

## Early HIV treatment led to “functional cure” in 14 patients, report researchers

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French researchers have reported a group of 14 patients who achieved a “functional cure” of HIV after stopping antiretroviral treatment, some of whom have maintained an undetectable viral load for nearly 10 years.

The researchers believe that about 15% of patients who become infected with HIV may be able to control the virus in this way if they are treated very soon after becoming infected.

The group of patients, known as the “Visconti cohort,” were infected with HIV between 1996 and 2002. Their cases are reported in *PLoS Pathogens*.<sup>1</sup> All the patients received combination antiretroviral treatment within 10 weeks of being infected.

The patients were treated for an average of 36 months, and all saw their viral load drop to undetectable levels. Ten patients also saw their CD4 T cell counts rise during treatment; one of the patients whose T cell count did not increase had a very high count to begin with, and there were no records of pre-treatment count for the others.

After treatment stopped, viral control persisted, with undetectable or very low levels of virus for an average of 89 months, and CD4 counts remained stable, with a final median count of 837 cells/mm<sup>3</sup>. Two patients have reported such results for 113 and 115 months.

The researchers said that the mechanism by which these patients—described as “post-treatment controllers”—control their HIV infection differs from that by which some patients have been seen to spontaneously control HIV and may hold the key to finding a cure. This second group of patients, called “HIV controllers,” who make up less than 1% of people infected with

HIV, can control the virus at such low levels that no symptoms are seen.

Limiting the pool of infected cells seems to be crucial to the control of viral replication by post-treatment controllers, the researchers said. Early treatment may also limit the susceptibility of cells to HIV infection. However, researchers do not know why only a small number of patients can control the virus in this way, although they are investigating this further.

Deborah Jack, chief executive of the UK National AIDS Trust, welcomed the latest research and also the report earlier this month of a US girl who was born with HIV but in whom the virus could not be detected when she was 22 months old, despite stopping treatment at 18 months.<sup>2</sup>

“These are exciting times, and today’s study is further evidence that we are getting closer to a cure for HIV,” said Jack. “What is telling in both the functional cure in the US and in the latest study in France is that early treatment was key to their success.

“This just underlines the importance of people being tested and diagnosed early. Currently half of people living with HIV in the UK are diagnosed late—indicating that they are likely to have been infected for five years. For British people to benefit from these new medical advances it is crucial that we tackle late HIV diagnoses.”

1 Sáez-Cirión A, Bacchus C, Hocqueloux L, Avettand-Fenoel V, Girault I, Lecuroux C, et al. Post-treatment HIV-1 controllers with a long-term virological remission after the interruption of early initiated antiretroviral therapy ANRS VISCONTI Study. *PLoS Pathog* 2013;9(3):e1003211.

2 Roehr B. Doctors claim to have cured girl of HIV. *BMJ* 2013;346:f1487.

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