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# UB study shows encouraging sign in cause of multiple sclerosis

## Blockages in veins that drain brain are cited

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The first half of a study to determine whether blockages in the veins that drain the brain cause multiple sclerosis have brought encouraging results, University at Buffalo researchers said Wednesday.

More than half of multiple sclerosis patients in the study exhibited the blockages, indicating an association with the disease.

A new theory suggests that the blockages cause MS. If proved correct, the theory would overturn the current understanding of how to diagnose and treat the disabling and incurable disease that attacks the nervous system.

"Our findings indicate this is a real thing, and it's important to let patients and physicians know that," said Dr. Robert Zivadinov, the principal investigator. "Based on our numbers, we believe diagnostic testing should be offered to MS patients."

The results show that narrowing of the veins is, at the very least, an important association in multiple sclerosis, said Zivadinov, who plans to present the full findings at the American Academy of Neurology meeting in April.

Advocates of the theory also suggest that angioplasty, the same procedure used to open clogged arteries around the heart, could repair the blockages.

MS affects 2.5 million people worldwide, including 500,000 in the United States, and its prevalence in Buffalo is significantly higher than the average.

The preliminary results are based on ultrasound tests of the first 500 participants in the study, and investigators plan to examine 500 additional patients for the blockages with more advanced diagnostic tools.

More than 55 percent of MS patients in the study exhibited narrowing of the extracranial veins in Doppler ultrasound tests.

When the 10.2 percent of subjects with borderline results were excluded, the percentage of affected MS patients rose to 62.5, compared with 25.9 percent of healthy people examined, according to Zivadinov, director of the Buffalo Neuroimaging Analysis Center located at Buffalo General Hospital.

The investigation is the first step in determining whether a condition called chronic cerebrospinal venous insufficiency is a major risk factor for MS. The abnormality is a vascular condition discovered by Dr. Paolo Zamboni of Italy's University of Ferrara.

The Buffalo study reflects similar findings in MS patients in Italy, although to a lesser degree, a difference that might be explained by the use of different devices to diagnose the blockages, Zivadinov said.

Zamboni and Zivadinov hypothesize that this narrowing restricts the normal outflow of blood from the brain, resulting in alterations in blood flow that eventually cause injury to brain tissue.

The preliminary results have not been reviewed by other physicians or published in a medical journal, so it's difficult to draw conclusions about the theory and the prospects for a new treatment. But Zivadinov expressed "cautious optimism."

Zivadinov and other Buffalo physicians plan to start treating some MS patients for the blockages as part of another study scheduled to start in March.

National MS societies have taken a wait-and-see approach to the vein condition while offering grants for research. It is still unclear whether the vein abnormality is a cause of MS or a result of having the disease.

In a recent interview, Dr. John R. Richert, executive vice president of research and clinical programs at the National Multiple Sclerosis Society, said that the theory should be more fully explored with urgency but warned that the MS field is full of therapies that looked promising in the early stages yet didn't hold up.

The Buffalo study, estimated to cost \$5 million, is seeking a grant, and a panel of experts organized by the MS societies is expected to make grant-funding decisions in June.

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