Hep C and Substance Abuse May Exacerbate Brain Declines in People With HIV

A major mitigating factor may be treating HIV with antiretrovirals.

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People with HIV have a higher risk of premature brain aging, and hepatitis C virus (HCV) coinfection and dependency on alcohol or other substances may elevate that risk.

Publishing their findings in Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, researchers conducted a study that included both cross-sectional and longitudinal data in which they measured brain volumes according to 1,101 MRI scans collected over a 14-year period from 549 people between 25 and 75 years old.

The cohort members included 68 people with HIV who did not have alcohol dependence, 60 people with HIV with alcohol dependence, 222 people without HIV who had alcohol dependence and 199 control subjects who had neither HIV nor alcohol dependence.

At their final MRI, most of the HIV-positive cohort members were at least 50 years old, including 78.3 percent of those with and 73.5 percent of those without alcohol dependence.

Compared with those who did not have the virus, those with HIV experienced steeper declines in the volume of the prefrontal cortex in particular. Those with the virus also showed deficits in their temporal, parietal, insular and cingulate brain regions. Alcohol and drug dependence and HCV coinfection were associated with exacerbated brain volume deficits. Nevertheless, people with HIV who had neither substance dependence nor HCV still saw accelerated age-related declines in the volume of the frontal and posterior parietal regions of the brain compared with the control subjects.

Among those with HIV, poorer scores on HIV-associated neurocognitive disorder tests as well as a

worse score on the Veterans Aging Cohort Study (a calculator that estimates the risk of death for people with HIV) were associated with smaller regional brain volumes among both those with and without alcohol dependence.

“HIV infection itself may confer a heightened risk of accelerated brain aging, potentially exacerbated by HCV coinfection and substance dependency,” the study authors concluded, noting that to confirm such findings, a study would need to start following individuals before they contracted HIV.

To read the study abstract, click here.

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