# Asthma medication may benefit patients with multiple sclerosis

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Adding albuterol, a compound commonly used to treat asthma and other respiratory diseases, to an existing treatment for patients with multiple sclerosis appears to improve clinical outcomes, according to a report in the September issue of *Archives of Neurology*.

Multiple sclerosis (MS) is a chronic inflammatory disease characterized by the degeneration of myelin, which coats nerve cells in the white matter of the central nervous system. Patients with the condition have been found to have elevated levels of interleukin-12, a biological compound that promotes the generation of a type of helper T cell that may be associated with myelin destruction.

Albuterol sulfate—commonly used to treat bronchospasm, a constriction of the airways within the lungs as often occurs in asthma—may decrease interleukin-12 levels, the authors note. Samia J. Khoury, M.D., of Brigham and Women's Hospital and Harvard Medical School, Boston, and colleagues assessed the effects of albuterol treatment as an add-on therapy for patients starting treatment with glatiramer acetate, currently approved as a therapy for relapsing-remitting MS.

A total of 44 patients were randomly assigned to receive daily subcutaneous (underneath the skin) 20-milligram injections of glatiramer acetate plus either an oral dose of 4 milligrams of albuterol or placebo daily for two years. Participants were examined by a neurologist at the beginning of the study and at six, 12, 18 and 24 months, and blood samples were collected at the beginning and three, six and 12 months

into the study. Magnetic resonance imaging (MRI) of the brain was performed at enrollment, 12 months and 24 months.

A total of 39 patients participated long enough to contribute to the analysis. In assessments of functional status, improvement was observed in the glatiramer acetate plus albuterol group compared with the placebo group at six months and 12 months but not at 24 months. Compared to patients taking placebo, those taking albuterol also experienced a delay in the time to their first relapse.

Blood tests showed that the production of two inflammatory markers—interleukin-13 and interferon-gamma—decreased in both treatment groups, with a treatment effect on interleukin-13 observed at the 12-month time point.

Adverse events were generally mild, with only three moderate or severe events that were considered to be related to the treatment (including reaction at the glatiramer acetate injection site, leg weakness and chest tightness).

"We conclude that treatment with glatiramer acetate plus albuterol is well tolerated and improves clinical outcomes in patients with multiple sclerosis," the authors write. "The combined regimen seems to enhance clinical response during the first year of therapy."

**More information:** Arch Neurol. 2010;67[9]:1055-1061.

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