Even When Well Treated, HIV Is Linked to Advanced Aging

Researchers analyzed 10 biomarkers associated with biological aging among a group of HIV-positive and -negative Europeans.

January 17, 2019 By Benjamin Ryan

People living with well-treated HIV may experience faster biological aging than their HIV-negative counterparts.

Publishing their findings in the journal AIDS, researchers from the ComorBidity in Relation to AIDS (COBRA) study analyzed 134 people with HIV and 79 HIV-negative people with similar sociodemographic and lifestyle factors. The participants were recruited in Amsterdam (these were at least 45 years old) and London (these were at least 50 years old).

All the HIV-positive individuals were on antiretrovirals and had had a fully suppressed viral load for at least 12 months.

The researchers also studied samples from 35 blood donors selected from the Dutch national blood bank in Amsterdam. These donors were matched with the HIV-positive and the HIV-negative individuals from the COBRA study according to age. The donors had all tested negative for HIV, hepatitis B and C viruses (HBV/HCV), syphilis and human T-lymphotropic virus 1 and 2 (HTLV).

The investigators tested the participants for 10 biomarkers that previous research has indicated are associated with biological, as opposed to chronological, aging.

Among the COBRA study members, biological age was greater than chronological age by an average of 13.2 years among those with HIV and 5.5 years among those without the virus. For the blood donors, biological age was an average of 7.0 years lower than chronological age.

After adjusting the data for various factors, including HIV status, the study authors found that the following factors were significantly associated with a greater average biological age compared with chronological age: chronic HBV, 10.05 years; total anti-cytomegalovirus (CMV) IgG antibody levels, 1.83 years per 10-fold increase; and CD8 cell count, 0.44 years per 100-cell increase.

After adjusting for chronic HBV infection status, total anti-CMV IgG antibody levels and CD8 levels, the analysis indicated that the HIV-positive COBRA participants had a greater discrepancy between

biological and chronological age compared with their HIV-negative counterparts (4.5 years on average) and with the blood donors (19.0 years on average).

After conducting another analysis in which they adjusted the data for various factors, the study authors found that HIV-related factors associated with a greater biological age compared with chronological age included: cumulative exposure to the antiretroviral Invirase (saquinavir), 1.17 years per year of exposure; a lowest-ever (nadir) CD4 count of less than 300, 3.0 years; chronic HBV, 7.35 years; and total anti-CMV IgG antibody level, 1.86 years per 10-fold increase.

To read the study, click here.

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