

Beat: Miscellaneous

HIV infection returns in U.S. toddler thought cured

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USPA News - A Mississippi toddler born with the AIDS virus but thought to be "functionally cured" now has detectable levels of HIV after more than two years without evidence of the virus, meaning she was not cured, researchers involved in the case announced on Thursday. The child, who became known as the "Mississippi baby," was born prematurely in a Mississippi clinic in 2010 to an HIV-infected mother who did not receive antiretroviral medication during pregnancy and was not diagnosed with HIV infection until the time of delivery.

Because of the high risk of HIV exposure, the infant received liquid, triple-drug antiretroviral treatment from 30 hours of age. Several days after the baby was born, doctors confirmed that the child had been infected with HIV, and she was later discharged from the hospital and continued to receive liquid antiretroviral therapy for another 18 months. But when the child was seen again by medical staff at the age of 23 months - five months after the child stopped receiving treatment - blood samples revealed no HIV infection. When the news was made public nearly half a year later, in March 2013, it made international headlines and raised hopes that the case could provide clues to eliminate HIV infection in other children. But during a routine clinical care visit earlier this month, the now 4-year-old child was found to have detectable HIV levels in her blood. "Certainly, this is a disappointing turn of events for this young child, the medical staff involved in the child's care, and the HIV/AIDS research community," said Anthony Fauci, the director of the National Institute of Allergy and Infectious Diseases (NIAID). "Scientifically, this development reminds us that we still have much more to learn about the intricacies of HIV infection and where the virus hides in the body." The examination also showed that the child has decreased levels of CD4+ T-cells, a key component of a normal immune system, and the presence of HIV antibodies. This indicates an actively replicating pool of HIV in the body. The toddler is now again receiving antiretroviral therapy and subsequent tests have shown decreasing virus levels. Genetic sequencing of the virus indicates the child's HIV infection is the same strain she acquired from her mother. Researchers are now working to determine what enabled the child to remain off treatment for more than two years without detectable virus or measurable immunologic response and what might be done to extend the period of sustained HIV remission in the absence of antiretroviral therapy. "The fact that this child was able to remain off antiretroviral treatment for two years and maintain quiescent virus for that length of time is unprecedented," said Deborah Persaud, a professor of infectious diseases at the Johns Hopkins Children's Center in Baltimore and one of two pediatric HIV experts involved in the ongoing analysis of the case. "Typically, when treatment is stopped, HIV levels rebound within weeks, not years." Katherine Luzuriaga, a professor of molecular medicine, pediatrics and medicine at the University of Massachusetts Medical School, said the prolonged lack of viral rebound suggests that the very early therapy not only kept the child clinically well but also restricted the number of cells harboring HIV infection. "The case of the Mississippi child indicates that early antiretroviral treatment in this HIV-infected infant did not completely eliminate the reservoir of HIV-infected cells that was established upon infection but may have considerably limited its development and averted the need for antiretroviral medication over a considerable period," Dr. Fauci said. "Now we must direct our attention to understanding why that is and determining whether the period of sustained remission in the absence of therapy can be prolonged even further."

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Editorial program service of General News Agency:

United Press Association, Inc.

3651 Lindell Road, Suite D168

Las Vegas, NV 89103, USA

(702) 943.0321 Local

(702) 943.0233 Facsimile

info@unitedpressassociation.org

info@gna24.com

www.gna24.com