Stem cell transplant

HIV patient’s rare remission boosts hopes of curing global killer

DARREN DODD — LONDON

A man treated in the UK has become only the second person to go into remission from HIV, raising hopes of progress in finding a cure for a condition that affects 37m people worldwide.

As in the first case — in Berlin 10 years ago — the man, known only as "the London patient", received a bone marrow stem cell transplant from a donor who was HIV resistant, researchers say.

The report on the case, written by researchers at UCL and Imperial College London and published in Nature yesterday, said the patient had been in remission for 18 months since he stopped taking antiretroviral therapy and seemed to be free of the virus, which can lead to AIDS.

Prof Eduardo Olavarria from Imperial College London, one of the authors of the report, stressed it was too early to say with certainty that the patient was "cured" of HIV. But, he said, "the apparent success of hematopoietic stem cell transplantation offers hope in the search for a long-awaited cure".

Prof Ravindra Gupta of UCL, the study’s lead author, said: "At the moment the only way to treat HIV is with medications that suppress the virus, which people need to take for their entire lives, posing a particular challenge in developing countries."

"Finding a way to eliminate the virus entirely is an urgent global priority, but is particularly difficult because the virus integrates into the white blood cells of its host."

Other researchers sounded a note of caution. "The report of a second case of HIV remission is of great interest but does not move the scientific field forward very significantly over the Berlin patient," said Prof Sarah Fidler of Imperial College London.

"Rather, it reinforces the science that this is rare but feasible. The treatment this patient received is not safe and not scalable. It is certainly not an option to be recommended for people living with HIV who are doing well on antiretroviral therapy."

Stem cell transplants are risky and done only when there is a clinical reason. Both the London and Berlin patients received one as part of treatment for cancer. In addition, HIV-resistant donors are rare.

Nevertheless, the case "represents a world-class UK contribution to cutting edge clinical science", she added.

Anton Pozniak, president of the International Aids Society, said that although the approach was not a viable large-scale strategy for a cure, it represented a critical moment. "These new findings reaffirm our belief that there exists a proof of concept that HIV is curable. The hope is that this will eventually lead to a safe, cost-effective and easy strategy to achieve these results using gene tech-
nology or antibody techniques," he said.

Almost 37m people worldwide are living with HIV and about 1m people a year die from HIV-related causes. About 59 per cent of those with the condition are receiving antiretroviral therapy.

Aids-related deaths have fallen by more than half since they peaked in 2004. The UN's stated goal is to end Aids as a public health threat by 2030.
London patient "free" of HIV after stem cell transplant

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Despite fears of new drug-resistant strains of HIV, UNAids, the body co-ordinating the global response to the disease, says new infections have fallen by 47 per cent since the peak in 1996 and Aids-related deaths have fallen by more than half since they peaked in 2004. The UN’s stated goal is to end Aids as a public health threat by 2030.

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HIV-cured patient case could "open the door" to new gene therapies, scientist says

The landmark case of a patient who has recovered completely from HIV could "open the door" to developing new treatments for the virus, a scientist has said. The unnamed patient became the second person in history to recover from HIV after a stem cell transplant, researchers announced on Tuesday.

He received cells from a donor with a rare genetic mutation known as CCR5-delta 32, which confers natural resistance to HIV.

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The man, known as the 'London patient' has not taken HIV drugs in 18 months and the virus has not returned.

Ravinder Gupta, a professor at University College London, said the team who worked on the case was "very excited" over the patient's recovery.

"The HIV community in general has been somewhat disillusioned about whether we can achieve cures for large numbers of people," he said.

The scientist told BBC Radio 4 that the patient's case "does open the door to understanding whether we can use gene therapy approaches to modify CCR5, which is the co-receptor of HIV".

But he added that the transplant could not be used to treat large numbers of people.

"It's clearly not a translatable approach for the general population who have HIV because the mortality associated with the transplant is significant," he said.

Despite this, the scientist remains optimistic about the development of an affordable future treatment.

"If you achieve remission you avoid lifelong antiretroviral therapy for millions of individuals and so I think the science just needs to be done and the economics should follow," he said, when asked about the financial accessibility of a possible treatment.

