

## HIV Risk-Related Behaviors among Injection Drug Users in Rome: Differences between 1990 and 1992

### ABSTRACT

Temporal differences in human immunodeficiency virus (HIV) risk-related behaviors among injection drug users in Rome, Italy, were analyzed in 487 drug users recruited in 1990 and 450 recruited in 1992. Sharing of syringes decreased among self-reported HIV-positive drug users between 1990 and 1992, but there was no change in their sexual behavior. Fewer HIV-seronegative drug users reported passing on used syringes in 1992 than in 1990; however, there was no change in the percentage of seronegative subjects using previously used syringes, and a reduction in condom use with primary partners. There still exists a great potential for transmission of HIV infection among injection drug users and from injection drug users to the general population. (*Am J Public Health*. 1995;85:829-832)

Marina Davoli, MD, MSc, Carlo A. Perucci, MD, Damiano D. Abeni, MD, MPH, Massimo Arcà, Giovanna Brancato, MHS, Francesco Forastiere, MD, PhD, MSc, Paola M. Montiroli, and Francesca Zampieri

### Introduction

In Italy, injection drug use is the major risk factor for human immunodeficiency virus type 1 (HIV-1) infection and the acquired immunodeficiency syndrome (AIDS), accounting for about two thirds of the total 22 720 AIDS cases reported as of June 30, 1994.<sup>1</sup> Moreover, most cases of AIDS among heterosexuals are due to sexual transmission by injection drug users.<sup>2,3</sup> The proportion of AIDS cases attributable to heterosexual transmission in Italy increased from 1.5% in 1985 to 10.6% in 1994.<sup>1</sup>

An understanding of temporal trends of risk behavior among drug injectors may help in verifying the effectiveness of prevention activities, planning more appropriate education and treatment interventions in the community, and providing estimates for forecasting the HIV epidemic. Most studies of injection drug users and HIV infection have been based on samples recruited in drug abuse treatment centers and have focused mainly on risk factors directly related to drug use, with minor attention to risk factors related to sexual transmission. These circumstances led the World Health Organization Global Programme on AIDS (WHO-GPA)<sup>4</sup> and the European Community (EC) DGV and DGXII<sup>5</sup> to design multicenter studies of the behavior of injection drug users. The results of the Italian study conducted in 1990 in Rome and other cities have been presented elsewhere.<sup>6</sup> In 1992 we repeated the study in Rome to evaluate temporal differences in risk behaviors among injection drug users over a 2-year period.

### Materials and Methods

In accordance with the EC and WHO-GPA study protocols,<sup>4,5</sup> in both surveys the subjects to be interviewed had to have injected drugs at least once in the 2 months before the interview. Half of them were to be recruited from current participants in drug abuse treatment programs (whether pharmacological, psychosocial, or rehabilitative), while the other half were not to be currently in treatment. In both surveys, we recruited study participants at public treatment centers for drug addiction, at the reception centers of therapeutic communities, and in the street (i.e., at meeting places of injection drug users in squares, parks, public gardens, bars, railroad stations, and private dwellings).

Interviews took place in May through October 1990 (n = 487) and July through November 1992 (n = 450). The structured questionnaire was based on the WHO-GPA<sup>4</sup> and EC<sup>5</sup> questionnaires and adapted to the Italian setting. Interviews were conducted anonymously by doctors, psychologists, nurses, and individuals with a past history of drug injection who worked for services aimed at rehabilitation of injection drug users. Administration of the questionnaire was standardized through repeated training sessions. No third parties were present at the interviews. All questions on HIV risk-

The authors are with the Epidemiology Unit, Regional Health Authority, Rome, Italy.

Requests for reprints should be sent to Marina Davoli, MD, MSc, Osservatorio Epidemiologico, Regione Lazio, Via S Costanza, 53, 00198 Roma, Italia.

