Early Immune Disruption Might Predict Who Needs Early HIV Treatment

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Subtle changes in the level of certain immune cells soon after infection are highly predictive of more rapid disease progression, according to a study published online January 15 in *The Journal of Infectious Diseases* and reported by aidsmap. The results might help providers predict who would benefit from earlier HIV treatment.

There is an ongoing discussion in the scientific community about the appropriate time for people with HIV to begin taking antiretroviral (ARV) therapy. Recently, the Department of Health and Human Services changed its HIV treatment guidelines to recommend HIV-positive people start ARV treatment when their CD4 cells drop below 500, whereas previous guidelines recommended starting after CD4 cells fell below 350. The panel responsible for writing the guidelines was split, however, on whether treatment is appropriate for people with higher CD4 counts. One of the arguments in favor of deferring treatment is the fact that it is currently not possible to accurately predict who would benefit most from earlier therapy.

In an effort to determine whether changes in certain types of cells are associated with more rapid disease progression, Anuradha Ganesan, MD, MPH, from the National Naval Medical Center in Bethesda, Maryland, and her colleagues followed 466 military personnel who had been living with HIV, on average, for less than a year.

Ganesan's team tested whether CD4 and CD8 cells were active or resting—in other words, whether they were fighting an infection. The team also looked at the levels of DNA incorporated into CD4 cells. And they evaluated levels of specific types of CD4 and CD8 cells. For example: Naive cells are those that can respond to any type of infection. This is opposed to memory cells, which are specific to only one type of infection that has already been introduced to the immune system.

Ganesan and her colleagues found that higher levels of naive CD8 cells were associated with more rapid disease progression among the study participants. Higher levels of a marker on CD4 and CD8 cells associated with activation, called Ki-67, were also associated with more rapid progression. And the level of HIV DNA that had been incorporated into CD4 cells was highly predictive of disease progression.

The authors recommend further tests of these markers be carried out "to identify subjects most at

risk of progression and likely to benefit from early therapeutic intervention.”

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