Draining the Reservoirs

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It's clear by now that crafty HIV infiltrates a variety of hidden "reservoirs" in the body. A team at the National Institutes of Health (NIH) has taken what Anthony Fauci, MD, the director of the National Institute of Allergy and Infectious Diseases, calls a "tiny step" toward discovering how to drive HIV out of its hiding places and into the bloodstream, where it's vulnerable to antiretroviral drugs.

Fauci and his colleague Clifford Lane, MD, looked at the possibility that infusions of interleukin-2 (IL-2), long studied as an immune modulator that boosts CD4 counts, might wake up resting immune cells and flush out elusive HIV. They compared culture results of peripheral blood mononuclear cells (PBMCs) from 26 patients whose viral loads had become undetectable while on highly active antiretroviral therapy (HAART). Thirteen of the patients had also been receiving IL-2 infusions for an average of 39 months in doses of 3 to 18 million units daily, given for five days in a row, followed by at least eight weeks off the drug.

Virus could be cultured from the PBMCs of all patients on HAART alone. However, even using an analysis that assessed over 300 million cells, virus could not be isolated from PBMCs taken from three of those also on IL-2. But Fauci cautions that this does not mean that those patients are completely HIV free. He says there are many body compartments where HIV can hide—including lymphoid tissue, the brain, the bone marrow, and the testes—which weren't assessed. And he strongly emphasizes that this is very preliminary. "The only real proof of pudding will be what happens when you stop all therapy in these people to see if virus can then be found."

Lane is beginning a separate trial in which patients with long-term undetectable viral loads will stop all antiretrovirals. By tracking them with a variety of assays, he hopes to discover whether drug holidays are possible for some PWAs, at least for a period of time, and which assays might predict who could do well with drug cessation.

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