

Prevalence of Human Immunodeficiency Virus Infection among Injection Drug Users Released from Jail

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Abstract

Background: Injecting drug users (IDUs) and prisoners are considered to be highly vulnerable to human immunodeficiency virus (HIV) infection in Iran. This study was carried out to determine the prevalence of HIV infection among IDUs released from jail in Bahar (Hamadan, Iran).

Methods: In a cross-sectional study, 118 IDUs who were prisoners during 2001-07 were evaluated. Their demographic and personal characteristics were assessed by a questionnaire. In order to determine HIV-positive individuals, blood samples were obtained from the participants and tested by enzyme-linked immunosorbent assay and Western blot technique.

Findings: Overall, 20.3% of the subjects had used non-sterile injecting equipment during their imprisonment. The prevalence of HIV infection among the studied population was 4.2%.

Conclusion: As the prevalence of HIV among IDUs released from jail is high, it is necessary for prison authorities to take measures against the increase in the prevalence of HIV among this group.

Keywords: Injection drug users, Acquired immunodeficiency syndrome, Human immunodeficiency virus, Bahar (Iran)

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Introduction

Acquired immunodeficiency syndrome (AIDS) is the world's fourth leading cause of death. Of approximately 14000 new cases of human immunodeficiency virus (HIV) infection that occur daily around the world, 95% occur in developing countries.¹ It is estimated that 70-100 thousand unidentified people are living with HIV in Iran.²

Injecting drug use and sexual transmission are recognized as the primary causes of HIV infection. In recent years, the number of injection drug users (IDUs) living with HIV has been increasing rapidly around the world, including the Middle East and Iran. Iranian IDUs are more vulnerable to HIV infection than other members of the community. After an HIV epidemic among IDUs in certain jails in Iran in 1996, identified cases increased drastically until 2004. Then, the numbers decreased temporarily for a while and remained stable up to the present date.³

In spite of the considerable programs to reduce harm in jails, a study in 2009 revealed that more than 45.0% of men and 15% of women in all jails in Iran had used drugs during the month before the study. It also found injecting drug use in 1.2% of men.⁴ Most prisoners spend only a short time in jail. They take leave or are released from jail back into the society. They will then have relationships within the society. Hence, a drug user released from the jail not only is at risk of AIDS and hepatitis, but can also play a role as a source of this infection in the society.⁵

Different studies in Iran have shown that history of imprisonment and injecting drug use in jail are among the primary causes of HIV infection. Therefore, we carried out this study to determine the prevalence of HIV infection among IDUs in Bahar (a city in Iran), who were prisoners between 2001 and 2007.

Methods

As the statistical population of this cross-sectional study was restricted, we used the complete census. We also extracted the names of all IDUs who were Bahar city inhabitants and had a history of imprisonment in the central jail of Hamadan, Iran, between 2001 and 2006. The names of a total number of 125 people were obtained from their files in Alvand Prison, Hamadan, Iran. Each person was given a specific code to enable their information, blood samples

and test results to be recognized by their codes.

We visited all subjects at their residence or workplace and explained the aims of the study. They were requested to participate. After obtaining their informed consent, they were asked to complete a questionnaire including demographics and other personal traits. Subsequently, a 5 ml blood sample was taken from each person. With appropriate precautions, the blood samples were carried in iced containers to the nearest local laboratory for centrifugation and serum separation. In the local laboratory, serum samples were transmitted into microtubes, encoded, and sent to the state central blood transfusion laboratory.

At the central blood transfusion laboratory, samples were analyzed by enzyme-linked immunosorbent assay (ELISA) and standard kits. Samples with positive ELISA test were further analyzed by Western blot technique. If the results were again positive, the subjects were confirmed to be HIV positive.

The results were analyzed by descriptive statistics. The associations of categorical variables were tested by chi-square tests in SPSS for Windows 16.0 (SPSS Inc., Chicago, IL, USA).

Results

From 125 people who were contacted, 118 individuals were available and interested in taking part. The mean age of subjects was 32.04 ± 8.05 years. Age, marital status, residence (urban or rural), literacy, and occupation were not considered as HIV risk factors ($P > 0.05$) (Table 1). The mean age of subjects at the time of first narcotic drug use was 18.2 ± 5.09 years. While 33.9% of the subjects had their first experience of drugs at an age younger than 15, the first experience of 40.7% of the participants had occurred between ages 16 and 20.

Most subjects (86.5%) had secondary school education. A total of 50.8% were unemployed or did not have a permanent job (Table 1). Non-sterile injecting equipment was used by 24 subjects (20.3%) inside prison and by 41 (34.7%) after being released. On the other hand, 24 participants (20.3%) had quit their drug using habit after their release. Age, marital status, place of residence (urban or rural), literacy, and occupation were not considered as HIV risk factors ($P > 0.05$). Finally, among 118 IDUs whose blood samples were tested for HIV, 5 subjects (4.23%) were HIV-positive.

