Early HIV treatment fails to restore memory T cells

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Most of the body's memory T cells vanish within weeks after a person is infected with the HIV virus. In a study from the Aaron Diamond AIDS Research Center and the Bernard-Nocht Institute appearing in the international open-access journal *PLoS Medicine*, researchers report that these memory T cells, mostly found in the digestive tract, tend not to return to normal even after years of treatment for HIV.

In recent years, HIV infection has been shown to deplete the body's memory T cells quite rapidly. In particular, the memory cells in the intestinal lining are decimated within days, while the T cells usually measured in the blood fall much more gradually, typically over several years.

Although T cells in the blood can return and remain at normal levels when HIV infection is treated with antiviral drugs, it has been unclear whether the intestinal mucosal memory cells return as well. By performing intestinal biopsies on volunteers who started HIV treatment shortly after infection, the researchers found that, unlike in blood, intestinal T cells remained low even after several years of HIV treatment in 70% of volunteers, even though only a tiny fraction of these cells were found to be expressing HIV. Furthermore, they found that the level of immune activation in the gastrointestinal tract remained elevated despite treatment.

The finding that intestinal immune cells do not return to normal in most people with HIV despite years of treatment raises the concern that clinical problems will result over time. Fortunately, this does not appear to be the case in most people currently being treated for HIV, some for as long as 10 years, but the results of this study suggest that vigilance is warranted for infections or other gastrointestinal problems resulting from prolonged impairment of immunity.

These results also suggest that treatments to preserve immune function early after infection should be studied, and in particular that an HIV vaccine may need to stimulate immune responses that can act very quickly following infection, before the bulk of lymphocytes capable of countering the infection are lost.

Source: PLoS