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IADSA SCIENTIFIC REPONSE - IADSA SCIENTIFIC ALERT SERVICE (ISAS)

Authors: Martí-Carvajal AJ, Solà I, Lathyris D, Salanti G.
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Issue: Benefit of B Vitamins for reducing cardiovascular events
Publication Date: 7 October 2009

Study conclusions:

A Cochrane Scientific Review has reported that homocysteine-lowering trials using a combination of vitamins B6, B12 and folic acid was not helpful in reducing the risk of cardiovascular events such as myocardial infarction, stroke or mortality by any cause. The review included eight randomised controlled trials equivalent to 24,210 subjects.

Response:

1. Only five of the eight studies in the review measured the blood homocysteine levels at baseline and after B vitamins intake. There was only moderate elevation in homocysteine level, as shown by the mean starting level of 12.4 umol/L. Hyperhomocysteinemia happens when the plasma homocysteine level goes above 15 umol/L, however none of the study subjects had mean values above this level. A recent study has also shown that B vitamins can significantly lower cardiovascular related mortality in patients with hyperhomocysteinemia but not those with homocysteine level below 15 umol/L (1).
2. Elevated homocysteine level is a marker of mortality and CVD events in patients with pre-existing CVD risk factors. In the literature, evidence is insufficient to conclude a link between moderately raised levels of homocysteine and risk of CVD events. Furthermore, there was no difference in the incidence of heart attack or stroke or mortality in the review between subjects given the B vitamins and control group.

3. Subjects were not homogenous in their health status, their cardiovascular risk conditions were different. Some had established CVD, others were at risk of CVD.
4. Varying doses of folic acid, B6 and B12 were administered across the different studies. The control group in one of the studies was also taking B vitamins though in lower doses.
5. There is significant body of scientific literature to demonstrate that there is a link between B vitamins and a reduced risk of cardiovascular mortality. This review is in conflict with scientific literature already published. The review is therefore not reaching a balanced conclusion.

Other issues:

The studies covered by the review relate to secondary prevention. A further study which really could add value to the body of scientific knowledge would be a primary prevention study on people without pre-existing cardiovascular disease.

8 October 2009

Reference

1. Mager A et al. Impact of Homocysteine-Lowering Vitamin Therapy on Long-term Outcome of Patients with Coronary Artery Disease. Am J Cardiol 2009; 104: 745-749.