PrEP in the Netherlands

The introduction of HIV pre-exposure prophylaxis

Hoornenborg, E.

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Chapter 1.2

Outline of thesis
OUTLINE AND CONTENT OF THIS THESIS

After the publication of the efficacy of PrEP to prevent HIV infections in three large randomized controlled trials among MSM in 2012 (iPrEx [1]) and 2015 (PROUD and Ipergay [2,3]), important questions regarding the prevention of HIV infections in the post-trial, “real-world” phase, remained unanswered. This thesis addresses questions regarding implementation of PrEP in the Netherlands, in particular whether the use of PrEP is associated with changes in sexual behaviour and the incidence of STI, including hepatitis C virus (HCV), among MSM and transgender persons using PrEP according to a daily or event-driven regimen. Additional aims of this thesis are to evaluate the attitudes of healthcare professionals towards the implementation of PrEP and to study the adoption of health technology for PrEP monitoring. Data from the AMPrEP project, a PrEP demonstration project in Amsterdam, the Netherlands, were used in all chapters except chapter 2.

CHAPTER 2: OPINIONS OF HEALTHCARE PROVIDERS ON PRE-EXPOSURE PROPHYLAXIS

In chapter 2 of this thesis, “The acceptability of pre-exposure prophylaxis: beliefs of healthcare professionals working in sexually transmitted infections clinics and HIV treatment centers”, we assessed the knowledge and beliefs on PrEP and their associations with acceptability of PrEP among healthcare professionals in the period before PrEP was generally available. In addition, we assessed professionals’ preferred PrEP regimens, attitudes towards providing PrEP for key populations, and reimbursement of PrEP costs.

CHAPTER 3: CHARACTERISTICS OF MEN WHO HAVE SEX WITH MEN AND TRANSGENDER PERSONS STARTING PRE-EXPOSURE PROPHYLAXIS

In chapter 3, two studies are outlined. In chapter 3.1, “Men who have sex with men more often chose daily than event-driven use of pre-exposure prophylaxis: baseline analysis of a demonstration study in Amsterdam”, we described the baseline characteristics of the 376 participants of AMPrEP, their choices of daily versus event-driven PrEP and factors associated with the choice of PrEP regimen. In chapter 3.2, “MSM starting preexposure prophylaxis are at risk of hepatitis C virus infection”, the unexpected high hepatitis C virus prevalence at enrollment in the project, and phylogenetic analysis of HCV strains in HIV-negative MSM starting PrEP, HIV-positive MSM and other non-related risk groups, were reported.
CHAPTER 4: USE OF HEALTH TECHNOLOGY TO MONITOR ADHERENCE OF PRE-EXPOSURE PROPHYLAXIS

In chapter 4, “A mobile application to collect daily data on PrEP adherence and sexual behaviour among MSM: use over time and comparability with conventional data collection”, we assessed the use of this specifically designed application for mobile phones, and compared data collected with the mobile application to self-reported data from a three-monthly questionnaire.

CHAPTER 5: OUTCOMES OF PRE-EXPOSURE PROPHYLAXIS:
SEXUAL BEHAVIOUR AND INCIDENCE OF SEXUALLY TRANSMITTED INFECTIONS, HEPATITIS C VIRUS INFECTION AND HIV

In the last part of this thesis, four studies are included. Chapter 5.1, “Acquisition of wild-type HIV-1 infection in a patient on pre-exposure prophylaxis with high intracellular concentrations of tenofovir diphosphate: a case report”, is the report of failure of PrEP to prevent HIV acquisition in a person who was consistently adherent to daily PrEP. In chapter 5.2, “Change in sexual behaviour after six months of pre-exposure prophylaxis use: results from the Amsterdam PrEP demonstration project”, sexual behaviour was compared between before and six months after initiation of PrEP. Furthermore, factors associated with an increase in sexual risk behaviour were described. In chapter 5.3, “Sexual behaviour and incidence of HIV and STI among MSM using daily and event-driven pre-exposure prophylaxis in Amsterdam: results from the first two years”, we assessed trends over time in sexual behaviour and incidence of HIV and bacterial STI over two years of follow-up. In chapter 5.4, “High incidence of HCV infection in HIV-negative MSM using pre-exposure prophylaxis in Amsterdam: results from a demonstration project”, we assessed the incidence of HCV during the first two years of follow-up after initiation of PrEP, and its associated risk-factors. In addition we evaluated the phylogenetic clustering of HCV strains in HIV-negative MSM starting PrEP, HIV-positive MSM and other HCV risk groups in the Netherlands.

DATA SOURCE: THE AMSTERDAM PREP (AMPREP) DEMONSTRATION STUDY

The Amsterdam PrEP (AMPREP) study in the Netherlands is a demonstration project of daily and event-driven PrEP for MSM and transgender persons at increased risk for HIV infection. The aim of AMPREP was to assess uptake, acceptability and usability of daily and
event-driven PrEP, as part of a comprehensive HIV reduction package offered at a large STI clinic. The dosing regimen is at choice of the participant. Secondary objectives were to evaluate outcomes of PrEP use: changes in sexual behaviour, incidence of other sexually transmitted infections (STI) infection, adherence to PrEP, adverse events, HIV infections and resistance of incident HIV, motives of choice of PrEP regimen, and psychosocial wellbeing, including sexual health. All participants, 374 MSM and 2 transgender persons provided written informed consent. The study was approved by the ethics board of the Amsterdam University Medical Centers, location Academic Medical Center, the Netherlands (NL49504.018.14) and is registered in the online Dutch trial registry (registration number NTR5411; protocol available online) [4]. AMPrEP started in August 2015, follow-up is ongoing and planned to end by 2020. AMPrEP is part of the HIV Transmission Elimination AMsterdam (H-TEAM) initiative, a multidisciplinary and integrative approach to stop the urban epidemic (Hteam.nl).
REFERENCES


