THE PRESENCE OR ABSENCE OF SYMPTOMS AMONG CASES OF URETHRAL GONORRHOEA OCCURRING IN A COHORT OF MEN TAKING HIV PRE-EXPOSURE PROPHYLAXIS IN THE PREPX STUDY

Donovan LD[1,2], Fairley CK[2,3], Aung ET[2,3], Traeger MW[4,5], Wright EJ[4,6,7], Stoové MA[4,5], Chow EPF[2,3,8]

1. Prahran Market Clinic, Melbourne, Victoria, Australia
2. Melbourne Sexual Health Centre, Alfred Health, Melbourne, Victoria, Australia
3. Central Clinical School, Monash University, Melbourne, Victoria, Australia
4. Disease Elimination Program, Burnet Institute, Melbourne, Victoria, Australia
5. School of Public Health and Preventive Medicine, Monash University, Melbourne, Victoria, Australia
6. Department of Infectious Diseases, Alfred Hospital, Monash Central Clinical School, Melbourne, Victoria, Australia
7. Peter Doherty Institute, Melbourne, Victoria, Australia
8. Centre for Epidemiology and Biostatistics, Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, Victoria, Australia

Background:
Previous cross sectional and screening studies report the proportion of symptomatic infection among males testing positive for urethral *Neisseria Gonorrhoeae* are inconsistent. We aimed to provide a more accurate assessment of how often urethral gonorrhoea is symptomatic by using a cohort design with regular asymptomatic screening and symptomatic testing.

Methods:
The cohort includes men who were enrolled in the Pre-Exposure Prophylaxis eXpanded (PrEPX) study at a clinic that was also participating in the Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS) surveillance network. Men were scheduled to attend for PrEP prescription and screening to various clinics in Melbourne on a three monthly basis. All cases of urethral gonorrhoea which had occurred at these clinic sites during the PrEPX study, including cases diagnosed between scheduled study visits, were extracted through ACCESS. We retrospectively reviewed clinical notes corresponding to these episodes to determine how often participants were symptomatic when they tested positive for urethral gonorrhoea.

Results:
There were 225 cases of urethral gonorrhoea included in the analysis. Of these, 176 cases (78%; 95% CI: 72 - 83) were symptomatic on day of testing and 49 (22%; 95% CI: 17 - 28) were asymptomatic on the day of testing. Of 42 participants who were asymptomatic and not treated on the day, 37 returned for treatment. Of those, 9 had developed urethral symptoms after their initial presentations, resulting in an a total of 185 (87%; 95% CI: 82 - 91) symptomatic urethral gonorrhoea cases.

Conclusion:
Our findings that the majority of men with urethral gonorrhoea were symptomatic from a cohort design align with the cross sectional clinic based studies but not the

screening studies. These findings support health promotion to improve symptom recognition and the provision of accessible sexual health care, but also supports the ongoing need for screening in asymptomatic high-risk groups.

CONFLICTS OF INTERESTS:
MT has received speaker's honoraria from Gilead Sciences. MAS has received investigator initiated funding from Gilead Sciences, AbbVie and Bristol Myers Squibb for research unrelated to this work. EJW has received investigator initiated funding from Gilead Sciences and Merck and funding for educational purposes from Gilead Sciences. EPFC has received speaker's honoraria from Gilead Sciences, research grants from Seqirus Australia and Merck in the area of human papillomavirus outside the submitted work.

FUNDING:
CKF is supported by an Australian National Health and Medical Research Council (NHMRC) Leadership Investigator Grant (GNT1172900). EPFC is supported by an NHMRC Emerging Leadership Investigator Grant (GNT1174555). MAS is supported by an NHMRC Senior Research Fellowship (GNT1136970). ETA is supported by Research Training Program (RTP) scholarship from Monash University and Research Entry scholarship from Royal Australasian College of Physician. ACCESS receives core funding from the Australian Department of Health. The Burnet Institute gratefully acknowledges support from the Victorian Operational Infrastructure Fund.

AUTHORS' CONTRIBUTIONS:
EPFC and CKF conceived and designed the study. EPFC, LCD, ETA, and CKF designed the study materials. LCD and ETA performed the clinical audit. LCD performed the statistical analyses and wrote the first draft of the manuscript. EPFC oversaw the study. MT contributed to data duration. MAS helped lead the quantitative data collections for the PrEPX study and contributed to drafting the manuscript. All authors were involved in revising the manuscript for important intellectual content and approved. EJW was the Principal Investigator of the PrEPX study and contributed to drafting this manuscript.

Corresponding author: Dr Lucy Donovan
Melbourne Sexual Health Centre, 580 Swanston Street, Carlton, VIC 3053, Australia
Tel: +61 3 9641 6200; Email: Lucy_donovan@hotmail.com
Affiliations: Previously worked as a general practitioner at Prahran Market Clinic and currently working as a Sexual Health Registrar at Melbourne Sexual Health Centre.

Alternate Corresponding author: Associate Professor Eric Chow
Melbourne Sexual Health Centre, 580 Swanston Street, Carlton, VIC 3053, Australia
Tel: +61 3 9641 6233; Email: eric.chow@monash.edu