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SCIENTISTS ARE CONSIDERING TRIALS
TO TEST A PLANT-BASED COMPOUND
FOR TREATING MULTIPLE SCLEROSIS.

RX for MS?

Several high-powered medications have been formulated to treat the symptoms of multiple sclerosis (MS), an incurable autoimmune disease that attacks the central nervous system and plagues 400,000 Americans.

But red grapes—or more specifically, resveratrol, a substance found in red grapes and some other plants—might provide a promising treatment protocol and with fewer side effects.

Current medications used to treat MS often “decrease the body’s immune mechanisms in order to suppress the immune system’s attack on the brain [that occurs in MS],” said **Davitt Mrelashvili, MD**, an assistant professor of neurology at the USC School of Medicine who sees several hundred MS patients annually.

Finding another treatment is behind proposed clinical trials with Mrelashvili’s patients in collaboration with **Prakash Nagarkatti, Ph.D.**, a Carolina Distinguished Professor in the School of Medicine’s Department of Pathology, Microbiology, and Immunology, and other colleagues in the School of Medicine.

The group has received Institutional Review Board (IRB) approval to begin clinical studies this spring. After the in-vitro studies are complete, IRB approval will be sought for clinical trials.

Using a five-year, \$6 million grant from the National Center for Complementary and Alternative Medicine of the National Institutes of Health (NIH), Nagarkatti, with **Narendra P. Singh, Ph.D.**, **Udai P. Singh, Ph.D.**, **Lorne J. Hofseth, Ph.D.** (S.C. College of Pharmacy), **Robert L. Price, Ph.D.**, and **Mitzi Nagarkatti, Ph.D.**, have been studying

ways that botanical dietary supplements can effectively suppress inflammation, which plays a key role in MS.

In particular, the researchers have published papers on the beneficial effect of resveratrol on MS, as well as other inflammatory diseases such as colitis. And they have an interest in what effect resveratrol might have on hepatitis and lupus, and as an overall anti-aging agent.

“Our long-term goal is arriving at an understanding of how the constituents in botanical dietary supplements like resveratrol can suppress inflammation and how the mechanisms act,” Prakash Nagarkatti said.

Preliminary experiments on laboratory mice have shown that resveratrol suppressed the clinical symptoms of MS and identified how resveratrol mediated the effect and the receptors through which it acts. That’s led to the next step of proposals to take the research from bench to bedside, and talks with Mrelashvili about enrolling his MS patients in further study of clinical benefits derived from resveratrol.

“We have the clinicians who can take care of these patients and be able to provide us with the samples to see whether these compounds can really suppress inflammation in the patients,” Nagarkatti said. “We’re generating preliminary data that will confirm our experimental observations leading to further insights into prevention and treatment of the disease. Such studies are strongly encouraged by NIH institutes such as the National Center for Complementary and Alternative Medicine.”

There are about 80 different autoimmune or inflammatory diseases in which the human immune system destroys cells and tissues.

“Right now, we don’t have any proper medications to suppress them or give relief to patients, and people are turning to complementary supplements,” Nagarkatti said. “Through this research we may discover some unique compounds that might have altogether new pathways of suppressing inflammation.”

Fifty percent of prescribed drugs used to effectively treat patients are derived from plant products, Nagarkatti said, which indicates that dietary supplements already being used by the public, though not approved by the FDA, represent a significant resource deserving of future study.

“It’s important to look at those plant products, which are believed to be used successfully, and through research see if we can identify certain constituents and show whether they are really effective,” he said.

The NIH is interested in randomized, controlled clinical trials of herbal products that have traditionally been given on an individual basis in India, China, and elsewhere because part of their effectiveness could be nothing more than placebo effect, Nagarkatti said.

“There has been a holistic approach to treatment with these substances, but nobody has done clinical trials or used randomized, controlled studies to properly evaluate their effectiveness,” he said. “That is why the NIH is interested in this research being done in an academic setting.” ■