapy.

However, it should be considered when the source of the infection is known to be a subject failing any antiretroviral therapy.

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