Background

- HIV-positive individuals who use illicit drugs (PWUD) continue to suffer from high rates of suboptimal virologic outcomes, including elevated plasma HIV-1 RNA viral load (VL).
- Although previous studies have characterized temporary increases in VL among HIV-positive PWUD, factors associated with longer periods of time with heightened HIV transmission potential have not been investigated.
- Therefore, we examined factors associated with amount of person-time spent above a VL threshold that increases risk of transmission to others among HIV-positive PWUD in Vancouver, Canada.

Methods

- Data were derived from the AIDS Care Cohort to evaluate Exposure to Survival Services (ACCESS), a long-running prospective cohort of PWUD in Vancouver, Canada.
- Through self-referral and street-based outreach, ACCESS has enrolled HIV-positive individuals who are aged ≥ 18 years, have used illicit drugs other than cannabis in the previous month, reside in the Greater Vancouver Area, and provide informed written consent.
- At baseline and semi-annually thereafter, participants complete an interviewer-administered questionnaire soliciting data on socio-demographics, drug use patterns and other exposures. Participants also provide blood samples for serologic analyses. Participants are offered $30 CAD at each study visit.
- ACCESS data were confidentially linked to a province-wide centralized HIV/AIDS registry to obtain comprehensive clinical monitoring records for each study participant.
- We used Poisson regression to longitudinally examine factors associated with person-time above a VL of 1500 copies/mL in the previous 180 days.

Results

- Between December 2005 and May 2014, 845 HIV-positive PWUD were included in the study.
- Of the 845 participants, 581 (69%) were males and 464 (55%) self-reported Caucasian ancestry.
- 593 (70%) participants spent at least one day with a VL above 1500 copies/mL during the study period.
- In a multivariable model (Table 1), homelessness (Adjusted Rate Ratio [ARR] = 1.50; 95% confidence interval [CI]: 1.36 – 1.65), and having no sources of social support (ARR = 1.36; 95% CI: 1.23 – 1.49) were independently and positively associated with amount of time spent over 1500 copies/mL plasma.
- Age (ARR = 0.97; 95% CI: 0.97–0.98), enrollment in addiction treatment (ARR = 0.73; 95% CI: 0.65–0.82), and CD4 cell count (ARR = 0.81; 95% CI: 0.78 – 0.85) were independently and negatively associated with time spent over 1500 copies/mL plasma (Table 1).

Discussion

- Over-two thirds of HIV-positive PWUD in this cohort were found to have a VL over 1500 copies/mL at least once during the 9-year study period.
- Periods of homelessness or lacking in social support were independently associated with greater time experiencing an elevated VL.
- These findings suggest the need for targeted prevention efforts to address modifiable factors associated with risk of HIV transmission among PWUD.

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