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**TABLE 1—Characteristics of Injection Drug Users in Rome, Italy, in 1990 and 1992**

	1990 (n = 487)		1992 (n = 450)		P
	No.	%	No.	%	
Mean age, y (SD)	27.0 (4.9)		31.1 (5.7)		<.001
Sex					
Male	391	80.3	321	71.3	.002
Female	96	19.7	127	28.2	
Transsexual	...	...	2	0.5	
Education, y					
≤8	210	43.1	134	29.8	<.001
>8	277	56.9	315	70.0	
Unknown	...	...	1	0.2	
Marital status					
Married	115	23.6	138	30.7	.017
Unmarried	372	76.4	311	69.1	
Unknown	...	...	1	0.2	
Jailed in the past					
Yes	261	53.6	267	59.3	.081
No	226	46.4	182	40.5	
Unknown	...	...	1	0.2	
Occupational status					
Employed	246	50.5	275	61.1	<.001
Unemployed	234	48.0	161	35.8	
Unknown	7	1.5	14	3.1	
HIV status (self-reported)					
Not tested	31	6.4	51	11.3	.138
Positive	133	27.3	135	30.0	
Negative	320	65.7	258	57.3	
Unknown	3	0.6	6	1.4	
In treatment at time of interview					
Yes	252	51.7	250	55.6	.270
No	235	48.3	200	44.4	

served: 24% of the subjects interviewed in 1990 reported injecting with syringes previously used by others, compared with 14% in 1992; the proportion of drug injectors passing used syringes on to others was 29% in 1990 and 13% in 1992. A lower percentage of subjects reported condom use with their primary partners in 1992 (42%) than in 1990 (49%). No major differences were observed over the 2 years with regard to condom use with occasional partners (65% of subjects in 1990 and 70% of subjects in 1992 used condoms) and percentages of subjects who reported that their primary partners did not use drugs (54% in 1990 and 48% in 1992).

Temporal differences in HIV risk-related behavior were analyzed separately for those who reported their HIV status as seropositive and those who reported their status as seronegative, adjusting for age, sex, education, occupation, and treatment status (Table 2). Drug users positive for HIV reported significantly less syringe sharing behavior in 1992 than in 1990, and there was no change in their sexual behavior. Fewer HIV-seronegative drug users reported passing on used syringes to other drug injectors in 1992 than in 1990, but there was no change in the percentage of seronegative subjects who reported using already used syringes. Condom use with primary partners was reported by a lower proportion of HIV-seronegative subjects in 1992 than in 1990.

## Discussion

This study shows substantial differences in drug users' needle-sharing behaviors over a short period of time. HIV-seropositive drug injectors were significantly less likely to share syringes in both directions in 1992, while HIV-seronegative drug injectors were less likely to pass on used syringes to other drug injectors but did not report less self-injection with previously used syringes. With regard to sexual behavior, the percentage of drug injectors, both HIV-seropositive and HIV-seronegative, who reported that their primary partners were not injection drug users was high in both years. Condom use was still limited, particularly among HIV-seronegative drug users, who were less likely to report using condoms with occasional partners in 1992 than in 1990.

Surveys of the behaviors of injection drug users have methodological limitations. For one thing, the nature of the injection drug-using population is such

related behavior referred to the 6 months preceding the interview.

Since one of the study concerns was the link between awareness of HIV status and behavior change, each respondent was also asked about the results of any previous HIV test. Permission was requested to take a saliva specimen to test for anti-HIV antibodies. The saliva specimens were collected by the "salivette method" (Sarsted, Sarentino, Bolzano, Italy) in 1990 and by a comparable but more convenient method, the "Omnisal" (Saliva Diagnostic Systems, Inc, Vancouver, Canada), in 1992 and were tested following standard immune-enzymatic procedures. When the reliability of self-reported HIV status was assessed in subsets of 124 (in 1990) and 163 (in 1992) injection drug users, the kappa statistic<sup>7</sup> was 0.79 (in 1990; SE = .06) and 0.81 (in 1992; SE = .06).

