Abnormal Antibody Production in the Gut of Those With HIV May Prompt Inflammation

Without the proper immune protection, certain bacteria may be able to enter the bloodstream through the intestines and cause harm.

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People with HIV, even those on antiretroviral (ARV) treatment, may have abnormal production of antibodies in the intestines that can give harmful bacteria the chance to seep into the bloodstream. There, the bacteria may lead to harmful chronic inflammation.

Publishing their findings in PLOS Pathogens, researchers studied samples of intestinal secretions and blood plasma from 81 HIV-positive individuals, some of whom were on ARVs, as well as 25 HIV-negative individuals.

Using protein microarray analysis, the researchers studied the samples as they exposed them to fragments of certain types of bacteria and food materials. They found that antibodies that target certain species of bacteria in the gut were present in both the HIV-positive and -negative individuals' secretion samples. However, the samples from the HIV-positive individuals had mostly a less mature form of antibody, called IgM, compared with the more mature and more efficient forms of antibodies known as IgG and IgA that were more prevalent in the samples from the HIV-negative individuals.

This finding suggests that the immune cells in the mucosal layer of the intestines of HIV-positive individuals may not have the capacity to yield the antibodies necessary to prevent fragments of bacteria from seeping into the bloodstream. Also, the accumulation of IgM antibodies in the intestinal mucosa may itself give rise to inflammation.

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

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