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Potent latency reversal by Tat RNA-containing nanoparticle enables multi-omic analysis of the HIV-1 reservoir

BEST PAPER

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Basic Science

“POTENT LATENCY REVERSAL BY TAT RNA-CONTAINING NANOPARTICLE ENABLES MULTI-OMIC ANALYSIS OF THE HIV-1 RESERVOIR.”

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The long-term persistence of latent HIV in various cell-based anatomical reservoirs in people taking antiretroviral therapy (ART) is a major hurdle to HIV eradication^{1–3}. Strong mitogens, such as phorbol myristate acetate (PMA) and anti-CD3/CD28 antibodies, are the most potent latency-reversing agents (LRAs) available to date, making them the gold standards for in vitro assays that aim to achieve maximal

reactivation^{4,5}. Nevertheless, these molecules severely alter the phenotypic and transcriptomic profiles of the inducible HIV-1 reservoir in its near-native state. As mitogens are not translatable to the clinic due to their toxicity and lack of specificity¹³, drug repurposing studies have identified well-tolerated LRAs for use in humans, such as histone deacetylase inhibitors (HDACi)^{14–22} and protein kinase C (PKC)

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Article



Effect of screening for *Neisseria gonorrhoeae* and *Chlamydia trachomatis* on incidence of these infections in men who have sex with men and transgender women taking HIV pre-exposure prophylaxis (the Gonoscreen study): results from a randomised, multicentre, controlled trial

BEST PAPER

Thibaut Vanbaelen, Achilles Tsoumanis, Eric Florence, Christophe Van Dijck, Diana Huis in 't Veld, Anne-Sophie Sauvage, Natacha Herssens, Irith De Baetselier, Anke Rotsaert, Veronique Verhoeven, Sophie Herrard, Yven Van Herrewege, Dorien Van den Bossche, Jean-Christophe Goffard, Elizaveta Padalko, Thijs Reyniers, Bea Vuylsteke, Marie-Pierre Hayette, Agnes Libois*, Chris Kenyon*

Summary

Background Guidelines recommend screening for *Neisseria gonorrhoeae* and *Chlamydia trachomatis* at three anatomical sites (urethra, anus, and pharynx) every 3 months (3×3) in men who have sex with men (MSM) and transgender women taking HIV pre-exposure prophylaxis (PrEP). We conducted a randomised, multicentre, controlled trial to compare the effect of screening versus non-screening for *N gonorrhoeae* and *C trachomatis* on the incidence of these infections in MSM and transgender women taking PrEP.

Clinical Science

Methods A multicentre, randomised, controlled trial of 3×3 screening for *N gonorrhoeae* and *C trachomatis* versus non-screening in MSM and transgender women taking PrEP. Participants were randomised to the screening or non-screening arm. All participants had a baseline visit in both arms, but results were not provided to the non-screening arm, if asymptomatic. The primary outcome was the incidence of *N gonorrhoeae* and *C trachomatis* infections. The trial was registered with ClinicalTrials.gov, NCT04269434, and is completed.

Findings Between September 2018 and February 2021, 1000 participants were randomised to the screening arm (n=500) and 508 to the non-screening arm. The overall incidence rate of *N gonorrhoeae* and *C trachomatis* was 0.155 cases per 100 person-days (95% CI 0.135–0.175) in the screening arm and 0.255 cases per 100 person-days (95% CI 0.235–0.275) in the non-screening arm. Participants in the non-screening arm had a higher incidence of *C trachomatis* infections and symptomatic *C trachomatis* infections. There were no significant differences in *N gonorrhoeae* infections. Participants in the non-screening arm consumed significantly fewer antimicrobial drugs. No serious adverse events were reported.

Interpretation 3×3 screening for *N gonorrhoeae* and *C trachomatis* in MSM and transgender women taking PrEP had no effect on the incidence of *N gonorrhoeae* infections, but had a higher antibiotic consumption and had no effect on the incidence of *C trachomatis* infections. Further research is needed to assess the impact of screening on the incidence of *C trachomatis* infections in general populations.

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Introduction

International guidelines stipulate that screening programmes should only be introduced once they have met a set of criteria: the benefits should outweigh the harms, screening should be acceptable, and there should be scientific evidence of screening programme effectiveness.¹ No randomised controlled trial (RCT) has evaluated the efficacy of screening for *Neisseria gonorrhoeae* or *Chlamydia trachomatis* in men who have sex with men (MSM) and transgender women.² Two large cluster RCTs have evaluated the effect of screening for *N gonorrhoeae* and *C trachomatis* in general populations.^{3,4} Both found no significant effect of screening on the prevalence of *C trachomatis*. No RCTs have evaluated the efficacy of screening for *N gonorrhoeae* and *C trachomatis* in men who have sex with men and transgender women.² One study that used self-reported data from two surveys in 2010 and 2017

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Doxycycline post-exposure prophylaxis among men who have sex with men and transgender women in Belgium: awareness, use and antimicrobial resistance concerns in a cross-sectional online survey

Thibaut Vanbaelen¹, Anke Rotsaert², Irith De Baetselier¹, Tom Platteau¹, Bernadette Hensen, Thijs Reyniers², Chris Kenyon¹

BEST PAPER

Public Health

► Additional supplemental material is published online only. To view, please visit the journal online (<https://doi.org/10.1136/sextrans-2024-056261>).

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“ DOXYCYCLINE POST-EXPOSURE PROPHYLAXIS AMONG MEN WHO HAVE SEX WITH MEN AND TRANSGENDER WOMEN IN BELGIUM: AWARENESS, USE, AND ANTIMICROBIAL RESISTANCE CONCERNS IN A CROSS-SECTIONAL ONLINE SURVEY ”

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INTRODUCTION

Three randomised controlled trials (RCTs) demonstrated the efficacy of doxycycline post-exposure prophylaxis (doxyPEP) in reducing the

WHY THIS PAPER IS IMPORTANT ON THIS TOPIC
Several randomised controlled trials have shown the efficacy of doxycycline post-exposure prophylaxis (doxyPEP) on the incidence of chlamydia, syphilis and in some instances, gonorrhoea, among men who have sex with men (MSM) and transgender women (TGW). However, the potential for antimicrobial resistance (AMR) due to increased doxycycline consumption is a major concern, leading to some guidelines not recommending doxyPEP. Informal use of doxyPEP has been reported by up to 10% of MSM in countries where it is not recommended.

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