

# Small breakthroughs offer big hope of AIDS 'cure'

July 26 2012, by Kerry Sheridan and Jean-Louis Santini

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Small but significant breakthrough studies on people who have been able to overcome or control HIV were presented Thursday at a major world conference on ways to stem the three-decade-old disease.

One study focused on a group of 12 patients in France who began treatment on antiretroviral drugs within 10 weeks of becoming infected with human immunodeficiency virus, but then stopped the therapy after nearly three years.

The virus has stayed away for a median of six years in the group, known as the Visconti Cohort, which stands for "Virological and Immunological Studies in CONTrollers after Treatment Interruption."

This unique group of people did not completely eliminate HIV, but continued to possess it at an extremely low level in their cells and did not become sick.

"These results suggest that the antiretroviral treatment should be started very early after infection," said Charline Bacchus, lead researcher of the study at France's national AIDS research agency ANRS.

"Six years after interruption of treatment, patients treated early on in the post-infection period present a perfect ability to control the HIV infection."

Scientists are continuing to study the immune characteristics of this

group for clues as to why they do not need prolonged medication. For most HIV patients, antiretroviral drugs must be taken for life.

There are currently 34 million people living with HIV worldwide. In low- and middle-income nations, which are the most affected by the pandemic, about eight million people are now taking antiretrovirals for treatment, about half those in need.

The second study involved two HIV-positive men whose DNA showed no trace of the virus eight and 17 months respectively after receiving stem cell transplants from an outside donor as treatment for blood cancer.

The men have been followed for two and three and a half years respectively, with no sign of the virus's return. Researchers have also noted they experienced a sharp decline in HIV antibodies, suggesting the virus is gone.

Their cases are different from the well-known "Berlin patient," American Timothy Brown, who is considered cured of HIV and leukemia five years after receiving similar bone marrow transplants from a rare donor naturally resistant to HIV, or lacking a CCR5 receptor.

The two men in the study received transplants from donors with the CCR5 receptor, which acts as a gateway allowing HIV to penetrate the cells, so they were not afforded protection against the virus by that mutation.

Researchers believe that by continuing to treat the men with antiretroviral drugs during the process, the medicine prevented the donor cells from becoming infected until they were able to provide the men with new immune defenses.

The study was presented at the 19th International AIDS Conference by Daniel Kuritzkes, professor of medicine at Brigham and Women's Hospital in Massachusetts.

Reacting to the news, Brown expressed "joy" at the potential for two more men to be free of HIV.

"As I have said many times before, I want everyone to be cured of this disease. We can only hope that this case and today's development represents the beginning of the end of this plague," he said in a statement.

A third study on how a cancer drug helped purge HIV from the cells of patients was described by lead researcher David Margolis of the University of North Carolina.

Researchers used the chemotherapy drug vorinostat to revive and so unmask latent HIV in the CD4+ T cells of eight trial patients who were also taking antiretroviral drugs to stop the virus from multiplying.

Margolis, whose study was published Wednesday in the British journal *Nature*, told reporters that researchers are energized toward the goal of finding a cure for HIV, even if it remains many years away.

"You cannot argue with the value of the goal and we cannot get there without working on it and I cannot say how long it will take," he said.

"But I think there is a clear path and we can make progress."

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