

Seroprevalence of Human Immunodeficiency Virus among Injecting Drug Users in District Sanghar, Sindh, Pakistan

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Objective: To investigate seroprevalence of Human Immunodeficiency Virus (HIV) among injection drug users (IDUs) at District Sanghar, Pakistan.

Methodology: A total of 119 blood samples were collected from IDUs shooting drugs at different sites across District Sanghar. Demographic data regarding age, gender, marital status, education, and occupation were collected. Presence of HIV was detected using 4th Generation immunochromatographic Alere Combo kits Ag/Ab HIV-1/2 as per manufacturer's instructions.

Results: We found that 24(20.17%) samples were positive for HIV infection. Among them, male IDUs were 22(18.49%), while 2(1.68%) were female IDUs. Taluka-wise frequency of HIV among IDUs

revealed that highest cases 10.08% (n=12) in taluka Tando Adam, followed by taluka Shahdadpur having 5.88% (n=07) cases. Taluka Sanghar had 3.36% (n=04) cases while least number of positive cases was found in taluka Sinjoro 0.8% (n=01).

Conclusion: HIV was more prevalent in male IDUs as compared to female. High prevalence of HIV among IDUs in district Sanghar is alarming and warrants urgent attention of health professionals for strict measures to control the transmission of HIV in IDUs and general population. (Rawal Med J 202;45:758-761).

Keywords: Seroprevalence, injecting drug users, HIV, AIDS.

INTRODUCTION

Human immunodeficiency virus (HIV) is characterized with high genetic variability owing to the presence of reverse transcriptase enzyme. HIV uses helper-T cells as its host for replication.¹ The major transmission routes of HIV include intravenous drug use and sexual contact (homo and heterosexual contact).²⁻⁴ Infections caused by HIV are jointly recognized as acquired-immunodeficiency syndrome (AIDS), which specifically targets body's defense system.⁵ The origin of HIV has been reported in non-human species from West central Africa and thought to be transmitted to human species in 20th century.^{6,7} HIV-I and HIV-II are the two major types of this virus. Of these two HIV groups, HIV-I has been reported as high prevalent as compared to HIV-II world-wide.⁶⁻⁸ HIV-I may also differentiate with HIV-II type in pathogenicity, as HIV-II has been found with low level of pathogenicity.⁶ HIV-I has been found as a dominant HIV type in Pakistan, particularly with A and G subtypes of M group.^{9,10}

United states, for the first-time, during 1981 reported AIDS,¹¹ and approximately 90% AIDS cases have been reported in developing countries, due to illiteracy, poverty, underdevelopment and lack of health facilities.¹² High incidence rate has been shown due to poor medical facilities.¹³ In general, AIDS cases in Pakistan have increased from 11% in 2005 to 21% in 2008. In Pakistan, major risk factors for the transmission include reusing syringes and needles, unprotected sex, sex workers, and migration (both internal as well as external).^{13,14} IDUs are the major risk factors for spread of HIV in Pakistan. Epidemics of HIV/AIDS in Pakistan have been reported to occur due to drugs used by injections, repatriated migrant workers, and male/female sex workers.¹⁵

Huge numbers of IDUs have been reported in many cities of Pakistan, which pose a serious risk of transmission of HIV to healthy population. HIV surveillance program in country (started in 2004) demonstrated the HIV epidemic occurring in IDUs and transgender sex workers. Because of increasing

number of IDUs, Pakistan appears to be at a greater risk for the transmission of HIV/AIDS in healthy population.¹⁵ The major cause of spreading is the reuse of needles/syringes and sharing of utensils.¹⁶ The goal of this study was to identify IDUs for HIV/AIDS infections and assess the frequency of infection in the District Sanghar.

METHODOLOGY

This cross sectional prospective study was carried out from April to December 2015 at the Institute of Microbiology University of Sindh, Jamshoro, Pakistan. The study was approved by advanced studies and research board (ASRB) of the university. IDUs from different talukas/parts of Sanghar district were screened for HIV/AIDS. Actual places where IDUs shoot drugs were selected for the collection of blood samples from IDUs. The blood samples from IDUs belonging to four selected regions, i.e. Sanghar, Tandoadam, Sinjhor and Shahdadpur were collected. To select a probability, list of specific locations where few incognito persons approach to convoke and inject drugs at specific times were considered time frame sampling.

A total of 119 blood samples were obtained following standard collection methods. Three ml of blood sample was obtained and carefully transferred to sterile and appropriately labeled blood collecting tube. All blood samples were kept at room temperature for 15-20 minutes prior to processing for serum separation then centrifuged for 10 min at 3000 rpm. Serum was carefully separated and stored in sterilized tubes at 4°C for further process. Screening for HIV/AIDS was carried out using Combo Ag/Ab, Alere Determine 4th generation (Mastudo, Japan), as per manufacturer's guidelines. **Statistical Analysis:** SPSS version 21 was used for analysis.

