The AIDS Policy Project

Phone: 215-939-7852 | email:info@aidspolicyproject.org

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CONTACT: Stephen LeBlanc 510-388-7089

GERMAN DOCTOR HONORED FOR FIRST FUNCTIONAL CURE FOR HIV/AIDS
June 3, San Francisco City Hall, Front Steps, 11:30 AM

Gero Hütter, MD, the Berlin physician who performed the historic stem cell transplant in 2007 that has to date functionally cured an American patient with HIV/AIDS, will be honored by San Francisco Supervisor Ross Mirkarimi and the AIDS Policy Project on the steps of San Francisco City Hall.

Dr. Hütter's achievement, known colloquially as the "Berlin patient," has sparked great interest in the scientific community. However, few people outside the scientific world have taken note of this case, which is likely the first successful cure of a person with AIDS. The patient has been completely HIV-free for three years; there is no fixed threshold for when a patient is considered officially cured, since it has never happened before. Grassroots AIDS treatment activists, including many people with AIDS, asked Supervisor Mirkarimi to make this proclamation thanking Dr. Hütter for his work.

"We know too well the destructive power of HIV/AIDS in San Francisco. And while antiretroviral drug regimens are keeping people alive, we are seeing shortened life spans due to either HIV, the side effects of the medications or a harmful synergy between both. Dr. Hütter 's extraordinary work illuminates one path towards a cure. We honor him for his vision and hope that the one person he has functionally cured is the harbinger of a future without AIDS," said San Francisco Supervisor Mirkarimi.

"Right now, the cure for AIDS is the scientific goal that dare not speak its name," said AIDS Policy Project Executive Director Kate Krauss. "But there is remarkable research that is leading us closer to that goal, and we want people to know about it. We want to put the cure for AIDS back on the map. Also, Dr. Hütter is not a traditional AIDS researcher, but a leukemia doctor who was thinking outside the box. More of that, we say."

The Science—California is Key

In the case reported in the February 12, 2009 issue of the *New England Journal Medicine,* Hütter treated a man infected with HIV and on antiretroviral therapy who later developed leukemia. After failing conventional chemotherapy for leukemia, the last hope for the patient was a hematopoietic stem cell transplant from a matched donor.

Hütter, whose team performed the transplant, sought a compatible stem cell donor who also had a genetic mutation known as CCR5 deletion. People born with the CCR5 deletion mutation (about 1/1000 Northern Europeans) lack a key receptor that HIV uses to enter cells and are highly resistant to HIV infection. The mutation is thought to have been protective for bubonic plague and to have emerged in Northern Europe in response to the "Black Plague" during the Middle Ages.

The patient received first one and than another stem cell transplant from a CCR5 deleted donor. The procedures first required the destruction of the patient's own hematopoietic stem cell population, which eliminated the leukemia. The ensuing stem cells transplants performed by Hütter's team essentially replaced his immune system with that of the donor. The hematopoietic stem cells from the donor comprising the patient's new immune system lacked CCR5 and gave the patient an immune system resistant to HIV.

In the three years since these stem cell transplants occurred, the patient's body has remained completely free of HIV, despite extensive testing. The patient has not been on antiretroviral therapy, though he was indicated for it before the transplants. This is unlike patients with "zero viral load" where there is no detectable virus in the blood, but it remains in pockets in the body and quickly re-emerges following cessation of antiretroviral therapy. If Dr. Hütter's patient continues to show no virus in his body, he will be considered the first patient ever cured of AIDS.

These types of stem cell transplants are very dangerous, with a 20% to 30% fatality rate and therefore are considered an important scientific milestone rather than cure that is ready now for roughly 33 million people living with HIV/AIDS worldwide.

In California: California's state stem cell agency, the California Institute of Regenerative Medicine (CIRM), established by Proposition 71 in 2004 with $3 billion in total funding, funded two approaches in October of 2009 to try and replicate and extend Hütter 's procedure. The two grants, each for $20 million over 4 years, seek to delete CCR5 from a potential HIV patient's own hematopoietic stem cells using genetic engineering techniques.

One, a team at the City of Hope led by John Zaia, MD, uses zinc finger technology from Sangamo BioSciences in Richmond, CA. The other team is led by Irving Chen, PhD, at UCLA. The grants seek the ability to genetically alter hematopoietic stem cells taken from patients to resist HIV. The therapeutic goal is to then return these HIV resistant stem cells back into the patients with the hope that the patients can control HIV without antiretroviral therapy, much like the "Berlin patient". The target of both grants is an investigational new drug (IND) filing with the FDA within the four-year term of the grant award. A successful IND filing opens the door for Phase I clinical trials testing these techniques in actual patients.

“Hütter ’s remarkable experiment provides a critical “proof of concept” for gene therapy/stem cell transplant approaches to functionally cure a patient with HIV/AIDS. A great deal of difficult work needs to be done before we can realistically talk about a “cure” for more than a handful of HIV patients, but his work and the follow-on approaches funded by CIRM are absolutely essential first steps,” said Jeff Sheehy, an HIV advocate serving as a governing board member of CIRM and a member of the AIDS Policy Project.

The AIDS Policy Project: We are building a public, visible movement to support AIDS cure research, which is farther along than most people realize. As longtime AIDS treatment activists, including people with AIDS, we want to dismantle obstacles to this crucial research. We reach out to researchers, we organize community coalitions, and we meet with decision makers and innovators. See our web site: http://www.AIDSPolicyProject.org

It’s time to start talking about a cure for AIDS again.

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