A comparison of the characteristics of the 1990 and 1992 samples was made

with the chi-square test for categorical variables and the *t* test for continuous variables. Logistic regression, performed with EGRET software,<sup>8</sup> was used to compare risk behaviors in 1990 and 1992, adjusting for age, sex, education, occupation, and treatment status.

## Results

Table 1 shows the general characteristics of the study population. Compared with the 1990 subjects, the subjects recruited in 1992, on the average, were older, had a higher level of education, and were more likely to be female. In both 1990 and 1992, 99% of the subjects injected heroin. Self-reported prevalence of HIV-1 infection (27.3% in 1990 and 30% in 1992) did not differ in the two samples.

Concerning risk behaviors in the 6 months preceding the interview, a strong difference in sharing behavior was ob-

TABLE 2—Differences in Risk Behaviors of Injection Drug Users in Rome between 1990 and 1992, by HIV-1 Infection Status

	Syringe Borrowing		Syringe Lending		Condom Use with Primary Partner		Condom Use with Occasional Partners		Non-Drug-Using Primary Partner	
	1990	1992	1990	1992	1990	1992	1990	1992	1990	1992
<b>HIV-positive</b>										
No./total <sup>a</sup>	68/133	26/135	56/133	10/135	44/72	40/61	37/50	39/55	31/74	18/57
%	51.1	19.3	42.1	7.4	61.1	65.6	74.0	70.9	41.9	31.6
OR <sup>b</sup>	1.00	0.23	1.00	0.14	1.00	1.36	1.00	1.22	1.00	0.75
95% CI	...	0.12, 0.44	...	0.06, 0.30	...	0.57, 3.26	...	0.39, 3.74	...	0.29, 1.94
<b>HIV-negative</b>										
No./total <sup>a</sup>	44/320	29/258	76/320	39/258	93/200	47/139	70/110	73/103	119/204	74/134
%	13.8	11.2	23.8	15.1	45.6	33.8	63.6	70.8	58.3	55.2
OR <sup>b</sup>	1.00	0.89	1.00	0.56	1.00	0.55	1.00	1.22	1.00	1.29
95% CI	...	0.51, 1.55	...	0.35, 0.90	...	0.33, 0.92	...	0.65, 2.30	...	0.73, 2.28

Note. Subjects were asked about their behaviors in the 6 months preceding the interview. OR = odds ratio; CI = confidence interval.

<sup>a</sup>Totals for the sexual behavior refer only to subjects who reported having primary and/or occasional partners. Denominators may further vary because of missing values.

<sup>b</sup>Adjusted for age, sex, education, occupation, and treatment status.

that one cannot utilize lists of drug injectors from which random samples can be drawn; as a consequence, selection bias may occur in the enrollment of the study population. This is suggested in this study by the diversity of the sociodemographic characteristics of the study population at the two study times. If those characteristics are associated with risk behavior, this diversity could partly explain the observed heterogeneity of behaviors, in particular those involving syringe sharing. To partially overcome this problem, we carried out a multivariate analysis taking into account these differences. The differences in risk behaviors we observed in 1992 and 1990 were not, in fact, explained by the different characteristics of the two populations.

Another factor that might restrict the interpretation of our results is the validity of the interview, particularly insofar as the social desirability of certain answers is considered. This has been shown to be particularly true in longitudinal follow-up studies of injection drug users.<sup>9</sup> Some behaviors have come to be well known as risky; subjects who share syringes may well report that they do not, because they know that is the "right" answer. This could have been the case in our study, with a consequent underestimation of the true prevalence of syringe-sharing behaviors. On this basis, however, we would also have expected a higher proportion of subjects to report condom use, which did not occur. Moreover, the mechanism of spread of HIV infection was well known before 1990, so a significant change in

social desirability from 1990 to 1992 is unlikely. Indeed, the results of a recent study showed that self-reports of behavioral change were highly reliable when compared with seroconversion data.<sup>10,11</sup>

Prevalence data always reflect determinants of survival. Part of the observed reduction in risky injection practices in 1992 could be due to excess morbidity and mortality among subjects with higher levels of risk behaviors in 1990, a lower prevalence of risky behaviors among addicts who started injecting drugs after 1990, or both.