Timothy Ray Brown, the first man to ever be cured of HIV, was treated in Germany, using a similar procedure.

Gero Hutter, the doctor who treated Mr Brown, called the new case "great news" and "one piece in the HIV cure puzzle".

Members of the scientific community hailed the London patient's recovery but many urged caution and said stem cell transplants were unlikely to be used for most patients.

"The report of a second case of HIV remission is of great interest but does not move the scientific field forward very significantly," said Sarah Fidler, from Imperial College London.
"Rather, it reinforces the science that this is rare but feasible. The treatment this patient received is not safe, and not scalable. It is certainly not an option to be recommended for people living with HIV who are doing well on antiretroviral therapy."

"If we can understand better why the procedure works in some patients and not others, we will be closer to our ultimate goal of curing HIV," said Graham Cooke of Imperial College London.

Stem cell transplants typically are harsh procedures which start with radiation or chemotherapy to damage the body's existing immune system and make room for a new one.

There can be complications involved and other attempts at treating HIV with this approach have failed.

"While this type of treatment is clearly not practical to treat the millions of people around the world living with HIV, reports such as these may help in the ultimate development of a cure for HIV," said Andrew Freedman from Cardiff University.

"This is likely to be many years away and until then, the emphasis needs to remain on prompt diagnosis of HIV and initiation of life-long combination antiretroviral therapy."

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Study shows community-wide HIV prevention strategy can reduce new infections

A new study, presented at the annual Conference on Retroviruses and Opportunistic Infections The HPTN 071 (PopART) study examined the impact of a package of HIV prevention interventions on community-level HIV incidence in urban and peri-urban communities in Zambia and South Africa. Study author Richard Hayes said, "We saw a highly significant 30 percent decrease in new HIV infections with a prevention strategy where HIV treatment was started according to in-country guidelines," adding, "We did not see a similar reduction in new HIV infections with another strategy where universal HIV treatment was offered from the beginning of the study. Additional analyses are underway to explore the reasons for this finding." The HPTN 071 (PopART) study involved more than one million people living in 21 communities in Zambia and South Africa, making it the largest HIV prevention trial to date.

The study measured the effects of two HIV combination prevention strategies offering HIV testing to people in their homes annually, with linkage to HIV care and treatment at the local health facility for those living with HIV.

"Overall, both strategies improved knowledge of HIV status and uptake of treatment," said co-author Wafa El-Sadr adding, "These findings show that a combination prevention strategy similar to PopART may be an effective tool to slow the global HIV epidemic."

HPTN 071 (PopART) researchers are currently examining the effects of the interventions on other study outcomes including herpes simplex virus-2 incidence, tuberculosis and HIV-related stigma. Work is also in progress to estimate the cost-effectiveness of the interventions.

"While the findings from the study are very encouraging, testing and treatment coverage fall short among young people and men necessitating the need for further research on how to fill these important gaps," said Sarah Fidler, MBBS, PhD, HPTN 071 (PopART) protocol co-chair and professor of medicine at Imperial College, London.

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Testing everyone for HIV leads to drop in infection by a third

By Anne Galland, Global health security correspondent
02 Mar 2019 08:45 GMT

Testing everyone in a community for HIV and offering immediate treatment to all those who test positive can cut the number of new infections by around a third, according to new research.

The researchers believe that this approach could go some way to ending the HIV epidemic in these two countries and elsewhere.

In 2017, around 37 million people were living with HIV worldwide and there were 1.8 million new infections. Countries in southern Africa account for a large proportion of this number, with around 48,000 new infections in Zambia and 220,000 in South Africa.

Although HIV incidence is declining, the world is unlikely to reach the UNAIDS target of less than 500,000 new infections a year by 2020 so new approaches to tackling the epidemic are needed.

The trial, led by researchers at the London School of Hygiene and Tropical Medicine (LSHTM) and Imperial College, London, involved 21 communities of around 50,000 people each.

Participants were divided into three study arms. The first arm received annual door-to-door voluntary HIV testing and those that tested positive received immediate treatment.

Global summary of HIV

Those in the second group were offered annual door-to-door testing and treatment along national guidelines - that is, when the amount of HIV in their blood had reached a certain level.

