

DOXYCYCLINE PREP AND PEP USE AND THE INCIDENCE OF BACTERIAL SEXUALLY TRANSMITTED INFECTIONS (STIS): AN OBSERVATIONAL ANALYSIS OF THE GOGOVAX TRIAL

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Background: Doxycycline pre- and post-exposure prophylaxis use (Doxy PrEP/PEP) has been demonstrated to be efficacious in preventing some bacterial STIs. We report Doxy PrEP/PEP use and associations with incident STIs in an observational analysis of the GoGoVax randomised clinical trial.

Methods: Participants were gay and bisexual men (GBM) aged 18-50 years. After the first dose of vaccine or placebo, they attended quarterly follow-up visits over two years with recording of doxycycline use (including indication and number of days received) and testing for gonorrhoea, chlamydia, and syphilis. Information on recent sexual behaviour, including number of sexual partners, condom use, and group sex, was also collected.

Results: In 2021-2023, 654 participants were recruited. During follow-up, the proportion of participants reporting recent doxycycline use varied around 20%: about four-fifths for 1-7 days of use (82%) and for chlamydia treatment (70%). Overtime, there was increasing Doxy PrEP/PEP use from 0% to 6% ($p < 0.001$) between Month 3 and 24 (85% as PEP). The incidence for chlamydia, gonorrhoea, and syphilis was 50.3 per 100 person-years (95% confidence interval (CI): 46.2-54.8), 42.3 (95% CI: 38.6-46.5), and 7.7 (95% CI: 6.2-9.6), respectively. Doxy PrEP/PEP use was associated with a significantly reduced risk for chlamydia (incidence rate ratio (IRR): 0.25, 95% CI: 0.08-0.74) and increased risk for gonorrhoea (IRR 1.82, 95% CI: 1.22-

2.71), with no significant association for syphilis (IRR: 0.55, 95% CI: 0.08-3.98). After adjustment for sexual behaviour, the association between Doxy PrEP/PEP use and chlamydia remained significant (aIRR: 0.21, 95% CI: 0.08-0.64), but not for gonorrhoea (aIRR: 1.42, 95% CI: 0.93-2.18) and syphilis (aIRR 0.50, 95% CI: 0.07-3.72).

Conclusion: Doxycycline PrEP/PEP use was uncommon but increasing among GBM in the trial. Consistent with other trial data, chlamydia incidence was significantly reduced in those who used Doxy PrEP/PEP. Based on small numbers of Doxy PrEP/PEP users, syphilis incidence was non-significantly reduced.

Disclosure of Interest Statement:

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