

Molecular profile hints at inflammatory processes in chronic fatigue

Lisa Rapaport

(Reuters Health) - - People with severe symptoms of chronic fatigue syndrome have a molecular signature in their blood made up of 17 immune system signaling molecules that are elevated, which may provide insight into how inflammation contributes to the mysterious condition.

Inflammation is the immune system's response to injuries and illnesses. The study identified variations in molecules known as cytokines that are responsible for sending messages and sounding an alarm, including several that can trigger inflammation.

Chronic fatigue syndrome can involve years of crippling pain and exhaustion, but is a controversial diagnosis because patients can't take a test to prove they have it. The current study results build on earlier experiments linking inflammation to the condition and might one day help create a blood test to diagnose it or lead to effective treatments, researchers say.

"What is at stake here is 'proof of concept' that this disease is real," said lead study author Dr. Jose G. Montoya of Stanford University School of Medicine in California.

"Patients have been humiliated, ostracized, and ignored," Montoya said by email.

Millions of people worldwide, including more than 1 million in the U.S. alone, suffer from chronic fatigue syndrome, the researchers note in the Proceedings of the National Academy of Sciences.

Doctors may diagnose the condition, also called myalgic encephalomyelitis, when people have at least six months of debilitating fatigue that can't be explained by other causes and make it difficult for them to keep up with school, work or social activities. Symptoms can appear in different combinations and intensities and may include sleep problems, cognitive impairment, fever, sore throat, or sensitivity to noise, light or certain foods.

The National Academy of Medicine recently proposed a new name for the condition, systemic exertion intolerance disease (SEID), because of its hallmark symptom of crushing fatigue after any kind of exertion, the authors note.

Many, but not all, chronic fatigue syndrome patients experience flu-like symptoms common in diseases caused by inflammation, they add.

For the current study, researchers examined blood samples from 192 patients with chronic fatigue syndrome and a control group of 392 healthy people.

The scientists found that some cytokine levels were lower in patients with mild forms of chronic fatigue syndrome than in the group of healthy individuals, but higher in people with severe symptoms of chronic fatigue syndrome.

One protein in particular, tumor growth factor beta (TGF-beta), was higher in patients with chronic fatigue syndrome than in the healthy controls, while another protein, resistin was lower.

However, the study team also found that the concentrations of 17 of the 51 cytokines they examined were associated with disease severity. Thirteen of those 17 cytokines are pro-inflammatory, the authors note.

Taken together, the findings build on previous research demonstrating that chronic fatigue syndrome is a real illness, and not something patients make up or experience only for psychological reasons, experts say.

“Many people with (chronic fatigue syndrome) report that their illness began with symptoms associated with a typical respiratory infection including fever, sore throat, swollen lymph nodes, muscle weakness and fatigue, but the clinical course was atypical and they never fully recovered,” said Dr. Ian Lipkin, a researcher at the Mailman School of Public Health at Columbia University in New York.

“Many of these symptoms can be explained by circulating immune system molecules described by Montoya and colleagues in this paper, as well as by others who have reported similar findings,” Lipkin, who wasn’t involved in the study, said by email.

The development of a biomarker such as a diagnostic blood test for chronic fatigue syndrome would be a major advance in understanding the condition and treating it, said Dr. Shaheen Lakhani, a neurology researcher at California University of Science and Medicine in San Bernardino who wasn’t involved in the study.

“We currently do not have such a test,” Lakhani said by email. “Not only will it permit objective diagnosis, it may guide new drug development and be used to monitor disease activity and responsiveness to treatments.”

SOURCE: bit.ly/2tY29nF Proceedings of the National Academy of Sciences, online July 31, 2017.



Medical **EXPOSE**

<http://www.medicalexpose.com/>