First-Ever Case of Spontaneous HIV Clearance Reported in Australia

The circumstances of this case are so highly unique, the prospect of replicating it are quite uncertain.

July 1, 2019 By Benjamin Ryan

In a first in the nearly four-decade HIV epidemic, researchers have reported a case of an Australian man who was an elite controller of the virus and has apparently spontaneously cleared his infection, aidsmap reports.

An elite controller is an individual whose immune system maintains a suppressed viral load, in the absence of treatment.

The specifics of the man's infection are so highly unique that scientists have cautioned that the prospect of replicating such a phenomenon by therapeutic means remains quite uncertain. Nevertheless, his case appears to be a proof of concept of a means by which HIV may be eradicated from the body.

Publishing their findings in the Journal of Virus Eradication, investigators describe a man they call Subject C135 who contracted HIV through a blood transfusion at age 34 in 1981. He is now 72 years old and is one of eight people who have been identified as having contracted the virus from the same donor. They are collectively known as the Sydney Blood Bank Cohort (SBBC).

The SBBC members were all apparently elite controllers, meaning that their bodies suppressed HIV without medications and they maintained stable CD4 levels. C135 himself was identified as a member of the group in 1996.

Today, six SBBC members—as well as the donor—remain living. Three of them (not including the donor) maintain their elite-controller status; they have undetectable viral loads and are not on antiretrovirals.

In 2011, researchers published a paper about the three remaining elite controllers in which they stated that the characteristic that most distinguished them from the other cohort members was the particularly strong response of their CD4 cells to HIV's p24 capsid protein. And even among this trio, C135 stood apart as having "identifiable genetic polymorphisms that probably contributed to nonprogression" of his infection.

Having searched in vain for signs of HIV in his body—through PCR testing of immune cells drawn from his blood and from gut and lymph node tissue—the investigators are now prepared to qualify him as having spontaneously cleared his virus. It is not clear when the last of HIV vanished from his body. Tests have not detected HIV DNA in his body since 1997.

The study authors identified five factors that were likely instrumental in this apparent case of spontaneous clearance:

1. The HIV that infected the donor and all the SBBC cohort members lacked a piece of DNA that encodes a viral gene called nef. Virus deficient in nef replicates slowly and is associated with lower viral loads.
2. C135 had only one copy of the CCR5 gene, which gives rise to the coreceptor of the same name on the surface of CD4 cells to which HIV attaches to begin the infection process. This would naturally hinder HIV's ability to infect cells.
3. His CD4 cells were particularly sensitive to the string of amino acids that make up the HIV gag, or shell, protein, which appears on the surface of infected cells; as a result, C135's immune system was primed to prompt a multistep response that would ultimately destroy those cells.
4. The man had a pair of immune-cell genes, known as HLA-B57 and HLA-DR13, that provided him with a quite efficient immune response. People with the virus who have these two genetic variants tend to have lower viral loads and HIV disease that progresses more slowly.
5. C135 had a strong and broad CD8-cell-based response to the virus.

All these factors likely ensured that the man's immune system was able to maintain an edge against HIV and prevent it from mutating and evading the natural immune defenses.

To read the aidsmap article, click here.

To read the study, click here.

© 2026 Smart + Strong All Rights Reserved.

http://beta.docker.poz.com/article/firstever-case-spontaneous-clearance-hiv-reported-australia