Certain Liver Immune Cells Harbor HIV Long-Term, but It's Likely Inert

Researchers believe that macrophage cells in the liver that harbor such inert HIV are not a part of the viral reservoir.

December 5, 2018 By Benjamin Ryan

Immune cells known as macrophages within the liver can remain infected with HIV for many years during antiretroviral (ARV) treatment, but the virus is inert and therefore incapable of replenishing an infection if ARVs are interrupted. That's according to a recent proof-of-principle study, the authors of which concluded that there is no evidence that HIV-infected macrophages in the liver—80 to 90 percent of all such cells in the body are in this organ—are part of the viral reservoir.

The HIV reservoir is made up in large part of cells infected with virus that remains latent, meaning it does not replicate and therefore stays under the radar of ARVs, which only work on active virus. If ARVs could attack the reservoir, it is likely they could cure the virus.

If macrophages in the liver indeed do not belong to the overall collection of reservoir cells, the study authors have reasoned, investigational cure therapies need not waste efforts by targeting them.

Publishing their findings in the Journal of Clinical Investigation, researchers drew liver tissue samples from nine people with HIV. Eight of the participants were on ARVs, for between eight months and 12 years.

The study authors found that HIV was present in macrophages that had been exposed to treatment for as long as the dozen years in the longest-treated participant. Such virus would replicate at low levels, but this was not sufficient to reestablish a systemic infection in the body.

Even in the person who was treated for the longest, the virus in macrophage cells was inert.

To read a press release about the study, click here.

To read the study, click here.
