

Challenges and opportunities for an HIV cure

12 December 2013, (Geneva, Switzerland)-- Researchers from the Brigham and Women's Hospital and Harvard Medical School have recently reported that the two so-called "Boston patients" who were initially thought to have been potentially "cured" of HIV, by a bone marrow transplantation to treat their cancer, have seen their HIV virus return. These two patients had no detectable virus after the transplants, and stopped their antiretroviral drugs. Although they did well for a remarkably long time (several weeks), the virus eventually rebounded. They have now resumed standard anti-HIV treatment and are apparently doing well.

While this is disappointing from a clinical point of view, and for the two individuals concerned, these results are of high scientific interest. Further study of these patients should contribute to a better understanding of HIV reservoirs, and where and how the virus "hides" in cells.

To date, the only adult known to have completely eliminated HIV is the Berlin patient. Conversely from the two Boston patients, he received bone marrow transplant from an individual with a natural mutated form of the CCR5 receptor. This naturally occurring mutated form of the receptor renders cells resistant to HIV infection. Further studies are necessary to understand if this played a role in the different clinical outcomes.

Other recent studies that reinvigorate hope for an HIV cure include the report of patients in France who initiated treatment very rapidly after HIV infection. Following prolonged anti-retroviral treatment, this group is now able to control the viral replication, despite the absence of therapy, mimicking the rare individuals capable of spontaneously controlling HIV. Another interesting case is the 'Mississippi baby'. In this situation treatment was given within the first 30 hours of life, and some two years later, HIV remains undetectable, even without ongoing treatment. In these two examples early treatment by limiting the size of the reservoirs seem to have been determinant in maintaining the control of the infection when antiretroviral medicines were stopped.

The latest results on the Boston patients indicate that drastic reduction of the level of HIV reservoirs may be necessary but not sufficient to achieve a state of remission of HIV infection in the absence of antiretroviral treatment. This is sobering news but science often advances in a series of steps back and forth. Setbacks such as that in Boston are common and expected, and it is critical that we learn as much as possible from these studies, and continue our progress towards an HIV cure. Researchers will need to continue to reinforce collaboration and act as a global community to increase our knowledge of HIV reservoirs, identify better ways to measure the reservoirs and pursue new directions to target cells harboring latent HIV.

The Global Scientific initiative to find an HIV Cure, led by the International AIDS Society will continue its efforts to foster collaboration globally both within the HIV research sector and beyond, in other health sectors such as cancer treatment – as there are interesting commonalities with regards to remission control. Those working within this collaborative effort are looking at all the options that could bring about an effective, sustainable and accessible cure for HIV. More information can be found at www.towardsanhivcure.org

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About the IAS

The International AIDS Society (IAS) is the world's leading independent association of HIV professionals, with over 16,000 members from more than 196 countries working at all levels of the global response to AIDS. The IAS members include researchers from all disciplines, clinicians, public health and community practitioners on the frontlines of the epidemic, as well as policy and programme planners.

The IAS is custodian of the biennial International AIDS Conference, which will be held in Melbourne, Australia, 20-25 July 2014 and lead organizer of the IAS Conference on HIV Pathogenesis, Treatment and Prevention, which will be held in Vancouver, British Columbia, Canada, 19-22 July 2015.

www.iasociety.org | www.aids2014.org | www.ias2015.org

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