Post-Exposure Microbicide Gel Shows Promise in Monkeys

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An Isentress (raltegravir)-containing microbicide gel prevents vaginal transmission of the simian cousin of HIV, SIV, when used as a post-exposure prophylaxis (PEP), The New York Times reports. Publishing their findings in Science Translational Medicine, researchers sought an alternative to the traditional reverse transcriptase inhibitors as an active ingredient in microbicides. They theorized that, because integrase inhibitors attack the virus during a later phase in its life cycle, a microbicide containing an antiretroviral from this drug class could be used after sex instead of before. Furthermore, unlike the common microbicide ingredient Viread (tenofovir), which must undergo chemical changes in the body before it can be effective in fighting the virus, integrase inhibitors act immediately.

First the researchers determined that the virus conducts the integration phase of its life cycle about six hours after infecting a cell, thus theoretically opening a window of time during which to introduce an integrase inhibitor.

Then the researchers applied a vaginal microbicide gel containing the integrase strand transfer inhibitor L-870812 to three macaque monkeys 30 minutes before a vaginal exposure to SIV. Two of the three monkeys were protected from transmission.

Next they used a gel containing a 1 percent concentration of the integrase inhibitor Isentress. Applied three hours after vaginal exposure to SIV, this gel protected five out of six of the monkeys against the virus. All monkeys receiving a placebo gel contracted SIV.

The researchers were unable to determine the reason why the two monkeys in the respective study groups became infected.

The researchers concluded that the study provided a proof of concept that a PEP application of a microbicide gel containing an integrase inhibitor could protect against SIV when applied within three hours of vaginal exposure to the virus.

To read the New York Times story, click here.

To read the study abstract, click here.