

## **High-dose immunosuppressant drug may reduce disability in MS patients**

June 9 2008

Treatment with high doses of the immunosuppressant drug cyclophosphamide appears to reduce disease activity and disability in individuals with aggressive multiple sclerosis, according to an article posted online today that will appear in the August 2008 print issue of *Archives of Neurology*.

Multiple sclerosis (MS) is an inflammatory disease in which the protective coating covering nerve cells degenerates, presumably because of autoimmune causes (in which the body attacks itself), according to background information in the article. Four subtypes of MS have been identified, each with a distinct autoimmune process. Because of these different disease types, immune-related therapies to treat MS have been suboptimal.

Cyclophosphamide, which affects the function of immune cells known as T and B cells, has been used to treat MS with mixed results. It is often combined with bone marrow transplantation. Chitra Krishnan, M.H.S., of the Bloomberg School of Public Health, Johns Hopkins University, Baltimore, and colleagues studied high doses of the drug without bone marrow transplantation in a two-year open-label trial involving nine patients (six men, three women, average age 35) with aggressive relapsing-remitting MS. Relapsing-remitting is the most common type of MS, in which patients experience periods of symptoms followed by periods of symptom-free remission. The patients received 50 milligrams per kilogram per day of cyclophosphamide intravenously for four consecutive days.



Over an average of 23 months of follow-up, there were no deaths or unexpected or serious adverse events. The patients experienced an average 39.4 percent reduction in disability and an 87 percent improvement in scores on a composite test measuring physical and mental function. In addition, magnetic resonance imaging (MRI) showed a decrease in the average number of MS-related brain lesions, from 6.5 to 1.2 lesions.

"High-dose cyclophosphamide treatment of patients with aggressive MS was safe and well tolerated and did not lead to excess morbidity or accelerated brain atrophy," the authors write. "Moreover, high-dose cyclophosphamide induced a functional improvement in most of the patients we studied. In many of those patients, the functional improvement was sustained through the length of the study (up to 24 months) despite the absence of any immunomodulatory therapies beyond the initial high-dose cyclophosphamide treatment."

Source: JAMA and Archives Journals

Citation: High-dose immunosuppressant drug may reduce disability in MS patients (2008, June 9) retrieved 6 May 2024 from https://medicalxpress.com/news/2008-06-high-dose-immunosuppressant-drug-disability-ms.html

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