

# Medical Update Memo

July 29, 2010

**Lamotrigine for neuroprotection in secondary progressive multiple sclerosis: a randomised, double-blind, placebo-controlled, parallel-group**

## Summary

In this clinical trial, the authors have looked at the role of lamotrigine, a drug that has proved effective in protecting neurons in animal models of MS, in protecting neurons in people with secondary progressive MS. In particular, they studied the effects of this drug compared with placebo on brain volume, and also its impact on the clinical deterioration of the patients over two years. **Raj Kapoor, Julian Furby, Thomas Hayton, Kenneth J Smith, Daniel R Altmann, Robert Brenner, Jeremy Chataway, Richard AC Hughes.** *Lancet Neurol.* 2010 Jul;9(7):681-8. Epub 2010 Jun 8

## Details

Patients with secondary progressive multiple sclerosis who attended the National Hospital for Neurology and Neurosurgery or the Royal Free Hospital, London, UK, were eligible for inclusion in this double-blind, parallel-group trial. Patients were randomly assigned to receive lamotrigine (target dose 400 mg/day) or placebo for 2 years. Treating physicians, evaluating physicians, and patients were blinded to treatment allocation. The primary outcome was the rate of change of partial (central) cerebral volume over 24 months. All patients who were randomly assigned were included in the primary analysis.

120 patients were randomly assigned to treatment (87 women and 33 men): 61 to lamotrigine and 59 to placebo. 108 patients were analysed for the primary endpoint: 52 in the lamotrigine group and 56 in the placebo group.

The effect of lamotrigine on cerebral volume of patients with secondary progressive multiple sclerosis did not differ from that of placebo over 24 months, but lamotrigine seemed to cause early volume loss that reversed partially on discontinuation of treatment. They also found that it reduced the clinical deterioration as measured by the walking speed, but did not affect other clinical measures. Further studies are needed to further evaluate the potential effects of this drug.

Future trials of neuroprotection in multiple sclerosis should include investigation of complex early volume changes in different compartments of the CNS, effects unrelated to neurodegeneration, and targeting of earlier and more inflammatory disease.

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