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**High rates of vein blockages found in MS patients**

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CTV.ca News Staff

Researchers in Buffalo, N.Y., have discovered that people with multiple sclerosis are more than twice as likely to have abnormal blood flow in the veins in their head and necks.

Neurology researchers at the University at Buffalo reported Wednesday preliminary results of the first clinical study to test for

a new and controversial vascular condition called CCSVI, or chronic cerebro-spinal venous insufficiency.

Using Doppler scan ultrasounds and MRIs, researchers at The Buffalo Neuroimaging Analysis Center analyzed the veins of 500 adults and children. The group included patients with MS, clinically isolated syndrome (a condition that is sometimes an early indicator of MS), other neurologic diseases, and healthy patients.

They found that more than 55 per cent of the MS patients had narrowed neck veins, causing restriction of normal outflow of blood from the brain. That compared to 25.9 per cent of healthy patients.

Dr. Robert Zivadinov, the principal investigator of the study and the BNAC director, said he was "cautiously optimistic and excited" about the preliminary data.

"The data encourage us to continue on the same course," he said in a University of Buffalo news release.

"They show that narrowing of the extracranial veins, at the very least, is an important association in multiple sclerosis. We will know more when the MRI and other data collected in the CTEVD study are available."

The results are the first data to come from the Combined Transcranial and Extracranial Venous Doppler Evaluation (CTEVD) study, which began at the University of Buffalo in April, 2009. An independent statistician is now analyzing the data. The complete results will be presented at the American Academy of Neurology meeting in April.

**Ultrasounds and MRI scans used**

All participants in the study underwent ultrasound scans of their head and necks while in different body postures. MS patients – most of whom has the relapsing-remitting form of the disease -- also underwent MRI scans of their brain to measure iron deposits in lesions and surrounding areas of the brain, using a method called susceptibility-weighted imaging.

The researchers looked for five criteria of restricted blood flow in the neck veins; patients who had at least two of the criteria were considered to have CCSVI.

When the 10.2 per cent subjects who met only one of the criteria were included in the "normal" category, the CCSVI prevalence was 56.4 per cent in MS subjects and 22.4 per cent in healthy controls.

The researchers found there was a direct association with the presence of CCSVI in the MS patients and disease progression.

As for why 22.4 per cent of the healthy patients also met the criteria for CCSVI, Zivadinov said more study was needed to explain the finding.

Zivadinov's team is now planning to examine 500 more subjects for a second phase of the study that will use more advanced diagnostic tools.

Screening for the presence of CCSVI is the first step in determining how the condition might be related to or contribute to MS. CCSVI is a term created by Italian researcher Dr. Paolo Zamboni, who believes that blocked veins in the neck and chest of MS patients lead to blood

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drainage problems and triggers the immune responses and brain lesions that mark MS.

Zamboni contends that angioplasty surgery on these blocked veins, a procedure he calls the Liberation Treatment, can then open the veins and reduce or halt MS symptoms in patients.

Reached by phone in the U.S where he is attending scientific meetings, Zamboni said he is heartened by Zivadinov's team's findings.

"This confirms there is a highly significant difference between MS patients and controls and that it [CCSVI] is a major risk of [MS] development," he told CTV News.

The MS Society of Canada said they reviewed the results from the Buffalo study "with interest" but noted that the data were preliminary and hadn't been peer-reviewed.

"Importantly, these findings differ from the original premise that all people with MS have CCSVI and that people without MS do not. However, the results confirm the need for further research as they show a moderate association between CCSVI and MS," Dr. Paul O'Connor, national clinical and medical advisor to the MS Society of Canada told CTV News.

"The results also show that CCSVI is not present in all people with MS – 43.6% of people with MS did not meet the criteria for CCSVI. This is an important note as we've always understood MS to be a very complex disease with multiple contributing factors. It is interesting to observe that many people without MS have the condition as well."

### Interest in CCSVI growing

Interest in the CCSVI theory exploded after CTV's W5 aired a report in November by medical specialist Avis Favaro on Zamboni's work.

Zivadinov, who worked on an early study with Zamboni, says his office was contacted by more than 8,000 MS patients in the three weeks after the W5 episode aired.

Because of the overwhelming demand from MS patients, the Buffalo Neuroimaging Analysis Center recently announced it will begin to offer testing for CCSVI in mid-February. Zivadinov told CTV News in an interview before Wednesday's data was released that several hundred people have already signed up for the testing.

"Clearly we need to allow the people to have a diagnostic procedure even if they don't have a chance to enter our study," he said.

A group of researchers at the University of British Columbia Hospital's MS Clinic, part of the Vancouver Coastal Health Authority, are also planning to study the theory, using a variety of imaging techniques, and are currently awaiting funding.

The team of doctors from McMaster University in Hamilton, St. Joseph's Healthcare and Hamilton Health Sciences are also planning to begin patient trials. They have applied for funding from the MS Society of Canada to test 100 MS patients and 100 healthy people.

The Hamilton researchers say they have already had more than 22,000 MS patients from around the world asking to enter the study. They are seeking further funding to expand the research.

The MS Society of Canada has offered to fund proposals on CCSVI and MS through its special call for research applications. Funding announcements will be made in June, 2010.



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