A vaginal gel designed to reduce HIV infection may provide a surprisingly effective protection from genital herpes infection as well, reports a recent study published in *Cell Host & Microbe*.

The active ingredient responsible for these beneficial effect is tenofovir, an antiviral drug developed by Gilead Pharmaceuticals over a decade ago to fight HIV, the virus that causes AIDS. Among participating women in South Africa, HIV infections were lowered by 39 percent when using the gel an impressive finding in and of itself. But the researchers were surprised to find that the gel had an even greater effect on a woman's risk of contracting herpes, reducing those infections by 51 percent. And even more promising, among women who used the gel most consistently, the reductions in infections were even larger: Fifty-four percent for HIV and 62 percent for herpes.

Affecting 20 percent of adults who are sexually active in the United States, genital herpes is a serious concern. A method of protection against infection with the herpes virus would help reduce the burden of this blister-inducing and often painful disease. Herpes is also a concern because it can pave the way for more dangerous sexually transmitted diseases, such as HIV or syphilis; and, although it's possible to control the symptoms of genital herpes with medication, the illness is not curable. Since the herpes virus can be spread through skin-to-skin contact, using a condom is only effective against infection about half of the time, so an effective medical prevention is even more essential. Also of major importance, the gel is under the control of the woman in a relationship, allowing her to protect herself from sexually transmitted infection even if her partner refuses to use protection.

The most recent study of tenofovir examined the mechanism by which it prevents herpes infection. Researchers knew that the drug inhibited a key enzyme necessary for HIV to propagate and destroy an immune cell's function. However, after noting the drug's efficacy against herpes, researchers came to better understand how it works. As ACSH's Dr. Josh Bloom explains,

Although tenofovir is only a weak inhibitor of a particular enzyme required for herpes replication, and therefore is ineffective when taken in pill form, when the drug is used in a gel and applied directly to the affected area, it becomes effective. The concentrations of this drug are then high enough to successfully inhibit the replication of this virus and, in many cases, to prevent infection.
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