MedicalXpress

Scientists pinpoint source of recurrent yeast infections in autoimmune syndrome

March 11 2010

(PhysOrg.com) -- It turns out that the immune system can create its own infections. Scientists now report that the immune-fighting proteins that keep yeast in check in healthy immune systems are under siege in patients with a rare autoimmune disorder known as APS-1. By pinpointing the cause of candidiasis in these patients, the finding paves the way for treating these fungal infections with drugs that are already out in the market.

Infectious diseases are not always caused by infection. In work reported in the *Journal of Experimental Medicine*, researchers at Rockefeller University reveal that patients who suffer from a rare autoimmune disorder that makes them vulnerable to yeast infections produce antibodies that target and destroy immune-fighting proteins that would otherwise keep yeast in check.

In 33 patients with the ailment, known as autoimmune polyendocrine syndrome, or APS-1, researchers led by Jean-Laurent Casanova, head of the Laboratory of Human Genetics of Infectious Diseases, found antibodies that attack a class of immune proteins called cytokines. Although several categories of cytokines exist, the antibodies found circulating in the patients' blood have long been known to protect humans from acute bacterial infections.

"These cytokines, particularly the family comprising interleukin 17A, 17F and 22, have recently been implicated in defending against yeast overgrowth, but this is the first time it has been shown in humans," says

Casanova. “The next step is to find genetic mutations in these cytokines in patients with candidiasis, as only this will prove the causal relationship.”

The findings pave the way for the treatment of fungal infections in APS-I patients with drugs that are already out in the market. The drugs clear the cytokine-attacking antibodies by depleting the B cells that make them.

More information: Autoantibodies against IL-17A, IL-17F, and IL-22 in patients with chronic mucocutaneous candidiasis and autoimmune polyendocrine syndrome type I, *Journal of Experimental Medicine* 207: 291-297 (February 15, 2010)

Provided by Rockefeller University