Drug shows promise in slowing multiple sclerosis

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Research appearing in the *New England Journal of Medicine* could herald a new treatment approach for individuals with multiple sclerosis (MS) if confirmed in future studies. The results of a clinical trial, which

involved researchers from the University of Rochester Medical Center (URMC), showed that the drug ibudilast slowed the brain shrinkage associated with progressive forms of the disease.

"These results indicate that ibudilast may be effective in protecting the central nervous system and slowing the damage to the brain that is caused by MS," said URMC neurologist Andrew Goodman, M.D., a co-author of the study who served on the national steering committee for the Phase II clinical trial, dubbed SPRINT-MS. "While more clinical research is necessary, the trial's results are encouraging and point towards a potential new type of therapy to help people with progressive MS."

MS is a neurological disorder in which the body's own immune system attacks myelin, the fatty tissue that insulates the nerve fibers in the brain and spinal cord. These attacks are caused by inflammation which damages myelin, disrupting communication between nerve cells and leading to cognitive impairment, muscle weakness, and problems with movement, balance, sensation, and vision. MS usually presents with a relapsing-remitting course, in which symptoms occur then disappear for weeks or months and then may reappear, or primary and secondary progressive courses, which are marked by a gradual decline in function.

While there are more than a dozen approved therapies for relapsing forms of MS, treatment options for progressive MS are very limited and it is unclear whether any of the existing treatments can slow the gradually worsening symptoms of the disease process.

Ibudilast has been available in Japan and other Asian countries for more than two decades as a treatment for asthma and post-stroke symptoms. The drug is a small molecule taken orally that acts to suppress proteins called cytokines that promote inflammation and it is speculated that it may help limit the brain damage that occurs in MS.

The study involved 255 individuals specifically selected with progressive MS who were randomized into groups who either took ibudilast or placebo pills every day for 96 weeks. Every six months, the participants underwent MRI brain scans. The researchers found that the drug slowed overall brain atrophy – or shrinkage – that is associated with MS by 48 percent compared to those that took the placebo.

"These findings provide a glimmer of hope for people with a form of multiple sclerosis that causes long-term disability but does not have many treatment options," said Walter J. Koroshetz, M.D., director of National Institute of Neurological Disorders and Stroke (NINDS)

Provided by University of Rochester Medical Center