HIV Quickly Starts Damaging the Brain, but Treatment Halts Progression

This finding adds yet more weight to the imperative of treating HIV as soon as possible after infection.

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Not long after an individual contracts HIV, the virus penetrates the brain and begins to cause progressive damage to the volume of the organ as well as cortical thickness. Antiretroviral (ARV) treatment apparently halts this progression and is able to dial back some of the damage.

Publishing their findings in Clinical Infectious Diseases, researchers studied 65 people who entered the study soon after they contracted HIV, in a period known as primary HIV infection. These participants, 30 of whom started ARV treatment during the study, received multiple MRIs of their brains over time.

The researchers compared the brain scans of the participants with scans of 16 people with long-term, or chronic, HIV infection as well as 19 HIV-negative individuals.

The study authors found that before participants began ARV treatment, a longer time spent with untreated HIV was associated with loss in volume in various parts of the brain, including the thalamus, caudate and cerebellum. More time living with untreated HIV was also linked with cortical thinning in the frontal and temporal lobes and the cingulate cortex.

After individuals started ARVs, the progression of such brain damage stopped, and there were some small increases in cortical thickness measures.

“We knew HIV could cause neurological damage, but we did not know it happened so early in the infection,” Serena Spudich, MD, MA, a professor of neurology at Yale and a co–senior author of the paper, said in a press release. “The findings emphasize the importance of identifying infected people early and treating them so we can halt its progression.”

To read a press release about the study, click here.

To read the study abstract, click here.

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