STROKE

B vitamins show benefit in absence of antiplatelet therapy

In 2010, the vitamins to prevent stroke (VITATOPS) trial found no beneficial effect of daily B vitamin supplementation for the secondary prevention of major vascular events. However, a recent post-hoc analysis of data from this trial has revealed a beneficial effect of B vitamins in patients who were not receiving antiplatelet therapy.

Homocysteine is an endogenous amino acid present in plasma, and breakdown of this molecule requires the presence of B vitamins, such as folic acid. High levels of homocysteine in the serum has been associated with an increased risk of many neurological and vascular disorders, such as Alzheimer disease and stroke.

The VITATOPS trial, involving 8,164 patients with recent stroke or transient ischaemic attack, found no effect of daily B vitamin supplementation over placebo for preventing secondary major vascular events. After studying outcomes in other trials of homocysteine-lowering therapies, Graeme Hankey and colleagues from the VITATOPS study group hypothesized that antiplatelet therapy—a treatment that about 80% of patients in the VITATOPS trial were receiving—could have modified the beneficial effect of B vitamins on homocysteine levels.

In the post-hoc analysis, published in *Lancet Neurology*, Hankey *et al.* investigated the effect of B vitamin treatment versus placebo on the primary outcomes—secondary stroke, myocardial infarction, or death from vascular causes—after separating the patient data into two groups: those who were receiving antiplatelet therapy at baseline, and those who were not.

For patients who were taking antiplatelet medication at baseline, no statistically significant difference was observed between the placebo and B-vitamin groups in the incidence

of primary outcomes (14.8% versus 15.7%). However, in those not receiving antiplatelet therapy at baseline, B-vitamin treatment was associated with a statistically significant reduction in primary outcome events compared with placebo (16.8% versus 21.0%).

For patients in the B-vitamin group, plasma homocysteine levels were lower after treatment, irrespective of antiplatelet medication status, but the increase in vitamin B₁₂ levels was statistically significant only in those not receiving antiplatelet drugs.

“...B-vitamin treatment was associated with a statistically significant reduction in primary outcome events...”

Hankey *et al.* concluded that antiplatelet therapy modified the effect of B vitamins on the primary outcome, but acknowledged that the mechanism underlying this drug interaction is unclear. Notably, use of antiplatelet therapy at baseline was associated with the lowest overall risk of major vascular events.

The findings suggest that B vitamins may be beneficial for secondary prevention of vascular events in patients who are allergic to, or intolerant of, antiplatelet therapies, or for conditions in which antiplatelet administration is contraindicated, such as in haemorrhagic stroke.

Katy Malpass

Original article Hankey, G. J. *et al.* Antiplatelet therapy and the effects of B vitamins in patients with previous stroke or transient ischaemic attack: a post-hoc subanalysis of VITATOPS, a randomised, placebo-controlled trial. *Lancet Neurol.* doi:10.1016/S1474-4422(12)70091-1