Vaginal Ring May Protect Against HIV, Herpes, HPV and Pregnancy

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A multipurpose vaginal ring has shown promise in protecting against HIV, genital herpes, human papillomavirus (HPV) and pregnancy in a primate study, HIVandHepatitis.com reports. Researchers presented their findings of a study of the rings among rhesus macaques at the HIV Research for Prevention meeting in Cape Town, South Africa.

The multipurpose ring contains the experimental non-nucleoside reverse transcriptase inhibitor MIV-150, zinc acetate and a seaweed derivative called carrageenan. This combination is known as MZC. Previous research found that an MZC gel lowered the risk of herpes simplex type 2 (HSV-2) and SHIV, an HIV-like human-monkey hybrid virus, among primates. Additionally, carrageenan gel has been found to reduce the risk of HPV among mice. The multipurpose ring in this new study also contains the hormonal contraceptive levonorgestrel to reduce the risk of pregnancy.

In the study, investigators inserted into the monkeys' vaginas rings that contained either MZC, levonorgestrel, MZC plus levonorgestrel (all four elements of the multipurpose ring), or a placebo. Over a 28-day period, researchers tested the levels of MIV-150, carrageenan and levonorgestrel in the monkeys' blood and swabs from their vaginas. They exchanged the rings after 21 days and exposed the primates to SHIV and HSV-2 on days 7, 10, 14 and 17 after inserting the ring.

Tests of the monkeys' blood and vaginal swabs showed that MIV-150 was detectable an hour after inserting the rings. Levels peaked after one to three days and dropped off from day seven through to day 28. Twenty-four hours after the investigators removed the rings the MIV-150 levels became undetectable. Tests of the vaginal swabs showed that carrageenan was detectable at day three, all the way through to the removal of the rings.

There is preliminary data showing that the multipurpose ring containing all four preventative elements kept 11 out of 12 monkeys from acquiring SHIV. Meanwhile, all four monkeys fitted with the rings containing only levonorgestrel became infected, as did two of the four monkeys given the placebo rings.

The MZC and MZC plus levonorgestrel rings reduced the likelihood of becoming infected with HSV-2 by about 30 percent. As for the monkeys that did acquire genital herpes, the ring lowered the rate of viral shedding.

To read the HIVandHepatitis story, click here.

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