Doxycycline Post-Exposure Prophylaxis to Prevent Bacterial Sexually Transmitted Infections

September 2023

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| Available formulations | • Doxycycline hyclate delayed-release 200 mg oral tablet  
                          • Doxycycline hyclate or monohydrate immediate-release 100 mg oral capsule or tablet  
                            (2 capsules or tablets taken together for a total of 200 mg)  
                            • The immediate-release formulations are more widely available and usually cost less than the delayed-release formulation. |
| Administration | • As doxy-PEP, 200 mg of doxycycline should ideally be taken within 24 hours after condomless sex, up to 72 hours maximum.  
                          • No more than 200 mg of doxycycline should be taken in a 24-hour period.  
                          • Milk and vitamins containing positive cations (e.g., calcium, zinc, magnesium) should be avoided within 2 hours of taking doxycycline, because these interfere with doxycycline absorption and may lower doxycycline levels, potentially reducing efficacy. |
| Contraindications, drug-drug interactions, and dose adjustments | • Doxycycline should not be used as PEP concurrently with other doxycycline therapy (or any other tetracycline-class antibiotic) for treatment or prevention of a health condition (e.g., acne, rosacea, malaria prophylaxis).  
                          • No significant drug-drug interactions exist between doxycycline and ARVs used for HIV treatment or PrEP.  
                          • No known drug reactions exist between doxycycline and gender-affirming hormone therapies.  
                          • No doxycycline dose adjustments are indicated for patients with renal dysfunction.  
                          • Doxycycline is generally contraindicated during pregnancy because of potential adverse effects on the fetus [FDA 2016]. |
| Adverse effects | • GI adverse effects are common; taking doxycycline with food may help alleviate nausea or GI upset. Symptoms including nausea, vomiting, and reflux can be severe enough to require cessation of doxycycline.  
                          • Esophageal injury and irritation can occur. Doxycycline should be taken with an 8-oz glass of water and the individual should remain upright for 30 minutes to 1 hour after dosing.  
                          • Skin photosensitivity and phototoxicity can occur; wearing sunscreen, limiting sun exposure, and avoiding tanning beds can help prevent sunburn and other skin injury.  
                          • Intracranial hypertension is a rare but serious adverse effect. Refractory headaches or vision changes should be evaluated promptly by a clinician.  
                          • Doxycycline use may select for antibiotic-resistant organisms, which can cause infections in some circumstances and can disrupt the microbiome. |
| Supply of doxy-PEP medications | • For patients taking HIV PrEP, consider prescribing a doxy-PEP supply equal to the supply of HIV PrEP medications for patient convenience (e.g., 90 days).  
                          • For patients not taking HIV PrEP, a 90-day supply is suggested.  
                          • Regarding dose quantity:  
                            − For delayed-release doxycycline 200 mg tablets, the quantity dispensed should not exceed 90 doses per 3 months.  
                            − For immediate-release 100 mg capsules or tablets, the quantity dispensed should not exceed 180 doses per 3 months.  
                            − The quantities above are the maximum number to be dispensed; many patients will not need such a large quantity. Shared decision-making can determine the lowest quantity needed based on the frequency of condomless sexual encounters during a 3-month interval. |
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| Follow-up and laboratory monitoring   | • Engage patients taking doxy-PEP in ongoing comprehensive sexual health services that include STI screening, HIV PrEP, immunizations, and other health promotion strategies as indicated [a].  
• At least every 3 months:  
  – Screen for syphilis, HIV if not previously diagnosed, gonorrhea, and chlamydia (including extragenital testing when indicated), ensuring that tests have been obtained before providing a doxy-PEP prescription refill.  
  – Offer HIV PrEP or HIV treatment as needed.  
  – Assess for ongoing doxy-PEP needs and continue in shared decision-making as new evidence becomes available.  
• The doxycycline [package insert] advises periodic monitoring of hepatic function, renal function (specifically BUN), and CBC with prolonged therapy. It is currently unclear whether this routine monitoring is necessary for doxy-PEP [b]. |
| Key points for patient education      | • Medication administration instructions and contraindications: See above.  
• Protective effect: Doxy-PEP is not 100% effective and is not effective against all STIs. For cisgender men and transgender women at risk of STIs who were engaged in routine sexual healthcare, doxy-PEP reduced the likelihood of an STI diagnosis by >50%. Evaluation by a clinician after a possible STI exposure is necessary to determine whether treatment is needed.  
• Adverse effects: Doxycycline can cause GI adverse effects, photosensitivity, and esophageal irritation, which can be mitigated using strategies noted above. Long-term doxycycline use may increase the risk of developing an antibiotic-resistant infection. The potential long-term effects of doxy-PEP use are not known at this time.  
• Ongoing screening: Screening for STIs every 3 months is necessary while taking doxy-PEP. Routine HIV testing should continue in individuals at risk of HIV. Yearly blood tests (CBC, liver and kidney tests) are recommended to monitor for potential adverse antibiotic effects. |

**Abbreviations:** ARV, antiretroviral medication; BUN, blood urea nitrogen; CBC, complete blood count; doxy-PEP, doxycycline post-exposure prophylaxis; GI, gastrointestinal; PrEP, pre-exposure prophylaxis; STI, sexually transmitted infection.

**Notes:**


b. The DoxyPEP study protocol included yearly monitoring of these tests, informing the currently recommended strategy.

**Reference**

FDA. Doxycycline hyclate delayed-release tablets, for oral use. 2016 Apr.  
[https://www.accessdata.fda.gov/drugsatfda_docs/label/2016/90431Orig1s010lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2016/90431Orig1s010lbl.pdf) [accessed 2023 June 12]