Broadly neutralizing antibody delays return of viral rebound in HIV-1 infected individuals

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The administration of VRC01, a potent and broadly neutralizing HIV-specific antibody, is safe, is well-tolerated, generated high plasma concentrations and modestly delayed the return of HIV viral rebound in HIV-1 infected individuals after they stopped receiving antiretroviral therapy, according to a study published in the New England Journal of Medicine by researchers at the University of Alabama at Birmingham, the National Institutes of Health and the University of Pennsylvania Penn Center for AIDS Research.

"Monoclonal antibodies are revolutionizing our approach to many diseases in oncology and rheumatolgy," said Edgar T. Overton, M.D., co-director of the UAB Alabama Vaccine Research Clinic. "In this study, we tested whether a broadly neutralizing antibody against HIV could stop replicating virus. While a single antibody only modestly delayed viral rebound, we demonstrated that this strategy can be improved and potentially lead us to effective therapeutic HIV vaccine strategies. We are excited to pursue this approach in our ongoing efforts to end the HIV epidemic."

Two clinical trials were conducted under the National Institutes of Health and the AIDS Clinical Trials Group in 24 HIV-1 infected individuals undergoing analytical treatment interruption, which measures changes in immunological response. The open-label trial in which both the researchers and participants were aware of the administered treatment showed that markers of of HIV virus replication were surpressed for at least four weeks after the VRC01 was administered and HIV treatment was stopped, but all participants failed to maintain durable viral suppression in the absence of antiretroviral therapy.

Further studies looking at more potent antibodies and combinations of bNAbs like VRC01 will likely be required to achieve sustained remission of the virus in HIV-1 infected individuals after halting ART.

"We are excited to be on the forefront of the global efforts to end AIDS," Overton said.

Source:
University of Alabama at Birmingham