RESULTS

Out of 119 samples, 20.17% were positive for HIV/AIDS. Taluka-wise breakup of samples of all IDUs demonstrated that highest number of samples 35.29% (n=42) belonged to Tandoadam, followed by Shahdadpur 32.77% (n=39), while 19.33% (n=23) were from Sanghar and the lowest number

of samples 12.61% (n=15) was from Sinjhor (Table 1). Gender-wise distribution indicated that males were 82.35% (n=98) while 17.65% (n=21) samples belonged to female IDUs. Moreover, taluka-wise distribution of male and female samples collected from of the district Sanghar revealed that 17.65% (n=21) of male and 1.68% (n=02) of female IDUs were from taluka Sanghar, indicating highest ratio of male IDUs in the taluka. (Table 2).

Table 1. Taluka-wise distribution of all samples collected from the District Sanghar.

Names of Talukas covered in this study	Total samples collected	
	n	%
Sanghar	23	19.33
Sinjhor	15	12.61
Tando Adam	42	35.29
Shahdadpur	39	32.77
Total samples	119	100

Table 2. Gender-wise distributions of all IDUs in various Talukas of District Sanghar.

Taluka	Male		Female	
	(=n)	%	(=n)	%
Sanghar	21	17.65	2	1.68
Sinjhor	14	11.76	1	0.84
Tandoadam	31	26.05	11	9.24
Shahdadpur	32	26.89	7	5.88
Total	98	82.35	21	17.65

Table 3. Taluka-wise prevalence of HIV-AIDS in IDUs.

Taluka	Male (%)		Female (%)		Total positive	Total negative
	+ve	-ve	+ve	-ve		
Sanghar	2.52	15.13	0.84	0.84	3.36	15.97
Sinjhor	0.84	10.92	0	0.84	0.84	11.76
Tandoadam	9.24	16.81	0.84	8.40	10.08	25.21
Shahdadpur	5.88	21.01	0	5.88	5.88	26.89
Total	18.49	63.87	1.68	15.97	20.17	79.83

Table 4. Statistical analysis of the seroprevalence of HIV among IDUs.

Variables	HIV +ve (n=24)	HIV -ve (n=95)	OR [95% CI]	p value
Gender				
Male	22	76	2.75 [0.59 to 12.73]	0.19
Female	02	19		
Marital status				
Married	08	26	0.75 [0.29 to 1.97]	0.57
Un-married	16	69		

Overall seroprevalence of HIV/AIDS in taluka Sanghar was recorded as 3.36% among the IDUs who yielded positive test for HIV/AIDS which consisted of 2.52% male and 0.84% female. Taluka Tandoadam had 10.08% followed by Taluka Shahdadpur (Table 3). Marital status demonstrated that 28.57% (n=34) of the IDUs were married and among them 6.72% (n=08) IDUs yielded HIV/AIDS positive tests. While, 71.43% (n=85) IDUs were un-married and out of them 13.44% (n=16) IDUs were reported as positive for HIV/AIDS (Table 4).

DISCUSSION

The present study reports the seroprevalence of HIV/AIDS among IDUs belonging to different talukas of district Sanghar, Sindh. It is important to know that in past the IDUs have been reported to use either of the two ways to shoot drugs i.e. by direct inhalation process or by subsuming in smoking supplies.¹⁷ In current era, the scenario has been rehabilitated and majority of drug abusers have changed the mode of shooting drugs from inhalation to injecting into blood by IV/IM, as a result the drug abusers with injecting drug mode of use are exposed to a serious risk of gaining and spreading various contagious infections including HIV/AIDS.

Thus, IDUs appears to be a serious risk of transmitting diseases, which have been linked with shooting drugs in groups, commercial blood donations, sharing of syringes and commercial and unprotected sex, particularly HIV/AIDS and syphilis.^{18,19} The data of present study indicates that HIV/AIDS among IDUs is more prevalent in males as compared to females. Taluka-wise seroprevalence of HIV/AIDS showed a considerable increase in infection in Taluka Tandoadam than that of other three talukas of the district Sanghar.

The mode of transmission of HIV has been reported through donating contaminated whole blood, blood products and homo and heterosexual ways. Other causes of HIV dissemination among healthy population have been reported by injecting drug use, sexual contact with multiple partners, unprotected sex, needle sharing, and illiteracy. According to previous HIV/AIDS outbreak history, Larkana was

the first city of Sindh where first HIV/AIDS outbreak was escalated, and nineteen cases were reported positive for HIV/AIDS in IDUs.¹⁷

CONCLUSION

High seroprevalence of HIV/AIDS in IDUs at district Sanghar is alarming and necessitates emergent consideration of the medical authorities regarding awareness among the population.

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