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Original Articles

Treatment of multiple sclerosis with the pregnancy hormone estriol

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Abstract

Multiple sclerosis patients who become pregnant experience a significant decrease in relapses that may be mediated by a shift in immune responses from T helper 1 to T helper 2. Animal models of multiple sclerosis have shown that the pregnancy hormone, estriol, can ameliorate disease and can cause an immune shift. We treated nonpregnant female multiple sclerosis

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patients with the pregnancy hormone estriol in an attempt to recapitulate the beneficial effect of pregnancy. As compared with pretreatment baseline, relapsing remitting patients treated with oral estriol (8mg/day) demonstrated significant decreases in delayed type hypersensitivity responses to tetanus, interferon- γ levels in peripheral blood mononuclear cells, and gadolinium enhancing lesion numbers and volumes on monthly cerebral magnetic resonance images. When estriol treatment was stopped, enhancing lesions increased to pretreatment levels. When estriol treatment was reinstituted, enhancing lesions again were significantly decreased. Based on these results, a larger, placebo-controlled trial of estriol is warranted in women with relapsing remitting multiple sclerosis. This novel treatment strategy of using pregnancy doses of estriol in multiple sclerosis has relevance to other autoimmune diseases that also improve during pregnancy.

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