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Substance use in perinatally-infected and same-age, HIV- adolescents in South Africa

Kirsty Brittain[1], Landon Myer[1], Nicole Phillips[2], Heather J Zar[3], Dan J Stein[2], **Jacqueline Hoare**[2]

[1]Division of Epidemiology & Biostatistics, and Centre for Infectious Disease Epidemiology & Research, University of Cape Town, South Africa, [2]Department of Psychiatry & Mental Health, and South African Medical Research Council Unit on Risk & Resilience, University of Cape Town, South Africa, [3]Department of Paediatrics & Child Health, and South African Medical Research Council Unit on Child & Adolescent Health, University of Cape Town, South Africa

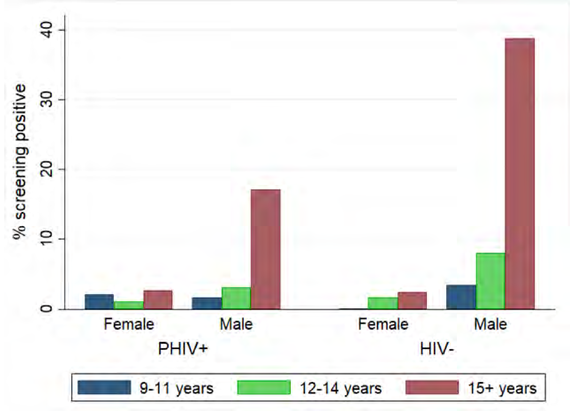
BACKGROUND

- Experimentation with substances is common among adolescents
- There are few longitudinal data exploring the prevalence among perinatally-infected adolescents living with HIV (PHIV+) in sub-Saharan Africa
- Comparisons with HIV-uninfected (HIV-) adolescents are needed

METHODS

- Cape Town Adolescent Antiretroviral Cohort:
  - PHIV+ adolescents aged 9-14 years and on ART
  - Age- and gender-matched HIV- adolescents
  - Followed for up to 5 years
- Self-reported substance use assessed annually
- 6-panel urine toxicology screen at enrolment and after 36 and 48 months of follow-up
  - Marijuana, methaqualone/mandrax, cocaine, MDMA, methamphetamine, opiates
- HIV viral load (VL) measured annually
- Using repeated measures, we describe substance use during:
  - Pre-adolescence (ages 9-11 years)
  - Early adolescence (ages 12-14 years)
  - Middle-late adolescence (ages 15+)

Figure 1. Proportion of PHIV+ and HIV- peers screening positive for any substance on urine toxicology screen, by age and gender



Substance use increases dramatically with age among male adolescents, but is lower among perinatally-infected adolescents living with HIV versus HIV-uninfected adolescents

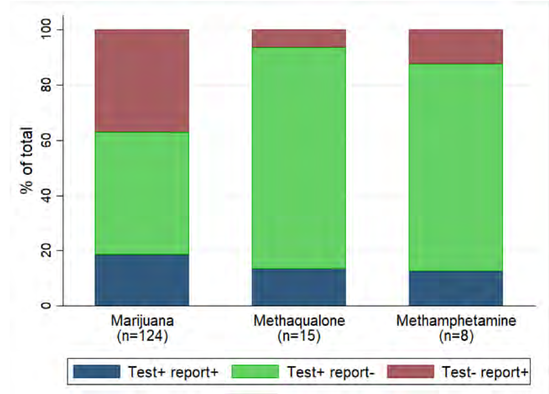
RESULTS

- 515 PHIV+ adolescents (median age at enrolment: 11.9 years; 49% female
- 110 HIV- adolescents (median age at enrolment: 11.7 years; 55% female)
- ***Toxicology screens:***
  - 1491 toxicology screens over a median of 4 years: 5.5% positive for at least one substance
  - Most common substances: marijuana (95% of all positive tests), methaqualone/mandrax (17%) and methamphetamine (9%)
  - Among females, no difference in substance use among PHIV+ versus HIV- adolescents, and no association with age
  - Among males, substance use strongly associated with older age ($p<0.001$), and PHIV+ significantly less likely to screen positive across study visits (adjusted odds ratio: 0.15 [0.04-0.60]; Figure 1)
- ***Self-reported alcohol use***:
  - Among PHIV+, 3% in pre-adolescence to 7% in early and 29% in middle-late adolescence
  - Among HIV-, 5% in pre-adolescence to 18% in early and 54% in middle-late adolescence
- ***Self-reported tobacco use:***
  - Among PHIV+, 0.9% in pre-adolescence to 2% in early and 11% in middle-late adolescence
  - Among HIV-, 0% in pre-adolescence to 3% in early and 10% in middle-late adolescence

RESULTS, *continued*

- ***Self-report versus toxicology screen:***
  - Self-report performed poorly in detecting use of the most common substances (Figure 2)
- ***Viral load among PHIV+:***
  - At enrolment and after 36 and 48 months:
    - 22% had VL>50 copies/mL
    - 13% had VL>1000 copies/mL
  - Adjusting for age and gender, positive toxicology screen was not associated with VL at any time point

Figure 2. Concordance between urine toxicology screen and self-report for the most commonly detected substances



CONCLUSIONS

- Among male PHIV+ adolescents, substance use increased dramatically with older age but was lower than that of same-age, HIV- peers
- Further efforts are needed to:
  - refine self-report measures
  - explore clinical and behavioural effects

ADDITIONAL INFORMATION

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Author contact information: kirsty.brittain@uct.ac.za