New Study Finds HIV Reservoir May Endure Longer Than Previously Thought

In a 111-person group of people treated for HIV, the average viral reservoir half-life was 12 years.

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The HIV reservoir of those on successful treatment for the virus dissipates at a much slower average rate than previously thought, according to a new large study, the National AIDS Treatment Advocacy Project (NATAP) reports.

Presenting their findings at IDWeek 2016 conference in New Orleans, researchers studied 111 people who thanks to antiretroviral (ARV) treatment had an undetectable viral load for at least five years—a median of eight years. They followed the participants for a median 1.4 years and took a median three tests of the size of their reservoirs through two different measurements of HIV's genetic material.

The researchers estimated the average half-life (the time it takes to reduce by half the size) of the viral reservoir to be 144 months (12 years). The average estimated reservoir half-life was 64 months among those who always had an undetectable virus during the study, 146 months among those who had detectable but not quantifiable virus during the study, and 204 months among those who had had viral blips (temporary, small elevations of viral load to a quantifiable level).

The persistence of the viral reservoir frustrates efforts to cure HIV. A main component of the reservoir is long-lived immune cells that are latently infected with the virus. A latently infected cell is not replicating. And because standard antiretroviral (ARV) treatment works against the virus only when a cell is replicating, latently infected cells stay under the radar of ARVs and may start replicating again, perhaps after years. If someone is still being treated for the virus at this time, ARVs could suppress such viral production. But if an individual were off ARVs, such newly replicating cells could lead to a viral rebound, in which viral load shoots back up again.

When successful combination ARVs were first introduced in 1996, some prominent researchers believed that such treatment could cure the virus after a certain number of years. This theory proved incorrect, partly as a result of the long persistence of latently infected cells.

This new study’s findings are relevant to research into possible methods of curing the virus, which center around reducing the size of, and hopefully eliminating, the viral reservoir.

To read the NATAP report, click here.

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