The results of our study are similar to those of other studies.<sup>10-16</sup> Results from two surveys of injection drug users conducted in New York<sup>12</sup> showed a significant decline in the use of potentially contaminated syringes. In London, Rhodes et al. have demonstrated a decline over time in syringe sharing, with low levels of condom use and high levels of sexual contact between drug injectors and non-drug-using sexual partners.<sup>13</sup>

During the study period there were no risk reduction programs in Rome, but only general educational campaigns through the media. The different pictures emerging from this study with respect to syringe sharing and sexual behaviors could be explained as evidence of greater resistance to modification of sexual behaviors than to modification of drug-use behaviors or, alternatively, as an effect of educational campaigns that have emphasized the role of syringe sharing as a transmission route for HIV infection among injection drug users and presented

sexual transmission as a matter of concern mainly to the general population.

The estimated prevalence of HIV infection among injection drug users, which in Italy is still above 25%,<sup>17</sup> together with extensive sexual contact between injection drug users and the general population and an unsatisfactory level of condom use, indicate that even now, more than 10 years after the recognition of this epidemic in Italy and the other western countries, there is a great potential for sexual transmission of HIV infection among injection drug users and from injection drug users to the general population. □

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## ABSTRACT

Bitter controversy surrounds the recommendation of mammographic breast-cancer screening for women aged 40 to 49 years of average risk. This paper considers the case for screening women in their 40s with higher risk, specifically women who have one or more first-degree relatives with breast cancer. A review of the literature and of current knowledge suggests that screening such women is more cost-effective, in the sense of having a higher yield per mammogram and better predictive value, than screening women of average risk in this age group. However, there is no evidence that screening is more efficacious in reducing mortality in this subgroup than in other women in their 40s. (*Am J Public Health.* 1995;85:832–834)

# The Limitations of Breast Cancer Screening for First-Degree Relatives of Breast Cancer Patients

Alfred I. Neugut, MD, PhD, and Judith S. Jacobson, MPH

## Introduction

Breast cancer screening has become controversial.<sup>1–7</sup> In the late 1980s, leaders in the field of cancer prevention agreed that screening with mammography and a physical examination on an annual to biennial basis was appropriate for women starting at 40 years of age. However, by 1993, the results of seven randomized trials<sup>8–17</sup> of such screening showed a statistically significant reduction in mortality for women 50 to 59 years of age but did not indicate a benefit in the 40- to 49-year age group.<sup>1</sup> Neither meta-analyses of the trials<sup>1,18</sup> nor observational studies<sup>19–21</sup> showed a significant benefit of screening for women younger than 50 years of age.

Early in 1994, the National Cancer Institute changed its policy; it now recommends routine mammographic screening only for women more than 50 years old.<sup>22</sup> However, the American Cancer Society and others continue to recommend such screening for women over 40 years of age<sup>23,24</sup> on the grounds that (1) the individual randomized trials were method-

ologically flawed; (2) the mammographic technology used in the randomized trials is now obsolete; (3) some of the studies demonstrated a trend toward benefit, particularly after longer follow-up; and (4) better evidence is needed to overturn a previously promulgated recommendation.<sup>25</sup>

Seldom debated and seemingly beyond controversy is the virtually universal practice of mammographic screening of women with a family history of breast cancer. We question the justification for this practice in women under 50 years of age. This paper reviews the reasons why young women with a positive family history are screened and explains why we doubt that such screening is beneficial.

The authors are with the Department of Medicine and School of Public Health, College of Physicians and Surgeons, Columbia University, New York, NY.

Requests for reprints should be sent to Alfred I. Neugut, MD, PhD, College of Physicians and Surgeons, Columbia University, 630 W 168th St, New York, NY 10032.

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