Table 1. Demographic characteristics of injection drug users who were in prison in Bahar (a city in Iran) during 2001-07

	Frequency	Percent	HIV-positive*	P
Age Group (year)				
Younger than 25	34	28.8	0 (0.0)	0.08
26-30	26	22.0	1 (3.8)	
31-35	20	16.9	3 (15.0)	
36-40	18	15.4	1 (5.6)	
Older than 41	20	16.9	0 (0.0)	
Marital Status				
Single	66	55.9	3 (4.5)	0.85
Married	52	44.1	2 (3.8)	
Residence				
Urban	64	59.8	4 (6.2)	0.34
Rural	43	40.2	1 (2.3)	
Education				
Illiterate	9	7.6	0 (0.0)	0.57
Primary school	51	43.3	3 (5.9)	
Secondary school	42	35.6	1 (2.4)	
High School	7	5.9	0 (0.0)	
Diploma	6	5.1	1 (16.7)	
College degree	3	2.5	0 (0.0)	
Job				
Farmer	6	5.1	0 (0.0)	0.28
Worker	19	16.1	0 (0.0)	
Self-employed	17	14.4	0 (0.0)	
Other employment	16	13.6	0 (0.0)	
Unemployed	60	50.8	5 (8.3)	

HIV: Human immunodeficiency virus; *Values are expressed as number (percentage in group)

Discussion

Our study showed 4.3% of IDUs in an Iranian city to be HIV-positive. Other studies in other cities of Iran reported similar results. In a study on 5530 prisoners from 27 jails in Iran, 5.2% of subjects with an injecting background were HIV-positive.⁶ In another study on prisoners in three central provinces in Iran, 6.6% were HIV-positive.⁵ Other studies carried out in other countries have shown various results. For instance, 7.5% of prisoners in Italy have been reported as HIV-positive.⁷

In this study, the mean age of subjects at the time of first narcotic drug use was 18.2 ± 5.09 years. A separate study on IDUs in Shiraz showed that the mean age of first time narcotic drugs use was 18.63 ± 1.60 years. Therefore, the majority of IDUs have their first experience as teenagers or young adults.⁸ Preventive measures should thus be taken, especially among secondary school students.

Most of our participants had secondary school education and were unemployed. Hence, low education level, unemployment, and undesirable financial status are crucial

factors in encouraging individuals to use drugs and to indulge in dangerous actions such as using non-sterile injecting equipment.

Previous studies have shown that HIV/AIDS is increasing among IDUs in Iran. In fact the triangle of AIDS, addiction, and jail are considered as major health problems in Iran. Zamani et al. suggested an average of 14.3% Iranian IDUs to be HIV-positive. According to their findings, the rates varied between 0.0% and 35.7% in different provinces.³

We found that 55.0% of the prisoners had used non-sterile injecting equipment either as prisoners or after being released. The use of non-sterile injecting equipment demonstrates that the IDUs are unaware of the necessity of protected injection. Therefore, educational programs on the use of sterile injecting equipment are required to increase the awareness of IDUs and to help reduce the potential harm. A study on 1082 IDUs showed that 75.0% of the participants had changed their risky behaviors after having access to free, sterile injecting equipment at drugstores.⁹ Therefore, voluntary counseling and testing

(VCT) centers, drop-in centers (DIC), and drugstores are required to inform and instruct the public about HIV/AIDS and to provide them with sterile injecting equipment.

A systematic review showed that the number of IDUs in jails of Switzerland, Germany, and Spain decreased markedly when they were given instructions to avoid using non-sterile injecting equipment and were provided with sterile equipment.¹⁰ Since the only way to protect people from AIDS is by prevention, public awareness needs to be promoted to reduce the incidence of risky behaviors. Therefore, it is necessary to test IDUs as they enter jails in order to prevent the spread of infection among prisoners. In addition, prisoners need to be retested as they are released. They should also be controlled after release to further prevent their risky behaviors. On the other hand, health

officials and prison authorities have to take measures against bringing drugs into jails, using non-sterile injecting equipment, and prisoners who use drugs in groups. Finally, the number of VCT and DIC centers has to be enhanced and IDUs should be provided with methadone and sterile equipment.

Conflict of Interest: The Authors have no conflict of interest.

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شیوع آلودگی به HIV در مصرف کنندگان تزریقی مواد دارای سابقه زندان در شهرستان بهار، غرب ایران

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چکیده

مقدمه: مصرف کنندگان تزریقی مواد و زندانیان از گروه‌های پرخطر و مستعد ابتلا به HIV در ایران محسوب می‌شوند. این پژوهش با هدف، تعیین شیوع آلودگی به HIV در معتادان تزریقی دارای سابقه زندان در شهرستان بهار واقع در استان همدان انجام گرفت. **روش‌ها:** جامعه آماری پژوهش ۱۱۸ نفر از معتادان تزریقی شهرستان بهار بودند که سابقه زندان در سال‌های ۸۶-۱۳۸۰ را داشتند. **یافته‌ها:** ۲۰/۳ درصد از افراد مورد مطالعه در داخل زندان از وسایل تزریق غیر استریل و مشترک جهت مصرف مواد استفاده کرده بودند. شیوع آلودگی به HIV در افراد مورد مطالعه ۴/۲ درصد بود. **نتیجه‌گیری:** از آن جا که آلودگی به HIV در معتادان تزریقی دارای سابقه زندان به نسبت بالا می‌باشد، ضروری است که مسؤولین زندان، راهکارها و تدابیر لازم را برای کاهش این شیوع به کار گیرند.

واژگان کلیدی: معتادان تزریقی، ایدز، HIV، شهرستان بهار (ایران)

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