Practice Alert: CDC Guidelines on Doxycycline for STI Postexposure Prophylaxis

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The Centers for Disease Control and Prevention (CDC) recently released guidelines on the use of doxycycline for postexposure prophylaxis of gonorrhea, chlamydia, and syphilis.[1] This is an important document given the decades-long trend of increasing incidence of these three sexually transmitted infections (STIs) and the current lack of a vaccine. The CDC recommends that clinicians discuss prescribing doxycycline postexposure prophylaxis to prevent bacterial STIs with men who have sex with men (MSM), and transgender women, who have had a bacterial STI in the past year.

The epidemiology of gonorrhea, chlamydia, and syphilis differ, reflecting different sexual networks. The most recent complete data are from 2022.[2] In that year, the incidence rate of chlamydia was 495.0 per 100,000 people (363.7 per 100,000 men, 621.2 per 100,000 women). The highest incidence was in those 15 to 24 years of age. The incidence rate for gonorrhea was 194.4 per 100,000 people (236.3 per 100,000 men, 152.1 per 100,000 women). The age group with the highest incidence of gonorrhea was slightly older than for chlamydia at 20 to 29 years. Syphilis had an incidence rate of 62.2 per 100,000 people. Primary and secondary syphilis, which indicate recent infection, had rates of 26.8 per 100,000 men and 8.7 per 100,000 women, with the highest rates occurring in those 25 to 34 years of age. Infections in MSM are the largest contributors to syphilis trends and important contributors to gonorrhea trends.

Changes in social networking due to the COVID-19 pandemic altered the trajectory of these infections. Between 2021 and 2022, the rate of chlamydia increased slightly by 0.3%, gonorrhea declined by 8.7%, and syphilis increased by 17%. Of particular concern, the rate of congenital syphilis increased by 30.6%, with 3,755 cases reported in 2022.[2] Congenital syphilis is a preventable condition with early and appropriate prenatal care.[3]

Doxycycline, 200 mg, administered within 24 hours and no later than 72 hours after condomless oral, vaginal, or anal sex has been shown to prevent gonorrhea, chlamydia, and syphilis. However, studies included predominantly HIV-positive MSM and transgender women.[4-6] Although the magnitude of the protection differed by study, in one study, the number needed to treat to prevent one STI per 3 months was 4.7.[5] In another study, a mean of 43 doses of postexposure prophylaxis prevented 1.3 infections in 1 year.[6]

Because of the lack of evidence in other populations and a concern about possible antibiotic resistance with long-term, widespread use, the CDC recommends doxycycline postexposure prophylaxis only for MSM, and transgender women, who have received a bacterial STI diagnosis in the previous year. Eligible patients should be counseled about the possible benefits of doxycycline postexposure prophylaxis and provided with a prescription for self-administration that lasts until the next planned visit. Practical tips for maximizing benefit and minimizing harm from doxycycline include:

- No more than 200 mg should be taken in 24 hours.
- Doxycycline should be taken on a full stomach with a full glass of liquid, and the patient should avoid lying down for 1 hour.
- Doxycycline should not be taken within 2 hours of consuming dairy products, antacids, or other products containing calcium.
- Check for potential interactions with other medications the patient is currently taking.

In addition to counseling about and prescribing doxycycline for these high-risk populations, family physicians should offer screening for STIs, including HIV; screening for hepatitis B and C; and counseling about other preventive measures, such as condom use and HIV preexposure prophylaxis. Family physicians should also provide all indicated vaccines, including those to prevent hepatitis A and B, human papillomavirus, mpox (monkeypox), and meningococcal meningitis.

Although doxycycline postexposure prophylaxis recommendations target a limited, defined population, the CDC also states that physicians should use their clinical judgment and shared clinical decision-making to decide on doxycycline use with other patients at high risk of STIs.

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