

Spanish Doctors Say They Found HIV Cure

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380024 06: A close up of a microscope slide taken at the Reproductive Genetics Institute's Chicago laboratory shows a similar controversial procedure conducted recently by the Reproductive Genetics Institute in Chicago. A team of research doctors recently transplanted stem cells taken from the umbilical cord of a baby boy whose embryo was chosen specifically to save his six year old sister who suffers from Fanconi's anemia, an inherited disorder that causes a massive failure of bone marrow cell production and which is usually fatal. The sister, Molly Nash, is recovering from the \$100,000 procedure at a Minneapolis hospital. Critics of the procedure warn that the practice of cell transplantation raises ethical issues and that 'creation for donation' might one day lead to 'designing your descendants' for pre-screened traits such as eye color, strong limbs or intelligence.

(Tim Boyle/Newsweek)

In 2007, Timothy Brown, also known as the "Berlin Patient", an HIV patient, was the subject of the of a s a stem cell transplant from a donor naturally resistant to HIV. Six years after the transplant, Brown no longer has the HIV virus in his body.

Umbilical Cord From Genetic Mutation Donor Was Used During The Transplant

Now fast forward to 2016, doctors from Spain replicated the event to a subject they called the "Barcelona Man" by administering blood transplant to an umbilical cord from someone who had genetic mutation. The mutation gave the donor a heightened resistance to HIV. Before this new discovery, the closest medication available was a pill, Truvada, which prevents people from acquiring the virus.

Rafael Duarte, the director of the Haematopoietic Transplant Programme at the Catalan Oncology Institute in Barcelona said: "We suggested a transplant of blood from an umbilical cord but from someone who had the mutation because we knew from 'the Berlin patient' that as well as [ending] the cancer, we could also eradicate HIV."

"Barcelona Man" Was HIV-Free After Three Months

Blood Cells of the Spanish patient were first destroyed with chemotherapy. Doctors replaced the lost ones with new cells which includes the CCR Delta 35 mutation that the HIV virus could not attach to. Stem cells from another donor were also given to speed-up the regeneration process. Although the Barcelona Patient died due to cancer after three years, he was declared HIV free just three months after the transplant.

In March, Barcelona would conduct a clinical trial backed by Spain's National Transplant Organization. The US held a similar trial in 2015 by the Food and Drug Administration. The method, developed by Sangamo Bioscience, involves getting stem cells from HIV-infected patients and using a gene editing tool to turn the stem cells into white blood cell with the CCR5 mutation. CCR5 is a protein that interferes with the virus's ability to latch onto blood cells.