Incident HIV, hepatitis C and other sexually transmitted infections in daily and event-driven PrEP users

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Background

There are concerns that HIV pre-exposure prophylaxis (PrEP) use may lead to a rise in sexually transmitted infections (STI). We present interim results of incident HIV, hepatitis C virus (HCV) and bacterial STI among men who have sex with men (MSM) and transgender persons (TGP) in the Amsterdam PrEP demonstration project (AMP/EP).

Objective

We studied the incidence of HIV, HCV and other bacterial STI in MSM and TGP using daily and event-driven pre-exposure prophylaxis (PrEP) at the STI clinic of the Public Health Service of Amsterdam, the Netherlands.

Results

- N=372; median follow-up time: 15 months (IQR 14-18).
- 103 switches of PrEP regimen among 79 participants:
  - n=50 dPrEP to edPrEP; n=53 edPrEP to dPrEP

- HIV incidence: 0.42/100 py (n=2, 95% CI 0.11-1.69)
  - Daily PrEP: 0.57; event-driven PrEP: 0/100 py

- HCV incidence: 1.51/100 py (n=7, 95% CI 0.72-3.17)
  - Daily PrEP: 1.16; event-driven PrEP: 1.68/100 py (p=0.694)

- Incidence of bacterial STI (chlamydia, gonorrhea, syphilis):
  - 97.8/100 py (95% CI 89.3-107.1)
    - Daily PrEP: 112.9; event-driven PrEP: 60.6/100 py
    - Daily vs. event-driven PrEP: IRR 1.86 (95% CI 1.40-2.49)

- No significant change in STI incidence over time (p=0.524)
  - Modeled incidence varied from 92.3 in month 0-3 to 102.8/100 py in month 15-18 (Figure 1)

Methods

At enrolment in the AMP/EP project, participants chose between daily (dPrEP) and event-driven PrEP (edPrEP). Switching was allowed at each quarterly visit.

Participants were tested for HIV, HCV and STI at each study visit and additionally in case of symptoms or partner notification. Incidence rates per 100 person years (py) were calculated overall and in each quarter since PrEP start. The association of time on PrEP with STI incidence was assessed in piecewise exponential survival models. We also compared bacterial STI incidence between PrEP regimens.

Data until June 2017 were analysed.

Conclusions

In this PrEP demonstration project for MSM and transgender persons we found:

1. High HCV incidence following PrEP start
2. High bacterial STI incidence
3. Stable bacterial STI incidence with time on PrEP
4. Bacterial STI but not HCV incidence was higher in daily PrEP than event-driven PrEP users, possibly reflecting differences in sexual behaviour
5. Low HIV incidence

These preliminary data suggest that frequent screening for bacterial STI and HCV should be offered to all PrEP users. The variation between daily and event-driven users needs further exploration.