

HIV cure of the 'London Patient' is confirmed and a third case of long-term viral remission is presented: the 'Düsseldorf Patient'

- 'The Lancet HIV' publishes an article that confirms the HIV "cure" of the 'London Patient', since the virus remains undetectable in his body 29 months after the antiretroviral treatment interruption.
- Results of a third case of long-term HIV remission, the 'Düsseldorf Patient', will be presented at the Conference of Retroviruses and Opportunistic Infections. This case underwent a stem cell transplant to treat leukemia and has been HIV undetectable for 14 months following treatment interruption.
- Both cases are part of the [IciStem](#) consortium, coordinated by the [IrsiCaixa](#) AIDS Research Institute and the University Medical Center of Utrecht (The Netherlands).

Barcelona, March 10 2020. *The Lancet HIV* publishes on Tuesday, March 10, a study with the participation of IrsiCaixa confirming the HIV "cure" of the so-called *London Patient* (IciStem#36), **since 29 months after undergoing a stem cell transplant there is no evidence of viral replication in his body.** The publication comes to light coinciding with the Conference of Retroviruses and Opportunistic Infections (CROI), the most important world conference on AIDS, which was supposed to be held in Boston (USA) but finally is a virtual meeting due to the coronavirus crisis. At this congress, the IciStem consortium also presents a third case of long-term remission of HIV after a bone marrow transplant: the ***Düsseldorf Patient***, (IciStem#19), who has remained **HIV undetectable for 14 months after antiretroviral interruption.**

Both cases are part of the IciStem consortium, coordinated by the IrsiCaixa AIDS Research Institute and the University Medical Center of Utrecht (Netherlands). Researchers **differentiate "cure" and "long-term remission" depending on time elapsed without viral rebound since the interruption of antiretroviral treatment (ART).** According to Javier Martínez-Picado, ICREA researcher at IrsiCaixa and co-coordinator of IciStem, "when the London case was initially published, we insisted on avoiding the term cure because, even though 18 months invited to be optimistic and since we had not seen such a long interval since the [Berlin Patient](#), we wanted to be cautious and not generate false expectations." Now, after 29 months of remission, researchers go one step further.

'Fossil' viral DNA

The *London Patient* (IciStem#36) was an HIV+ man who suffered from Hodgkin's Lymphoma and in 2016 underwent a stem cell transplant with a mutation, called CCR5 Delta 32, which prevents HIV entry to its target cells, CD4 T lymphocytes. 16 months after the transplant, doctors interrupted ART and, in March 2019, [Nature](#) journal published that HIV had been undetectable in his blood for 18 months, becoming the [second case of "long-term remission"](#).

Now *The Lancet HIV* highlights that, 29 months after treatment interruption, **virus is still undetectable in blood, brain-spinal fluid, intestinal tissue and semen.** Analysis detect very low

levels of HIV genome in lymphoid tissues, but it is defective DNA that has no replicative capacity and, therefore, no infectious capacity. “This pushes us to conclude that this is a second case of cure because in the *Berlin Patient fossil* viral DNA was also detected and it had not infectious capacity,” explains Martínez-Picado.

The *London Patient* also has antibodies against HIV, although they are at a very low level and continuously reducing since the transplant. Their presence could indicate that the new cells of the immune system could have been exposed to the virus, but according to María Salgado, IrsiCaixa researcher at the IciStem consortium, **“it is common that evidences of past infections persist in the organism, since antibodies can take years to disappear.”**

Third case of HIV remission

As for the *Düsseldorf Patient* (IciStem#19), he is a 50-year-old man with HIV infection who received a stem cell transplant in February 2013 to treat acute myeloid leukemia. Donor cells also had the CCR5 Delta32 mutation. In November 2018, doctors interrupted ART and, 14 months later, there is no viral rebound. Analysis show viral DNA traces in lymph nodes and gastrointestinal tract, although they have not infectious capacity. According to the researchers, these results “are compatible with a sustained remission of HIV.” The **third case in the world**.

Usually, when people with HIV infection interrupt treatment, virus bounces over the first 4 weeks. Lack of rebound in these cases is due to the fact that donor cells are resistant to HIV, and as they replace the recipient cells after transplant, chances of infection for the virus decrease and it ends up disappearing.

Despite this success, Martínez-Picado highlights that **“there remain a number of barriers to overcome before CCR5 gene editing can be used as a scalable cure strategy for HIV”**.

Funded by The Foundation for AIDS Research, amfAR (USA) since 2014, IciStem includes 40 HIV patients who underwent a stem cell transplant. Researchers highlight that stem cell transplant is a high-risk medical procedure and is only recommended in life-threatening haematological conditions. They also emphasize that ART interruption can only be performed under medical supervision.

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