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Antibody linked to MS significantly higher in spinal fluid of blacks

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An antibody frequently used as a diagnostic marker for multiple sclerosis (MS) is present at greater levels in the cerebrospinal fluid of blacks with MS than Caucasians with the disease.
The findings suggest that genetic differences among ethnic groups contribute to changes in the immune system, affecting susceptibility to MS. And they add another piece to a tantalizing but stubborn puzzle: Why do blacks get MS less often than other ethnic groups but suffer more serious symptoms when they develop the disease"

"These antibodies are indicators of inflammation, but we don't yet understand how inflammation is linked to prognosis," says first author John R. Rinker II, M.D., who did the work as a fellow at Washington University School of Medicine in St. Louis and is now assistant professor of neurology at the University of Alabama at Birmingham. "No one really understands yet why inflammation levels differ from one MS patient to the next."

The new study measured cerebrospinal fluid levels of IgG, an immune system antibody. Rinker and others have previously linked greater IgG to more aggressive MS in the general patient population. But that same link could not be reestablished in the new study, which assessed disease severity by comparing the time from MS diagnosis to when the patient first needed assistance walking. Black patients needed help walking sooner — an average of nine years after diagnosis versus 17 years for Caucasians — but on a case-by-case basis, scientists couldn't use greater

IgG to predict an earlier need for assistance in walking.

"It may be that we haven't yet focused on the right disease characteristic or milestone in our search for factors that correlate with spinal inflammation," says Rinker. "I'm hoping to expand the search for correlations in follow-up studies."

The results are published in the July 3 issue of Neurology.

Epidemiologists estimate that 400,000 people in the United States have MS. Symptoms, which often strike in episodic bursts, include bladder and bowel dysfunction, memory problems, fatigue, dizziness, depression, difficulty walking, numbness, pain and vision problems. The disease is more common among Caucasians than any other group and affects two to three times as many women as men.

Research has shown that genetic factors contribute to MS risk but are not the sole determining factor. Scientists believe MS is likely triggered by a bacterial or viral infection. The infection causes an abnormal response in the immune system that misdirects the body's defenses against myelin, a protective sheath that surrounds many nerve cells.

To help clinch a diagnosis of MS, clinicians often test the spinal fluid for elevated levels of IgG. Since everyone makes IgG as a part of normal immune function, scientists have to assess cerebrospinal IgG levels using an index that also factors in the amount of IgG in the patient's blood and the integrity of the blood-brain barrier, which limits access to the brain.

"High IgG levels in a healthy person's bloodstream can cause this antibody to seep over into the cerebrospinal fluid, so a high level of spinal IgG isn't by itself very revealing," explains senior author Anne Cross, M.D., professor of neurology and head of the neuroimmunology section. "What's different in MS patients is that they make IgG in the

central nervous system. We can determine that this is the case by using the IgG index."

Working at the John L. Trotter MS Center at Washington University, Rinker analyzed samples from 66 black patients with MS and 132 Caucasians with the disease. According to the index, blacks' IgG levels were 29 percent higher.
Study coauthor Rob Naismith, M.D., and others have previously shown that while blacks develop MS less frequently, the consequences are often more serious.

"Lower access to care and to medication may contribute to this effect, but apart from those potential contributing factors, African Americans with MS still seem to have more aggressive forms and suffer more disability," Cross says.

Source: Washington University School of Medicine