Post–Bone Marrow Transplant, Man With HIV Stays Off Meds for 9 Months Before Rebound

In contrast to the only person cured of HIV, this man did not have a donor with a genetic abnormality conferring HIV resistance.

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A 55-year-old man living with HIV stayed off antiretrovirals (ARVs) for nine months before his viral load rebounded following a bone marrow transplant to treat his leukemia, aidsmap reports. Tests indicated his viral reservoir, the existence of which frustrates attempts to cure the virus, diminished in size.

In contrast to the only person ever cured of HIV, Timothy Ray Brown (a.k.a. the Berlin Patient), this man did not receive his bone marrow from a donor with the genetic abnormality known as the CCR5-delta32 mutation, which confers resistance to HIV among the immune cells the virus targets. The lack of this mutation means that a donor's immune cells have fully functioning CCR5 coreceptors on the surface of CD4 immune cells, which HIV uses to infect the cells.

The man was diagnosed with HIV in 1995 and started taking ARVs in 1999 when he had 300 CD4s. He went off HIV treatment between 2004 and 2009 and then started again, taking Norvir (ritonavir)-boosted Prezista and Truvada (tenofovir disoproxil fumarate/emtricitabine).

He was diagnosed with B-cell acute lymphoblastic leukemia in April 2013. Before starting chemotherapy, he switched his ARV regimen to Isentress (raltegravir), Intelence (etravirine) and Truvada. That October, he received reduced-intensity conditioning chemotherapy and an allogeneic stem cell transplant from an individual lacking the CCR5-delta32 mutation.

Upon receiving the transplant, the man had a viral load of 25 and 288 CD4s.

He developed graft-versus-host disease, a reaction to the transplant, four months after receiving it.

Having stayed on ARVs continuously throughout his leukemia treatment, the man remained on HIV treatment for more than two years following his transplant. During this time, his viral load was mostly undetectable and otherwise very low. Tests of HIV DNA and RNA in the body indicated that

the size of the reservoir had shrunk. His level of antibodies to HIV also fell.

A total of 784 days after the man's transplant, his medical team took him off ARVs and monitored him carefully, testing his viral load every two weeks for the first 12 weeks after the treatment interruption and every four weeks thereafter.

After remaining consistently undetectable, the man's viral load rebounded to 60 on day 288 (9.6 months) after he started his treatment interruption. Five days later, his viral load was 1,640, and he was put back on ARVs. He once again developed an undetectable viral load. Tests found no evidence of drug resistance.

To read the aidsmap article, click here.

To read the conference abstract, click here.
