

AIDS 2010: microbicide breakthrough

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In what is being called a major breakthrough, a trial of a vaginal microbicide gel in South African women has shown for the first time that such a product can be effective against HIV infection.

The results of the [CAPRISA \[1\]](#) 004 trial were presented today to the XVIII International AIDS Conference in Vienna, Austria, drawing rapturous applause and generating new optimism about HIV prevention technologies. While the results of the trial were modest – there was a reduced HIV infection rate of about 50 percent after one year, and 39 percent when the trial ended after 30 months – they represent the first proof of concept that vaginal and rectal microbicides have the potential to substantially impact HIV transmission. The gel also reduced transmission rates of HSV-2 – the [virus \[2\]](#) A small infective organism which is incapable of reproducing outside a host cell. that causes genital herpes – by 51 percent.

The trial examined the [effectiveness \[3\]](#) (Of a drug or treatment). The maximum ability of a drug or treatment to produce a result regardless of dosage. A drug passes efficacy trials if it is effective at the dose tested and against the illness for which it is prescribed. In the standard procedure, Phase II clinical trials gauge efficacy, and Phase III trials confirm it. of a gel containing one percent tenofovir, an [antiretroviral \[4\]](#) A medication or other substance which is active against retroviruses such as HIV. drug already in widespread use for the treatment of HIV infection. The 889 participants in the South African trial were randomly assigned to two equal-sized groups, one of which received the tenofovir gel and the other an inactive [placebo \[5\]](#) A dummy medical treatment, designed to have no pharmacological effect, administered to the control group of a clinical trial.. Women in the trial were asked to use the gel before and after sex, and were monitored to determine HIV transmission rates as well as side effects, adherence and development of antiretroviral [resistance \[6\]](#) HIV which has mutated and is less susceptible to the effects of one or more anti-HIV drugs is said to be resistant..

There were 38 infections in the tenofovir [arm \[7\]](#) Any of the treatment groups in a randomised trial. Most randomised trials have two "arms," but some have three "arms," or even more., compared to 60 in the placebo group, which translated to a 39 percent reduction in HIV infections among those taking the active preparation, but was even more effective (a 58% reduction in transmission risk) among those who had better adherence to the instructions given in the trial. Women were asked to apply the gel up to 12 hours before having sex, and again as soon as possible within 12 hours after sex.

Don Baxter, Executive Director of the Australian Federation of AIDS Organisations ([AFAO \[8\]](#) Australian Federation of AIDS Organisations. AFAO is the peak non-government organisation representing Australia's community-based response to HIV/AIDS. AFAO's work includes education, policy, advocacy and international projects.), who was in Vienna for the announcement, said the results were significant, while acknowledging that it was too early to say what the impact of the discovery would be.

"It does indicate this concept will work, to some degree at least, in vaginal sex, and it is a strong sign in favour of continuing rectal microbicide trials," he said.

Given the limited efficacy found in the trial, Baxter noted that if such a product were made available, it would need to be used in combination with condoms, not as a substitute for condom use, and without further investigation its usefulness in anal sex would not be known.

Baxter believes that the development of a vaginal microbicide would be relevant to Australia, "particularly in some aboriginal communities where women don't have a great deal of power in negotiating sex, and [with further research] perhaps for gay men in about five years' time."

- [conference reports](#)
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Links:

[1] <http://www.caprisa.org/>

[2] <http://www.napwa.org.au/glossary/term/125>

[3] <http://www.napwa.org.au/glossary/term/486>

[4] <http://www.napwa.org.au/glossary/term/122>

[5] <http://www.napwa.org.au/glossary/term/106>

[6] <http://www.napwa.org.au/glossary/term/109>

[7] <http://www.napwa.org.au/glossary/term/470>

[8] <http://www.napwa.org.au/glossary/term/385>