

Bone marrow transplant eliminates signs of HIV infection

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Two men with longstanding HIV infections no longer have detectable HIV in their blood cells following bone marrow transplants. The virus was easily detected in blood lymphocytes of both men prior to their transplants but became undetectable by eight months post-transplant. The men, who were treated at Brigham and Women's Hospital (BWH), have remained on anti-retroviral therapy. Their cases will be presented on July 26, 2012 at the International AIDS Conference by Timothy Henrich, MD and Daniel Kuritzkes, MD, physician-researchers in the Division of Infectious Diseases at BWH.

"This gives us some important information", said Dr. Kuritzkes. "It suggests that under the cover of anti-retroviral therapy, the cells that repopulated the patient's immune system appear to be protected from becoming re-infected with HIV."

One patient's [bone marrow transplant](#) was two years ago, the other was four years ago. Both were performed at the Dana-Farber/Brigham and Women's Cancer Center. Over time, as the patients' cells were replaced by [donor cells](#), traces of HIV were lost. Currently, both patients have no detectable HIV DNA or RNA in their blood. The level of [HIV antibody](#), a measure of exposure to HIV, also declined in both men.

"We expected HIV to vanish from the patients' plasma, but it is surprising that we can't find any traces of HIV in their cells", said Dr. Henrich. "The next step is to determine if there are any traces of HIV in their tissue."

The research team is currently designing studies that would enable them to look for HIV in the tissues. Researchers also plan to study additional HIV-positive patients who have undergone a bone marrow transplant.

Researchers point out that there are two key differences between the Brigham patients and the "Berlin patient", a man who was functionally cured of HIV after a [stem cell transplant](#). In the Berlin patient's case, his donor was specifically chosen because the donor had a genetic mutation that resisted HIV. The Brigham patients' bone marrow transplants were done without any thought to selecting an HIV-resistant donor. Second, the Berlin patient ceased anti-retroviral therapy after his transplant, while the Brigham patients have remained on anti-retroviral therapy.

Provided by Brigham and Women's Hospital

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