

Could estriol be the elixir for MS?

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It has long been common knowledge that pregnant women with multiple sclerosis (MS) experience a sharp drop in the disease's symptoms during the course of their pregnancy.

Some years back, Dr. Rhonda Voskuhl, director of UCLA's Multiple Sclerosis Program, and her colleagues discovered the cause. They found that a female sex hormone called estriol, which is produced during pregnancy, was responsible for the suppression. Four years ago, Voskuhl followed that discovery with a pilot study in which 10 non-pregnant women with MS were given estriol, yielding what she described as "pretty remarkable" results — an 80 percent drop in inflammatory lesions in the brain, a hallmark of the disease.

This month, Voskuhl begins a much larger trial of estriol, one that will involve 150 patients at multiple locations over the next two years. The prospects, she said, are exciting.

Multiple sclerosis is an autoimmune disease of the central nervous system that attacks the tissue surrounding the brain's nerve fibers. This tissue, called myelin, can be thought of as the insulation wrapped around an electrical wire. When the myelin is damaged, the nerve's ability to send signals to and from the brain is interfered with, resulting in symptoms common to MS, including problems with balance, memory, vision loss and more.

Currently, anti-inflammatory drugs used to treat MS lessen the symptoms and slow the progression of the disease. But they must be

given by injection daily, weekly or monthly — depending on the drug — and are expensive, costing between \$12,000 to \$24,000 a year.

Estriol is a hormone produced by the placenta that is virtually undetectable until pregnancy, when it progressively increases. It is thought that its role is to suppress a woman's immune system when she is pregnant, so that the fetus will not be seen by the body as a foreign "invader."

"The beauty of estriol is that it can be given as a pill, not a shot, and also that it's not a new drug; it has decades of safety behind it," said Voskuhl, who holds the Jack H. Skirball Chair for Multiple Sclerosis in the UCLA Department of Neurology. For years estriol has been in widespread use in Europe and Asia as hormone replacement therapy for women with menopausal symptoms. The fact that the pill already exists, she said, should dramatically reduce the cost of treatment.

Most important of all, though, is that the drug potentially provides a one-two punch against MS, both reducing the ability of immune cells to attack the brain, as well as making the brain more resistant to damage if any immune cells do make it through.

"It's a two-pronged approach an anti-inflammatory prong to reduce the attacks, but also a neuroprotective prong to make the brain suffer less damage in case of an attack," said Voskuhl.

In all, seven institutions from around the nation will be involved in the two-year study. The investigators plan to recruit 150 women who have not previously been treated for MS. They will be given either estriol along with Copaxone, an MS drug currently in use, or a placebo along with Copaxone. "That way, no one will receive less than the standard of care," Voskuhl said. The team will measure relapse rates over the course of the trial.

Source: University of California - Los Angeles

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