

SOUTHWESTERN NEWS

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UT SOUTHWESTERN RESEARCHERS DISCOVER HOW COMMON MULTIPLE SCLEROSIS DRUG SLOWS PROGRESSION OF THE DISEASE

DALLAS – March 25, 2002 – A common drug given to multiple sclerosis patients appears to stimulate weakened immune system cells, according to a study published by researchers at UT Southwestern Medical Center at Dallas.

While Copaxone, or glatiramer acetate, has long been known to slow or stop the progression of attacks in MS patients, researchers have not known exactly how the drug treated the disease. In the March issue of the *Journal of Clinical Investigation*, lead author Dr. Nitin Karandikar, UT Southwestern assistant professor of pathology and neurology, and colleagues report that Copaxone appears to stimulate a certain type of T cell in MS patients.

Produced by the thymus gland, T cells are white blood cells that fight infection and, in healthy people, coordinate the body's immune response. There are two types of T cells, CD4 and CD8 cells. Both are involved in the immune process that underlies MS and, in MS patients, the cells function abnormally to give rise to this disease.

The researchers used flow cytometry to analyze cells taken from MS patients and were able to see the T cells rallying under the effect of Copaxone.

They saw something else that surprised them.

“The CD8 cells responded to the Copaxone in MS patients, which we did not expect to see,” said senior author Dr. Michael Racke, UT Southwestern associate professor of neurology.

In the study, researchers also used a new type of test that allowed them to study the weakened immune cells much more effectively. CD8 cells, which typically do not grow well in a tissue culture, were taken directly from the patient instead of being grown by researchers, making their response to Copaxone easier to monitor. The researchers found that CD8 responses to Copaxone were weaker in untreated MS patients and were stimulated by treatment with the drug.

“Previous studies had focused on CD4 cells in this disease,” Karandikar said. “This new

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approach enabled us to effectively evaluate both CD4 and CD8 cells taken directly from patients.

MS is an autoimmune disorder that attacks the central nervous system. It damages the myelin sheath, the protective material that surrounds the nerve fibers in the brain, spinal cord and optic nerves. The illness causes numbness, weakness, visual blurring and slurred speech, among other symptoms. The most common neurological disease among young adults, MS typically strikes between the ages of 20 and 40. The exact cause of MS is unknown, and there is no cure or way to prevent it.

Other UT Southwestern authors include Michael Crawford, research technician; Drs. Xiao Yan, instructor of pathology; Amy E. Lovett-Racke, instructor of neurology; Elliot M. Frohman, associate professor of neurology; and Peter Stastny, professor of internal medicine.

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