**BACKGROUND**

People who inject drugs (PWID) have high HIV incidence and prevalence, and may have limited access to antiretroviral therapy (ART) in some settings. The HIV Prevention Trials Network (HPTN) 074 trial enrolled HIV-infected PWID in Indonesia, Ukraine, and Vietnam and evaluated an intervention that included enhanced support for medication-assisted treatment (MAT) for substance use and ART. The study intervention was associated with reduced mortality and increased viral suppression after 52 weeks of follow-up [1]. In this study, we evaluated baseline HIV drug resistance and antiretroviral (ARV) drug use in HPTN 074.

**METHODS**

**STUDY COHORT**

HPTN 074 enrolled 502 HIV-infected index participants who met the following inclusion criteria: active injection drug user, HIV viral load ≥100 copies/mL, and able to recruit at least one HIV-uninfected network injection partner. Later in the study, index participants were also required to have a CD4 cell count >50 cells/mm³ at screening [1]. The study limited enrollment of individuals who reported prior ART.

**LABORATORY METHODS**

HIV drug resistance testing and ARV drug testing were performed at the HPTN Laboratory Center (Johns Hopkins University, Baltimore, MD, USA). Resistance testing was performed using the ViroSeq HIV-1 Genotyping System v2.0 for samples from index participants with HIV viral loads >400 copies/mL. ARV drug testing was performed using a qualitative, high-throughput assay that detects 20 ARV drugs in five drug classes [2]. The limit of quantification for the assay is 2 or 20 ng/mL, depending on the drug. HIV subtypes were determined by phylogenetic analysis and were confirmed with online subtyping tools.

**STATISTICAL METHODS**

Logistic regression models were used to assess associations between risk factors and HIV drug resistance.

**RESULTS**

**OVERVIEW OF TESTING AND RESULTS**

*Figure 1. Study overview.*

**FACTORS ASSOCIATED WITH HIV DRUG RESISTANCE**

**HIV drug resistance was more frequent among those with ARV drugs detected than in those without (p<0.001, Table 1). Drug resistance was also more frequent among participants in Indonesia (24.1%) compared to Ukraine (2.4%; p=0.001) or Vietnam (13.4%; p=0.014, Figure 2), and among participants who reported a history of incarceration compared to those who did not (42.9% vs. 11.0%; p=0.012).**

**Table 1. Factors associated with HIV drug resistance.**

**CONCLUSIONS**

- This study revealed a high prevalence of multi-class resistance among PWID with drug resistance.
- Active ARV use was strongly associated with drug resistance in this cohort of individuals with viral loads >1,000 copies/mL.
- Drug resistance was also associated with study site (Indonesia, greater than Ukraine or Vietnam) and a history of incarceration.

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**RESEARCH COLLABORATORS**

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