



Cholesterol drug counters MS symptoms in mice

By E.J. Mundell

NEW ORLEANS, Apr 22 (Reuters Health) - Studies in mice suggest that popular cholesterol-lowering statin drugs might someday double as treatment for [multiple sclerosis \(MS\)](#).

Mice prone to a multiple sclerosis-like disease showed reversal or prevention of symptoms after being fed daily doses of [Lipitor](#) (atorvastatin), according to researcher Dr. Sawsan Youssef of Stanford University, California.

His team concluded that Lipitor--and drugs like it--"may have a role in the treatment of multiple sclerosis and other autoimmune diseases."

The results were presented here Saturday at the annual Experimental Biology 2002 conference.

No one knows what causes multiple sclerosis, which occurs when the body's immune system attacks the protective myelin sheath surrounding nerve fibers in the brain and spine. Symptoms of multiple sclerosis include muscle weakness and stiffness, balance and coordination problems and numbness and vision disturbances.

Previous studies have suggested that the statin class of cholesterol-lowering medications can help modulate immune function. In their study, Youssef's team fed Lipitor to a group of mice bred to develop a disease called experimental autoimmune encephalomyelitis (EAE), which is an autoimmune condition used by researchers as a model for multiple sclerosis because it also results in the slow erosion of myelin.

According to the researchers, daily feedings of Lipitor "reversed paralysis" in rodents with the chronic form of EAE, and seemed to prevent relapses in mice prone to an on-again/off-again form of the disease.

The scientists then took a close look at segments of the animals' brains and spinal cords under the microscope. They observed a "significant reduction" in the number of lesions associated with EAE, "as well as the extent of infiltration of those lesions."

Just how Lipitor--currently the world's top-selling anti-cholesterol drug--might

work to prevent or reverse myelin destruction remains unclear.

"Lipitor may have several (or different) beneficial effects," Youssef told Reuters Health. By inhibiting the production of cytokines--immune system chemicals that trigger inflammation--Lipitor "may reduce inflammation and it may also have a neuroprotective role," he explained.

Youssef stressed that "although these results are exciting and promising, it is the clinical (human) trials that will determine how efficacious statin treatment may be" in treating multiple sclerosis. Just such a trial is in the planning stages, he said.

The study was funded by grants from the US National Institutes of Health and the National MS Society.

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