MedicalXpress

Combination therapy including antibiotics may be beneficial for multiple sclerosis

December 10 2007

A preliminary study suggests that combining a medication currently used to treat multiple sclerosis with an antibiotic may slow the progress of the disease, according to an article posted online today that will appear in the February 2008 print issue of *Archives of Neurology*, one of the JAMA/Archives journals.

"Multiple sclerosis (MS) is an immune-mediated disorder that affects genetically susceptible individuals after exposure to certain, as yet unidentified environmental antigens," or disease-causing agents, the authors write as background information in the article. The development of MS involves inflammation that destroys parts of the brain along with progressive degeneration of brain tissue.

The most common type is relapsing-remitting MS, in which patients experience attacks of symptoms such as muscle weakness and spasms followed by periods of symptom-free remission. Many patients with relapsing-remitting MS who take interferon, a medication that boosts the immune system and fights viruses, still experience relapses and may continue to develop new areas of damaged brain tissue (lesions) visible on magnetic resonance imaging (MRI).

Alireza Minagar, M.D., of Louisiana State University Health Sciences Center, Shreveport, and colleagues conducted a single-center trial involving 15 patients (average age 44.5) with relapsing-remitting MS who had been taking interferon for at least six months and were experiencing symptoms and developing new brain lesions. For four

months, participants took 100 milligrams daily of the antibiotic doxycycline in addition to continuing interferon therapy. They underwent monthly neurological examinations, MRI to detect brain lesions and blood work to monitor safety.

After four months, the combination treatment resulted in fewer lesions visible on MRI—60 percent of the patients had more than a one-fourth reduction in the number of lesions from the beginning of the study. The patients also had reduced average scores on a scale designed to assess disability levels. Only one patient relapsed; adverse effects were mild and included only known effects of the two drugs individually rather than new effects associated with combining the medications.

Antibiotics in the tetracycline family, including doxycycline, may be effective against MS and other inflammatory diseases by inhibiting the action of enzymes that destroy certain nervous system cells, protecting the brain and increasing the effectiveness of the immune system, the authors note.

Source: JAMA and Archives Journals