

Four years of surveillance of recent HIV infections in France, 2003-2006

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Background

In most industrialised countries, routine surveillance is based on HIV/AIDS case reporting to monitor new HIV/AIDS diagnoses. This information is essential but not sufficient to assess the dynamics of the epidemic. In France, recent HIV infections (e.g. infection in the last 6 months) are routinely monitored at national level since 2003.

Methods

An immunoassay to identify recent infections (EIA-RI) (less than 6 months) is performed among people newly diagnosed with HIV. EIA-RI is performed on a dried serum spot (DSS) from the stored serum sample obtained for the original HIV diagnosis. The characteristics and properties of this assay have been described previously. Using DSS, the EIA-RI is able to identify recent infections (less than 6 months) among all infected patients (without AIDS) with a sensitivity of 87% and a specificity of 98%. The EIA-RI is less specific for patients at the AIDS stage, and therefore patients known to have AIDS were classified as established infection whatever the result of the EIA-RI.

The surveillance of recent HIV infections is based on volunteer participation by microbiologists and patients and is paired to HIV case reporting system. The patient's consent is obtained by the reporting clinician through the HIV notification form. Results of the test of recent infection are then linked to the epidemiological data in the HIV national data base using the patient's anonymous code. The following variables are collected into the national database: sex, age, country of birth, current nationality, region of residency, mode of transmission, socio-professional category, clinical stage at HIV diagnosis, and reasons for HIV screening.

Multivariate analysis was used to identify factors associated with recent infections and were performed with use of a stepwise logistic models (backward-entry stepping algorithm); the goodness of fit of the final models was assessed by the Hosmer-Lemeshow statistic. We used SAS® (version 08) for all analyses.

Results

From July 2003 to the end of 2006, 2,424 recent infections (among cases newly diagnosed for HIV) were reported. After adjustment for under-reporting and reporting delays, this number was estimated at around 4,000 (the proportion of under-reporting of new HIV diagnoses in France varies from 36 to 40% according to year of diagnoses).

Half of these cases were among men who have sex with men (MSM): 2,025 recent infections over the period, representing 550 to 600 MSM per year. For the year 2006, the ratio of recent infections of MSM is 175 per 100 000 MSM.

The number of recent infections among drug users was very low (54 cases over the whole period). In 2006, the ratio of recent infections of drugs users is 60 per 100 000

drug users. From 2003 to 2006, the adjusted number of recent infections was higher among French heterosexually infected persons (807) than among sub-Saharan Africans living in France (442 cases).

In the multivariate analysis on 10,401 new HIV diagnoses reported from July 2003 to December 2006 (of whom 2,424 have been recently infected), being recently infected was associated with being an MSM (aOR=2.0), of French nationality (aOR=4.2), and tested after an exposure (aOR=1.4). The risk of recent infections decreased with age (aOR for < 30 yrs=2.1, aOR for 30-39 yrs=1.6, aOR for 40-49 yrs=1.2, over 50 yrs: reference category). A high socio-economic status (aOR= 1.2) was also associated with recent infections (see table). The region of residence and the sexe were not associated to recent infections.

FACTORS INDEPENDENTLY ASSOCIATED WITH RECENT INFECTIONS AMONG 10,401 NEW HIV-1 DIAGNOSES – RESULTS FROM MULTIVARIATE ANALYSIS FRANCE, JULY 2003 - DECEMBER 2006				
		Multivariate analysis		
		aOR	95% CI	P Value ^a
Transmission category	Heterosexual	1		<0.001
	Homosexual	2.01	1.78 2.27	
	Other/unknown male	0.73	0.63 0.85	
Age group (years)	≥ 50	1		<0.001
	15-29	2.11	1.78 2.50	
	30-39	1.62	1.38 1.90	
	40-49	1.23	1.03 1.46	
Current nationality	Sub-Saharan Africa	1		<0.001
	France	4.21	3.59 4.92	
	Other foreign country	2.80	2.36 3.32	
Semester of diagnosis	2 nd semester 2003	1		0.05
	1 st semester 2004	0.93	0.78 1.11	
	2 nd semester 2004	0.92	0.77 1.10	
	1 st semester 2005	0.99	0.84 1.18	
	2 nd semester 2005	0.96	0.81 1.15	
	1 st semester 2006	1.03	0.86 1.23	
Reasons for HIV testing	2 nd semester 2006	0.71	0.57 0.89	<0.001
	Pregnancy and systematic screening	1		
	Clinical symptoms or biological data	1.07	0.91 1.26	
	Exposure	1.39	1.80 1.64	
	Others	0.92	0.77 1.10	
Professional category	Unknown	1.29	1.05 1.59	0.0001
	Non professional activity	1		
	employee	1.12	0.97 1.29	
	Blue collar	0.86	0.73 1.03	
	High level staff	1.25	1.09 1.44	

^a global test, CI : confidence interval
Hosmer-Lemeshow statistic: Chi-square=14.2, p=0.07

Discussion

The surveillance of recent infections has shown that the largest population diagnosed as recently infected in France was MSM. This may result from both a high HIV incidence and a more frequent testing among MSM in this group. Other sources of data confirm these results: many epidemiological data suggest that MSM have been engaging in high- risk sexual behaviors in recent years in France: e.g.

(i) increase in the proportion of unprotected anal intercourse from 19% in 1997 to 33% in 2004 (Enquête Presse Gay 1997 and 2004) (ii) an outbreak of syphilis since 2000 and (iii) emergence of Lymphogranulomatose venereum rectal in 2004. Moreover, half of MSM have been tested during the last 12 months in behavioral surveys (Enquête Presse Gay 2004, A.Velter *et al.*) whereas 11% of the general population has been tested during the last year (Survey Barometre Sante/Inpes 2004).

The number of recent infections diagnosed among drug users is very low (less than 25 cases per year) and other surveys have shown that drug users are aware of their HIV serostatus (Enquête Coquelicot 2004, M.Jauffret *et al.*). These results reflect the impact of harmreduction strategies implemented in France since the beginning of the nineties.

Conclusion

The information on recent infections is crucial for renewing prevention messages, particularly among populations for which HIV transmission is on-going, such as the gay community in France, and for promoting HIV testing among population for which few recent infections are identified. An overview of new testing strategies is in France on going, in order to study the opportunity to use the rapid HIV test on blood or serum sample notably in a communitary context only.