Widely used cholesterol-lowering drug may prevent progression

29 October 2009

Simvastatin, a commonly used, cholesterol-lowering drug, may prevent Parkinson's disease from progressing further. Neurological researchers at Rush University Medical Center conducted a study examining the use of the FDA-approved medication in mice with Parkinson's disease and found that the drug successfully reverses the biochemical, cellular and anatomical changes caused by the disease.

"Statins are one of the most widely used cholesterol-lowering drugs throughout the world," said study author Kalipada Pahan, PhD, professor of neurological sciences at Rush University Medical Center. "This may be a safer approach to halt the disease progression in Parkinson's patients."

Pahan and colleagues from Rush, along with researchers at the University of Nebraska Medical Center in Omaha published these findings in the October 28 issue of the *Journal of Neurosciences*.

The authors have shown that the activity of one protein called p21Ras is increased very early in the midbrain of mice with Parkinson's pathology. Simvastatin enters into the brain and blocks the activity of the p21Ras protein and other associated toxic molecules, and goes on to protect the neurons, normalize neurotransmitter levels, and improves the motor functions in the mice with Parkinson's.

"Understanding how the disease works is important to developing effective drugs that protect the brain and stop the progression of Parkinson's," said Pahan. "If we are able to replicate these results in Parkinson's patients in the clinical setting, it would be a remarkable advance in the treatment of this devastating neurodegenerative disease."

The study was supported by grants from National Institutes of Health and Michael J. Fox Foundation for Parkinson's Research.

Parkinson's is a slowly progressive disease that affects a small area of cells within the mid-brain known as the substantia nigra. Gradual degeneration of these cells causes a reduction in dopamine, which is a vital chemical neurotransmitter. The decrease in dopamine results in one or more of the classic signs of Parkinson's disease that includes, resting tremor on one side of the body, generalized slowness of movement, stiffness of limbs, and gait or balance problems. The cause of Parkinson's disease is unknown. Both environmental and genetic causes of the disease have been postulated.

Parkinson's disease affects about 1.2 million patients in the United States and Canada. Although 15 percent of patients are diagnosed before age 50, it is generally considered a disease that targets older adults, affecting one of every 100 persons over the age of 60. This disease appears to be slightly more common in men than women.

Source: Rush University Medical Center (news : web)