Hepatitis C Linked to Accelerated Immune Cell Differentiation

December 15, 2014

Hepatitis C virus (HCV) is associated with accelerated differentiation of CD4 and CD8 cells—major building blocks of the immune system—into specific phenotypes. Publishing their findings in the Journal of Acquired Immune Deficiency Syndromes, researchers drew blood samples from 464 HIV-positive women and 158 women at high risk of contracting HIV, of whom a respective 63 and 18 were HCV positive. Scientists measured percentages of activated CD4 and CD8 cells, regulatory T-cells (Tregs), and T-cell differentiation phenotypes including naive, central memory, effector memory (EM) and terminally differentiated effector cells.

Among the HIV-negative group, those who were HCV-positive had 25 percent fewer naive CD4 cells, 33 percent more EM cells, and 37 percent fewer central memory CD8 cells when compared with those who did not have HCV. The coinfected group, however, only had one such association: a higher percentage of EM CD4 cells when compared with those monofinfected with HIV. This particular link was restricted to individuals with fewer than 500 CD4 cells per microliter, which likely indicates a diminished immune system resulting from more advanced (and untreated) HIV disease. Additionally, among the coinfected set, the only link between hep C and higher percentages of activated CD4s and Tregs was among those with 500 or fewer CD4s.

Thus, while hep C was linked with accelerated immune cell differentiation, coinfection with HIV made the various related links less clear-cut.

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