And those in the third group acted as a control and received HIV testing and treatment according to usual protocols.

In 2016 the South African and Zambian governments changed their guidelines and recommended that everyone who tested positive for HIV go on treatment immediately, meaning the first and second groups received the same intervention for the last two years of the trial.

The study found that HIV incidence was 30 per cent lower in the second group compared to the control group. But incidence was only seven per cent lower in the first group - where HIV treatment was offered from the beginning of the study.
God and big pharma: HIV’s new adversaries in Africa

The researchers, who are presenting their findings at this week’s Conference on Retroviruses and Opportunistic Infections in Seattle, said that this outcome was “puzzling” and further analysis was underway to explain this.

Richard Hayes, professor of epidemiology and international health at LSHTM, said that one theory was “sexual risk disinhibition”.

“If people know there’s something in place like a preventive strategy and they think it’s going to reduce the amount of HIV in a community they may become complacent and take more risks,” he said.

Another reason could be high levels of migration in these groups, he said.

Ensuring people know their HIV status and getting them onto treatment quickly is seen as vital in the fight against the disease as HIV treatment means that the virus becomes undetectable in the blood.

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Professor Sarah Fisher from Imperial College said: “The idea behind our study was that if most people living with HIV know their HIV status and take HIV treatment, the risk of passing the virus on to their partners and children will be greatly reduced. The results show that this approach was successful – we hope the findings may help to reduce the number of new HIV infections across the world.”

Prof Hayes added that this was the biggest trial to date of the “test and treat” intervention and previous studies had not been big enough to properly understand its effects. He said that it could be introduced in other parts of the world.

Prof Hayes added that a 30 per cent reduction was a substantial drop.

“Although during the trial we found a 30 per cent reduction we think that effect will build up over time and in the next decade it would be a much larger effect,” he said.

He added: “Showing that the intervention works is a very important step forward for policy makers but they will also want to know about its cost effectiveness.”

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Major New Study Points Way to Cut HIV Infections

Cape Town — Visiting people in their homes to offer them HIV tests, and referring those who test positive to local clinics, can significantly reduce new infections in a community, according to the world's biggest study on how to cut HIV infection rates.

The results of the study, carried out in visits to 50,000 people in Zambia and South Africa over a period of about four years, were announced at a conference in Seattle on Tuesday (African time zones).

The research was undertaken as part of efforts to bring down the stubbornly high infection rates in many parts of Southern Africa. The experts who identified more effective HIV prevention strategies as an urgent need say that HIV incidence remains at "very high levels" – when the study was launched, five people were becoming infected for every two entering treatment.

In the course of the research, community HIV-care providers visited participants annually, offering them voluntary counselling and testing for HIV in their homes. The participants were aged between 18 and 44 and came from 21 communities in urban and peri-urban areas in Zambia and the Western Cape region of South Africa.

Those testing positive were immediately referred for HIV care at local health centres. Participants in one group were placed on anti-retroviral therapy (ART) when their conditions deteriorated enough for them to qualify for treatment under national health guidelines in their country at the time – that is, when the number of white blood cells which fight infection dropped to a certain level.

In its headline finding, the study said the number of new HIV infections in this group declined by 30 percent compared to a group which was not part of the home-counselling and testing intervention.

This decrease was "highly significant", according to Dr. Richard Hayes, a leader of the research and professor of epidemiology and international health at the London School of Hygiene and Tropical Medicine.

Dr. Sarah Fidler, who co-led the study and is professor of medicine at Imperial College, London, said that although the overall findings of the study were encouraging, there are "important gaps".

"Testing and treatment coverage fall short among young people and men," she said, and this points to a need for further research.

The research was carried out under the auspices of the HIV Prevention Trials Network, a worldwide collaborative clinical trials network which develops and tests interventions designed to prevent HIV infection. Research in Zambia was led by Dr. Helen Ayles of the Zambart research group based at the University of Zambia's School of Medicine, and that in South Africa by Dr. Bock and Dr. Nulda Beyers, both of the Desmond Tutu TB Centre at Stellenbosch University.

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