New Vaccine Clears AIDS-Causing Virus in Monkeys

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Renewing hopes in a repeatedly demoralized field of research, a new vaccine appears to have completely cured monkeys of simian immunodeficiency virus (SIV), an AIDS-causing primate cousin of HIV, reports The New York Times. Publishing their findings in the journal Nature, researchers at Oregon Health & Science University (OHSU) created a vaccine by engineering the cytomegalovirus (CMV), which is a common virus found in most humans and primates, to express SIV proteins.

After vaccinating 16 rhesus macaque monkeys, the scientists then infected them with a highly aggressive form of SIV. Nine of the monkeys gradually cleared the virus—the first time this feat has ever been achieved in this avenue of HIV study. After the investigators ground up all of the monkeys' organs and analyzed 240 samples from each to look for virus, finding none, they pronounced the monkeys cured.

"To date, HIV infection has only been cured in a very small number of highly publicized but unusual clinical cases in which HIV-infected individuals were treated with anti-viral medicines very early after the onset of infection or received a stem cell transplant to combat cancer," Louis Picker, MD, associate director of the OHSU Vaccine and Gene Therapy Institute, said in a release, referring to the Mississippi baby, the Berlin Patient and the Visconti cohort. "This latest research suggests that certain immune responses elicited by a new vaccine may also have the ability to completely remove HIV from the body."

The vaccine succeeded in prompting a sustained immune response from "effective memory" T-cells, or CD8 cells, that hunt down and kill SIV-infected cells. These cells operated in an atypical state of mid-activation, refraining from eliciting the kind of elevated immune response that causes potentially damaging inflammation.

Because the vaccine proved successful in only about half the cases, the investigators figure it might work best when combined with other arsenals, such as an HIV antibody-generating vaccine. It is also possible that the vaccine might work to help eliminate the viral reservoir among those who are infected.

A human trial of the vaccine will likely take as long as three years to begin.

To read the New York Times story, click here.

To read the study abstract, click here.

To read a release on the vaccine trial, click here.

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http://beta.docker.poz.com/article/HIV-vaccine-24520-9102