

An old antibiotic may get new life as an STI prevention pill

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The United States is set to roll out a powerful new weapon in the long fight against sexually transmitted infections: a decades-old antibiotic repurposed as a preventative pill.

DoxyPEP, or doxycycline used as a post-exposure prophylaxis, has been found to significantly cut the risk of chlamydia, gonorrhea and syphilis when used after condomless sex.

The Center for Disease Control and Prevention (CDC), which is developing national guidance for clinicians, will need to weigh the need to contain record high rates of STIs impacting millions of Americans against potentially giving rise to more antibiotic-resistant strains.

"Innovation and creativity matter in [public health](#), and more tools are desperately needed," senior CDC official Jonathan Mermin told AFP.

But the recommendations, set for publication this summer, will remain narrow in scope.

They will likely target only the most at-risk groups of gay men and transgender women with histories of prior [infection](#).

As word spreads, some clinics are already prescribing DoxyPEP.

Malik, a 37-year-old man in Washington, said his doctor recently told him he could start using doxycycline as a "morning-after pill" following risky sex, something he's had to do twice—including after a partner did not warn him he had removed his condom.

Two-thirds reduction

Reported cases of the three bacterial infections grew to 2.5 million in the United States in 2021, following about a decade of growth.

Several issues are behind the rise: fewer people are using condoms since the advent of PrEP—daily pills that significantly reduce chances of contracting HIV.

And people who are on PrEP are recommended to undergo screening every three months, likely increasing the identification of infections.

Then there is the basic epidemiological fact that the greater the number of people infected, the more they can further infect.

Researchers have found DoxyPEP efficacious in three of four trials.

"What we found was there was about a two-thirds reduction in sexually transmitted infection every three months," Annie Luetkemeyer, who co-lead a US trial, told AFP.

The physician-scientist at the University of California, San Francisco recruited some 500 people in San Francisco and Seattle among communities of men who have sex with men and transgender women.

Efficacy was greatest for chlamydia and syphilis, both of which were reduced by about 80 percent, while for gonorrhea it was about 55 percent. There were few side effects.

Antibiotic resistance

Broadening access to doxycycline has prompted concerns about causing antibiotic resistance, particularly in gonorrhea, which is fast mutating.

But early research hasn't shown cause for alarm.

Connie Celum of the University of Washington, who co-lead the US study, told AFP researchers tested gonorrhea samples from breakthrough infections in the DoxyPEP group and compared them to the group who didn't receive the pill.

Though they found the rate of resistant gonorrhea slightly higher in the

DoxyPEP group, she says the finding could simply mean the pill is less effective against already resistant strains, rather than causing that resistance.

DoxyPEP could even boost responsible antibiotic stewardship—cutting the incidence of infections, thus also cutting need for antibiotic treatment.

If it slashed gonorrhea cases by some 50 percent, it could reduce the number of people requiring antibiotic treatment with the current frontline treatment drug, ceftriaxone, which doctors are eager to preserve.

Longer term study is required, on both impacts on STIs but also "bystander" bacteria such as *Staphylococcus aureus*, which live inside people's noses but sometimes cause serious infections.

'Additional tool'

Malik said that while he is glad he could use DoxyPEP as a last resort, he wishes more men were willing to use condoms. Since moving to America from South Asia, he gets relatively little interest on dating app Grindr when he says he's not willing to have condomless sex.

But Stephen Abbott—a doctor at Washington's Whitman-Walker clinic who prescribes and uses DoxyPEP—said it's crucial to meet people where they are.

"From speaking with patients, and being part of the community that's now on PrEP... I think the age of prevention through condoms is fading," he told AFP.

A 42-year-old man in London who runs a cultural organization told AFP

that word had spread about DoxyPEP through the international gay party circuit and he had procured a supply on the black market and through a partner who buys in bulk in Mexico.

It had largely worked for him, though he did have one breakthrough infection of throat gonorrhoea. He said he was looking forward to the United Kingdom adopting similar guidance so that people have the right information and aren't left to guess at the right dosage.

For Luetkemeyer, DoxyPEP won't be "the answer" to the STI epidemic, and there is considerable interest in the development of a gonorrhoea vaccine.

"But I'm optimistic... I think this is an additional tool," she said.

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