High CD4 Counts Equal Longevity, Except for Heart Disease

A large analysis of Austrian people living with HIV suggests that high CD4 counts are no protection against heart disease.

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Longevity of people living with HIV continues to increase as HIV treatment suppresses the virus, raises CD4 counts and allows the immune system—and people living with HIV—to thrive. But a new analysis published in the International Journal of Environmental Research and Public Health found that a robust immune system is no protection against mortality related to heart disease.

Gisela Leierer, PhD, of the Medical University of Innsbruck in Austria, and colleagues with the Austrian HIV Cohort Study Group analyzed mortality rates by cause and CD4 count for 6,848 people living with HIV from 1997 to 2014. All participants had at least one clinic visit during that time and were followed for at least six months after their most recent visit or until they passed away.

Overall, 1,192 people in the cohort died between 1997 and 2014, one third of them due to AIDS-defining illnesses, one in 10 from liver disease, 12% from non-AIDS-defining cancers, and another 9% from non-AIDS-defining infections. In addition, 7% died from cardiovascular disease. But a large chunk of people, nearly a third, died for reasons that clinicians couldn't identify.

There were also wide disparities in who got care.For instance, 15% of participants entered care with clinical indications of AIDS, such as a CD4 count below 200. And 13% were never prescribed antiretroviral therapy. It was those people who had the highest mortality rates. People who passed away were slightly older—a median of 40 years versus 35 years—had lower nadir (lowest-ever) CD4 counts and—for those who were on treatment—had been on treatment for less time.

The good news is that those 1,192 deaths mark a two thirds decrease in mortality from 1997 to 2014. However, the rates varied for people with different experiences with the virus. For instance, people who entered care in their 30s saw their mortality rate drop by 75% over the decades. Deaths from AIDS-defining illnesses dropped fivefold. Liver disease-related deaths dropped by half. Non-AIDS-defining cancers dropped by nearly two thirds. But deaths related to drug use stayed the same. And people who acquired HIV by sharing injection drug equipment were also more likely to die any cause than those who acquired HIV via gay sex.

Many of these deaths, Leierer and colleagues found, were explained by the person's CD4 count. But that wasn't the case in cardiovascular disease. While the overall mortality rate due to cardiovascular disease dropped by nearly half over the 17 years of the study, when the researchers adjusted mortality rates to account for CD4 count, survival didn't actually go up. For non-cardiovascular- related death, CD4 counts of 50, 200 and 350 cells were associated with a higher risk of death compared with higher levels. But there was no survival benefit against death from heart disease for people with higher CD4 counts compared to those with lower levels.

"An association of lower CD4 counts with increased mortality for most causes of death was found," Leierer and colleagues wrote. "However, we did not find evidence of a higher cardiovascular mortality risk in individuals with a low CD4 count."

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