Tweak to Broadly Neutralizing HIV Antibody Makes It Last Longer

Researchers are trying to harness the power of certain antibodies as long-acting injectable forms of HIV treatment or PrEP.

February 27, 2018 By Benjamin Ryan

Researchers have found that a slight modification to the broadly neutralizing HIV antibody known as VRC01 lengthens its staying power in the body. This tweak could lower the cost and reduce the necessary frequency of injections of the long-acting antibody for use as HIV treatment or for prevention of the virus.

Publishing their findings in PLOS Medicine, researchers studied the effects of the modified antibody, called VRC01LS, in a 48-week Phase I dose-escalation study among HIV-negative adults between ages 21 and 50. The trial was geared to look primarily at the safety and tolerability of injections of the modified antibody and additionally to examine how the body metabolized VRC01LS and how well the antibody neutralized HIV in laboratory experiments.

The study participants received the antibody under one of four scenarios: a single intravenous (into the vein) infusion dosed at 5, 20 or 40 milligrams per kilogram of body weight; intravenous infusions of 20 mg per kg given three times at 12-week intervals; one subcutaneous (under the skin) injection dosed at 5 mg per kg; or three subcutaneous injections dosed at 5 mg per kg given at 12-week intervals.

The study enrolled partcipants between November 2015 and August 2017. The published report focuses on safety data regarding the first 37 participants who received VRC01LS.

VRC01LS proved safe among the study members. None of the participants experienced serious adverse health events or toxicities that would suggest the dose of the antibody should be limited. The most common adverse health events were mild malaise (an overall sense of unwellness) and myalgia (body pain). The study investigators judged six adverse health events as possibly related to the administration of VRC01LS; all were mild and resolved during the study.

Findings about the body's metabolism of the antibody were based upon the first 25 participants to finish their schedule of evaluations. The half-life of VRC01LS, the researchers found, was four times greater than that of standard VRC01.

Following drawing blood samples from the participants after they had received the antibody, the researchers exposed those samples to HIV in the laboratory and found that VRC01LS was just as effective as VRC01 at neutralizing various strains of the virus throughout the study period.

Numerous trials of VRC01LS as well as other broadly neutralizing antibodies that have been similarly modified for use as HIV treatment or pre-exposure prophylaxis (PrEP) are either in the planning stages or already under way.

To read a press release about the study, click here.

To read the study, click here.

© 2026 Smart + Strong All Rights Reserved.

http://beta.docker.poz.com/article/tweak-broadly-neutralizing-hiv-antibody-makes-last-longer