BACTERIAL SEXUALLY TRANSMITTED INFECTION PREVENTION AT HEALTH CENTERS

NATIONAL LGBTQIA+ HEALTH EDUCATION CENTER
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Bacterial sexually transmitted infections (STIs) are common in the United States, with more than 1.5 million chlamydia, more than 500,000 gonorrhea, and more than 190,000 syphilis cases reported in 2024.[1] STIs disproportionately affect people in certain sexual networks, including men who have sex with men (MSM), and where access to care or health-seeking behavior are compromised.[2] Numerous strategies, including condom use, have been shown to reduce the likelihood of bacterial STI transmission or acquisition.[3] More recently, the STI prevention toolkit has expanded with the addition of doxycycline post-exposure prophylaxis, an evidence-based intervention that can significantly reduce chlamydia, gonorrhea, and syphilis infections among MSM and some other populations.[4] Doxycycline post-exposure prophylaxis consists of a single dose of doxycycline, 200 mg, taken by mouth within 72 hours after condomless sex. This publication will focus on the evidence for doxycycline post-exposure prophylaxis and its implementation at health centers.

2024

BACTERIAL SEXUALLY TRANSMITTED INFECTIONS IN THE UNITED STATES

1,500,000
CHLAMYDIA

500,000
GONORRHEA

190,000
SYPHILIS

ELIGIBILITY

for doxycycline post-exposure prophylaxis

CDC recommends consideration of doxycycline post-exposure prophylaxis for MSM and some other populations with a history of at least one bacterial STI in the past 12 months, because there is specific evidence of benefit in clinical trials.[4] CDC does not make a recommendation for doxycycline post-exposure prophylaxis for other people who may be at risk for STIs, due to a lack of data.

EVIDENCE

for doxycycline post-exposure prophylaxis

Four randomized trials have assessed the efficacy of doxycycline post-exposure prophylaxis for STI prevention.[5–8]

Three of them, all of which primarily enrolled MSM, demonstrated reductions in bacterial STIs with doxycycline post-exposure prophylaxis.[5–7] In general, these studies showed significant protection against chlamydia and syphilis; the impact of doxycycline post-exposure prophylaxis on gonorrhea was variable, likely due to different levels of baseline doxycycline resistance in *Neisseria gonorrhoeae* in the different study settings. Following the publication of these randomized trials, multiple studies have upheld the benefits of doxycycline post-exposure prophylaxis among MSM in community settings.[9,10]

One randomized trial, performed with women in sub-Saharan Africa, did not show a benefit to doxycycline post-exposure prophylaxis.[8] However, adherence to doxycycline in this study was low. Whether doxycycline would prevent bacterial STIs in women with high adherence is unknown.

ADVERSE EFFECTS

of doxycycline post-exposure prophylaxis

Doxycycline is a longstanding and widely-used antibiotic with a well-established safety profile. Common side effects include gastrointestinal upset and sun sensitivity.[4] In randomized trials of doxycycline post-exposure prophylaxis, serious adverse events were not more common in participants who received doxycycline post-exposure prophylaxis compared to those who did not.[5–8]

Antimicrobial resistance is a significant concern with the use of doxycycline post-exposure prophylaxis. Randomized trials of doxycycline post-exposure prophylaxis have painted a mixed picture of the intervention's impact on antimicrobial resistance. For example, in one randomized trial, infection with *Neisseria gonorrhoeae* and colonization with *Staphylococcus aureus* – a common pathogen that can cause skin and soft tissue infections and, more rarely, invasive infections – were less common in those assigned to doxycycline post-exposure prophylaxis.[7] However, when these bacteria were present, they were more likely to be resistant to doxycycline. Another study showed an increase in doxycycline resistance in *Neisseria gonorrhoeae* with the advent of doxycycline post-exposure prophylaxis.[11]

IMPLEMENTATION

of doxycycline post-exposure prophylaxis

Doxycycline post-exposure prophylaxis can be readily implemented in health centers, including within primary care and sexual health settings. Components of implementation include:

Identifying people who may benefit

✔ MSM with at least one bacterial STI in the past 12 months are most likely to benefit. Clinicians may consider counseling patients about doxycycline post-exposure prophylaxis with any new diagnosis of chlamydia, gonorrhea, or syphilis.

Engaging in shared decision-making around doxycycline post-exposure prophylaxis

✔ CDC recommends that clinicians counsel eligible patients about the benefits and harms of doxycycline post-exposure prophylaxis, as well as administration of the medication and potential drug-drug and drug-food interactions.[4] Clinicians should also counsel patients to use doxycycline post-exposure prophylaxis only for STI prevention and not other purposes (e.g., a cough or fever for which they have not sought medical evaluation).

Prescribe doxycycline post-exposure prophylaxis

✔ Through shared decision-making, clinicians and patients should determine the number of doses likely needed to last until the next follow-up appointment, with the understanding that additional doses can be requested if needed.

Screen for bacterial STIs at least every 3-6 months

✔ Screening consists of testing for gonorrhea and chlamydia at anatomic sites of exposure and serology for syphilis.[4]

Provide associated services, if applicable

✔ For patients not known to have HIV, screening for HIV and consideration of HIV pre-exposure prophylaxis are warranted. Other services may include screening for hepatitis B and C and administration of sexual health vaccines (e.g., hepatitis A, hepatitis B, mpox).[4]

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