A 3rd Man Received HIV-Resistant Stem Cell Transplant, Is in Viral Remission

"The Düsseldorf Patient" has been off HIV treatment only since November 2018, so it is too early to determine whether he has been cured.

March 14, 2019 By Benjamin Ryan

Following closely behind the now-famous case of "the London Patient," a German man is in a state of viral remission after receiving an HIV-resistant bone marrow transplant to treat his leukemia. At this point, he has been off antiretroviral (ARV) treatment for four months with no rebound of viral replication in his body. He must spend more time in this state of viral remission before researchers can determine whether he has been cured of the virus.

To date, one person has been cured of HIV, Timothy Ray Brown, aka "the Berlin Patient," who over a decade ago received two bone marrow transplants from a donor whose immune system was resistant to HIV. Brown has been off ARV treatment without his virus rebounding for such a long time that researchers have pronounced him cured.

At the 2019 Conference on Retroviruses and Opportunistic Infections (CROI) in Seattle, investigators announced a similar case, dubbed "the London Patient," who has been off ARVs for 18 months following an HIV-resistant bone marrow transplant to treat cancer and has not experienced any viral replication. While much of the discussion about that case has used the term "cure" to describe that man's current HIV status, the author of his case study has insisted on describing him as being in a state of viral remission until at least another six to 12 months pass with no resurgence of his virus.

This new case study, of a man called "the Düsseldorf Patient," was also presented at CROI, in poster form. It describes a 49-year-old HIV-positive man who in February 2013 received treatment for acute myeloid leukemia with a stem cell transplant from a donor who was homozygous for the CCR5-delta32 mutation. This means that the donor had two copies of a genetic mutation that yields a defective CCR5 coreceptor on the surface of immune cells. (This mutation is found in about 1 percent of those of European descent.) Most HIV, including that with which this man was infected, attaches to the CCR5 coreceptor to begin the process of infecting cells.

The man's leukemia relapsed in November 2018, at which point he received eight courses of 5-

azacytidine and four lymphocyte infusions. He then went into complete remission from his leukemia. He stopped receiving immunosuppressive treatment in October 2017.

Throughout these treatments, the man remained on ARVs and sustained an undetectable viral load. Following his stem cell transplant, different indicators of HIV's presence in the body detected by Western blot tests dissipated, such that by January 2016, the test indicated a slightly positive result for the gp160 viral protein and negative results for seven other markers of the virus.

Over time, researchers analyzed samples of the man's peripheral blood mononuclear cells and found they were all negative for HIV DNA integrated into cells' genomes, known as proviral DNA. They also could not detect virus in the cerebral spinal fluid (in a test conducted in July 2014), rectum (April 2015 and March 2016), the third portion of the small intestine (March 2016) and bone marrow (August 2015). They cultured the man's cells and attempted to grow virus out of them in February, March and May of 2016, but all tests remained negative for HIV.

Other highly sensitive tests showed only low signals for the virus.

After a thorough discussion with the man about the particulars of his case and their implications concerning the risk of his going off HIV therapy, the researchers interrupted his ARV treatment in November 2018. He has not experienced viral rebound in the time since then, during which he has been closely monitored.

Multiple other people with the virus have received similar HIV-resistant stem cell transplants to treat cancer that have not succeeded in curing them of the virus. Some of these individuals died not long after their cancer treatment, while others have survived only to see their virus rebound following their discontinuation of ARV therapy. That said, currently more than three dozen individuals who have received similar treatments and are being monitored may also ultimately be deemed cases of HIV cure.

Researchers in the HIV cure field stress that the treatments that Brown and the London and Düsseldorf patients received are not a practical way to cure the virus on a broad scale. It would not be ethical to administer such a dangerous treatment—Brown nearly died as a result of his—to those who were not already facing terminal cancer. Additionally, it is rare that an HIV-positive person with cancer will not just find a suitable blood marrow donor but also one with a highly uncommon genetic abnormality that confers resistance to the virus.

While this particular stem-cell-transplant-based cure strategy will likely remain limited to a small coterie of patients, such successful outcomes serve as proofs of principle that may help guide the many other investigational cure strategies centered on manipulating the genes that give rise to the CCR5 coreceptor.

To read the conference abstract, click here.

© 2026 Smart + Strong All Rights Reserved.
http://beta.docker.poz.com/article/3rd-man-received-hivresistant-stem-cell-transplant-viral-remission