Voice of America

Study: Gut Bacteria Worsen AIDS

Jessica Berman

July 11, 2013

Infection with the virus that causes AIDS alters the balance of bacteria which normally live in the gut, according to researchers, and that may shorten the lives of HIV-positive patients, even though they are treated with anti-viral drugs. The finding suggests that antibiotics may extend their lives.

Everyone has bacteria in their large intestine, some of which help digest food and others that may cause disease. In healthy people, this microbial community is kept in check by the immune system. But in people who are HIV positive, researchers say it appears the infection may recruit harmful gut microbes in greater numbers that further inflammation, leading to life-shortening chronic diseases.

Ivan Vujkovic-Cvijin is a biomedical researcher at the University of California San Francisco.

He says investigators studied the community of bacteria that live in the lining of the large intestine in patients infected with HIV, and compared the profile of microorganisms to that of healthy individuals.

Vojkovic-Cvijin says they saw greater numbers of so-called “bad bacteria,” including E. coli, Salmonella and Staphylococcus, in AIDS patients, causing inflammation that may be posing an extra challenge to their already compromised immune systems.

“And we think that this may be detrimental to people that are infected with the virus and may actually increase the rate at which people may develop AIDS, which is the destruction of the immune system as a result of HIV," said Vujkovic-Cvijin.

Researchers took small tissue samples from the large intestines of 24 patients with HIV. They analyzed the samples using a type of molecular “barcode scanner,” which allowed them to detect more varieties of gut microbes than the traditional method of growing microorganisms in laboratory dishes.

The implication of the discovery, according to Vujkovic-Cvijin, is that treating HIV positive individuals with antibiotics may slow the progression of the infection and lengthen their lifespans, which tend to be shorter than average despite treatment.

“Work like this suggests that while anti-retroviral drugs attack the virus, there may be other problems,

such as this deregulation of the community of bacteria that live in the gut. And we think maybe by restoring this community back to healthy state, we may actually be able to help those lifespans back to normal," he said.

Vojkovic-Cvijin says more research is needed to see whether antibiotics actually improve the ability of AIDS patients to fight their disease.

An article on gut bacteria in HIV patients is published in the journal Science Translational Medicine.

See the topic on aegis.org