Therapeutic HIV Vaccine Achieves 'Proof of Concept' in Small Trial

January 9, 2013

A small clinical trial of a therapeutic HIV vaccine temporarily lowered viral levels in HIV-positive participants, MedPage Today reports. While the study is highly preliminary, it gave the Spanish researchers, who published their results in Science Translational Medicine, a "proof of concept," suggesting that their strategy may one day lead to a "functional cure," in which people with HIV could suppress the virus without the need for daily antiretrovirals (ARVs).

The researchers created this therapeutic vaccine effect by modifying the patients' own dendritic cells. These are immune cells that prompt CD4s to fight pathogens—but they can also carry HIV and transmit the virus to CD4 cells. The scientists pulsed the participants' dendritic cells with HIV that had been drawn from their bloodstream and deactivated with heat. Out of 36 participants, all of whom were taking long-term ARV therapy, 24 were randomly assigned to receive three injections of the manipulated cells and 12 received three doses of ordinary dendritic cells. Afterward, all participants stopped taking ARVs for 48 weeks.

After 12 weeks of ARV cessation, 12 out of the 22 participants who remained in the treatment cohort had a 10-fold reduction or greater in what's known as a plasma viral load set point, while only one out of 11 in the control group experienced such a benefit. Following an additional 12 weeks, seven out of 20 participants still within the active therapy group maintained a 10-fold reduction in their viral load set point, while none in the control group experienced any sustained therapeutic effect. The viral load reduction was consistently associated with a rise in CD4 counts. The vaccine proved safe and well tolerated. Eventually, however, all the participants saw their viral loads rise again.

To read the MedPage Today article, click here.

To read the study abstract, click here.

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