Hôpitaux Universitaires Genève

INSTITUT PASTEUR

JULY 20, 2023

Press dispatch

under embargo

Until 23:59 on Wednesday July 19 (Paris)

HIV: 20 months' remission after a bone marrow transplant with no protective mutation – the Geneva patient

© Adobe Stock

In February 2023, the IciStem consortium, which includes Asier Sáez-Cirión's team at the Institut Pasteur, published details in *Nature Medicine* of a third case of HIV remission after a bone marrow transplant, involving the Düsseldorf patient. A total of 5 individuals (the Berlin, London, Düsseldorf, New York and City of Hope patients) are now considered as having probably been cured of HIV infection after receiving a bone marrow transplant. In all these cases, the bone marrow was taken from donors carrying the rare genetic mutation CCR5-delta 32, which is known to provide cells with natural protection against HIV. At the International Conference on HIV Science (IAS 2023), Asier Sáez-Cirión, Head of the Institut Pasteur's Viral Reservoirs and Immune Control Unit, and Professor Alexandra Calmy, MD, PhD and HIV/AIDS Unit Director at the Geneva University Hospitals (HUG), will present a case of HIV remission following a bone marrow transplant performed as part of the patient's cancer treatment. The significance of this patient monitored in Geneva at the HUG, whose case is being examined jointly by the Institut Pasteur, Institut Cochin and the IciStem consortium, lies in the fact that the transplant was taken from a donor who does not carry the CCR5-delta 32 mutation. Therefore, unlike the cells of other individuals who are considered to have been cured, this person's cells remain HIV-permissive. Despite this, the virus was still undetectable 20 months after antiretroviral therapy was discontinued. These findings will be presented orally in Brisbane, Australia on July 24, 2023.

The individual, whose circumstances will be outlined in the presentation, has been living with HIV since the early 1990s and received antiretroviral therapy from the outset. In 2018, he underwent a stem cell transplant as treatment for a particularly aggressive form of leukemia. One month after the transplant, tests showed that the patient's blood cells had been entirely replaced by the donor's cells, and this was accompanied by a significant reduction in the number of HIV-infected cells. Antiretroviral therapy was gradually reduced and permanently discontinued in November 2021.

Tests performed over the 20 months following therapy discontinuation found no viral particles, no latent viral reservoirs or any increase in the immune response against the virus in the individual's body. Although this evidence does not rule out the persistence of the virus in his body, the scientific team can nevertheless classify the "Geneva patient" as a case of remission from HIV infection.

"What has happened to me is wonderful and magical – we can now focus on the future," the Geneva patient.

"Although this protocol is not applicable on a large scale due to its aggressiveness, this new case provides unexpected insights on mechanisms of eliminating and controlling viral reservoirs, which will play a key role in devising curative HIV treatments,"
Asier Sáez-Cirión, Head of the Institut Pasteur's Viral Reservoirs and Immune Control Unit.

"Through this unique situation, we are exploring new avenues in the hope that HIV remission or even cure will one day no longer be a one-off occurrence,"
Alexandra Calmy, HIV/AIDS Unit Director at the Geneva University Hospitals.

source

Absence of viral rebound for 20 months without antiretrovirals after allogeneic hematopoietic stem cell transplantation with wild-type CCR5 donor cells to treat a biphenotypic sarcoma, oral presentation, IAS 2023, July 2023

Asier Sáez-Cirión[1], Anne-Claire Mamez[2], Véronique Avettand-Fenoel[3], Paul Thoueille[4], Mitja Nabergoj[5], Maxime Hentzien[6], Ellen Mereles Costa[6], Maria Salgado[7], Monique Nijhuis[8], Adeline Melard[3], Elise Gardiennet[3], Valérie Monceaux[1], Caroline Passaes[1], Anais Chapel[1], Federico Perdomo-Celis[1], Annemarie Wensing[8], Javier Martínez Picado[7], Sabine Yerly[9], Mathieu Rougemont[10], Alexandra Calmy[6]; and ICISTEM study group

1 Institut Pasteur, Université Paris Cité, Viral reservoirs and immune control unit, Paris, France

2 Geneva University Hospitals, University of Geneva, Division of Hematology, Department of Oncology, Geneva, Switzerland
3 Institut Cochin - CNRS 8104 / INSERM U1016 / Université de Paris, Paris, France
4 Lausanne University Hospital and University of Lausanne, Service and Laboratory of Clinical Pharmacology, Department of Laboratory Medicine and Pathology, Lausanne, Switzerland
5 Institut Central des Hôpitaux, Sion, Switzerland
6 HIV/AIDS Unit, Infectious Diseases Department, Geneva University Hospitals, Geneva, Switzerland
7 AIDS Research Institute, IrsiCaixa, Badalona, Barcelona, Spain
8 University Medical Center Utrecht, Utrecht, Netherlands,
9 Geneva University Hospitals, Laboratory of Virology, Geneva, Switzerland
10 Private practitioner, Geneva, Switzerland

contact

Institut Pasteur Press Office

MYRIAM REBEYROTTE **+33 (0)1 45 68 81 01**

ANNE BURLET-PARENDEL **+33 (0)1 86 46 79 32**

presse@pasteur.fr