Blacks with MS have more severe symptoms, decline faster than whites

February 5 2010

Fewer African Americans than Caucasians develop multiple sclerosis (MS), statistics show, but their disease progresses more rapidly, and they don't respond as well to therapies, a new study by neurology researchers at the University at Buffalo has found.

Magnetic resonance images (MRI) of a cohort of 567 consecutive MS patients showed that blacks with MS had more damage to brain tissue and had less normal white and grey matter compared to whites with the disease.

Results of the study were published ahead of print on Jan. 20 at http://www.neurology.org and appear in the Feb. 16 issue of the journal *Neurology*.

Bianca Weinstock-Guttman, MD, UB associate professor of neurology in the UB School of Medicine and Biomedical Sciences, is first author on the study. Weinstock-Guttman directs the Baird Multiple Sclerosis Center in Kaleida Health's Buffalo General Hospital.

"Black patients showed more brain tissue damage and accumulated brain lesions faster than whites, along with rapid clinical deterioration," confirms Weinstock-Guttman. "The results provide further support that black patients experience a more severe disease, calling for individualized therapeutic interventions for this group of MS patients."

"White matter" refers to the parts of the brain that contain nerve fibers

sheathed in a white fatty insulating protein called myelin. The white matter is responsible for communication between the various grey matter regions, where nerve cells are concentrated and where cognitive processing occurs.

"Initially, multiple sclerosis was considered primary a white-matter disease," says Weinstock-Guttman, "but today we know that the gray matter may be more affected than white matter."

In general, black MS patients tend to have more severe and more frequent attacks, followed by an incomplete recovery even after the first episode. Studies on signs and symptoms of MS among populations have shown that blacks experience gait problems sooner after their diagnosis, show faster cognitive decline than whites with MS, and become dependent on a wheelchair sooner, she notes.

The study's MRI scans were conducted at the Buffalo Neuroimaging Analysis Center (BNAC), part of the Jacobs Neurological Institute/UB Department of Neurology. Robert Zivadinov, MD, PhD, a UB associate professor of neurology, is director of the center.

Seventy-nine black patients and 488 white patients were entered in the study. Participants were older than 18 and had been scanned within 90 days of their most recent clinical visit. Black participants were significantly younger, and their disease was more severe than white patients, despite having MS for a shorter amount of time.

"Results of the MRI scans showed that the aggressive disease process in blacks appears to be associated with increased macroscopic and microscopic tissue damage, as measured by specific MRI parameters," says Weinstock-Guttman.

"Based on our MRI findings, a plausible hypothesis that would explain

the more aggressive disease in blacks compared to whites with MS may be that blacks have a reduced capacity for remyelination, the brain's ability to repair the protective myelin sheath. However, to confirm this hypothesis, we will need to conduct more longitudinal studies."

Provided by University at Buffalo