

Hepatitis B/C and HIV Prevalence in Injecting Drug Users in Ukraine

Background

Volodymyr Kurpita,¹
Valeriya Shaginyan,²
Yuri Kruglov,²
Anatoly Gura,²
Yuri Kobyscha,¹
Violetta Martynovska²

Injecting drug users (IDUs) are the most heavily affected by the HIV epidemic in Ukraine. In 2005, HIV sentinel surveillance studies showed that HIV prevalence among IDUs varied from 9 to 66% in 14 geographic settings (see table 1). Much less is known about hepatitis B and hepatitis C prevalence in this sub-population. The objective of this survey was to estimate the prevalence of infections with hepatitis B virus (HBV), hepatitis C virus (HCV) and the human immunodeficiency virus (HIV) in IDUs attending one outreach site

Table 1. HIV prevalence in IDUs in 14 Ukrainian regions (sentinel surveillance data, 2005)

| Regions | Number of tested IDUs | HIV prevalence |
|------------|-----------------------|----------------|
| Vinnitsa | 267 | 22.8 ±2.6% |
| Donetsk | 250 | 40.8 ±3.1% |
| Zhytomir | 192 | 48.4 ±3.6% |
| Kyiv | 250 | 48.8 ±3.2% |
| Lutsck | 300 | 26.0 ±2.5% |
| Mykolayiv | 250 | 66.4 ±3.0% |
| Odessa | 269 | 41.3 ±3.0% |
| Poltava | 250 | 19.6 ±2.5% |
| Simferopol | 380 | 51.1 ±2.6% |
| Sumy | 216 | 9.7 ±2.0% |
| Uzhgorod | 22 | 27.3 ±9.5% |
| Kharkiv | 100 | 23.0 ±4.2% |
| Kherson | 300 | 17.3 ±2.2% |
| Cherkassy | 219 | 26.9 ±3.0% |

1. Sexually Transmitted Infections/
HIV/AIDS programme, World Health
Organization Regional Office for
Europe

2. Gromashevsky Institute of
Epidemiology and Infectious Diseases,
Ukraine

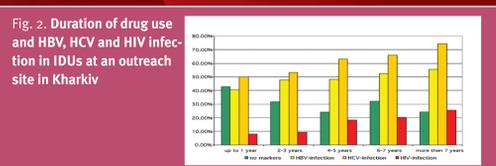
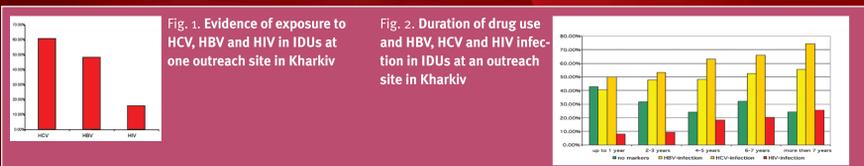
Methods

A cross sectional study of IDUs who attended one outreach site in the city of Kharkiv (eastern Ukraine) during 2 months in 2004. Individuals were provided with a coded card, devoid of name or other personal identifiers to ensure anonymity. 450 blood samples were tested to determine HIV, HBV and HCV prevalence by using the Enzyme-Linked ImmunoSorbent Assay (ELISA).

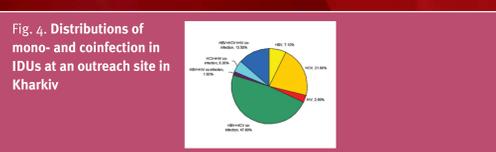
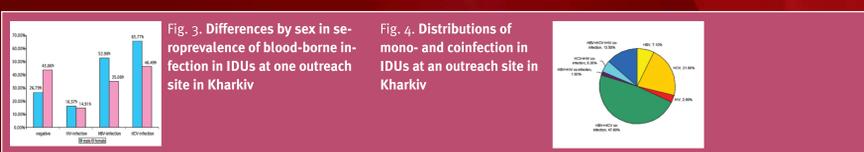
Results

Evidence of exposure to HCV by detecting antibodies to HCV was found in 274 (60.9%) individuals. Overall exposure to HBV was found in 218 (48.4%) of the study subjects, including anti-HBc positively in 210 (46.7%) individuals and HBsAg carriage in 30 (6.67%). 72 (16.0%) IDUs were HIV positive (see Fig 1). In total, 310 (68.9%) of the sample population had either hepatitis or HIV.

The lowest prevalence rates were identified in the 15–19 years age group: HIV prevalence was 5.0%; exposure to HBV 43.3% and exposure to HCV 56.7%. The highest rates were detected in IDUs over the age of 35: 16.7%, 5.0% and 89.5%, respectively. There was a clear association between duration of drug usage and infection with HIV and hepatitis (see Fig 2).



A significant difference in seroprevalence of HBV and HCV infections was identified between male and female IDUs. The HCV seroprevalence was found in 65.8±3.2% among the male participants and 46.5±6.9% in the female. HBV seroprevalence were detected in 53.0±2.7% of the men and 35.1±4.5% of the women. No significant difference in HIV prevalence was found between male and female subgroups (16.4±4.4 and 14.9±4.2%, respectively) (see Fig 3).



About 68% of the tested IDUs had coinfections. The most common were HBV and HCV (47.8%). HCV monoinfection was observed in 21,9% of the individuals, while HBV and HIV were present in 7,1% and 2,9% respectively (see Fig 4). There was a 7.6 times greater risk for IDUs to be infected with HCV than HIV and a 3 times greater risk than HBV. The risk of exposure to HBV infection was 2.5 times higher than for HIV infection.

Conclusions

HIV, HBV and HCV infections are a significant public health problem for Ukraine. This study confirms an elevated HIV prevalence in the IDU population (16% versus 1.46% in the general population). The study also demonstrated consistent and very high rates of both HBV and HCV infections in IDUs. While antiretroviral therapy is increasingly becoming available for the IDU population (in 2006, around 37% of all people on ART were active or former IDUs), hepatitis will increasingly emerge as a major public health problem, which requires scaling up prevention and rapidly increasing treatment.