Nutraceutical approaches to homocysteine lowering in hypertensive subjects at low cardiovascular risk: a multicenter, randomized clinical trial.

Mazza A, Cicero AF, Ramazzina E, Lenti S, Schiavon L, Casiglia E, Gussoni G.

Abstract
Although the role of homocysteine (HCys) in secondary cardiovascular prevention has been scaled down, hyper-homocysteinemia remains a risk factor for cerebrovascular events. The aim of this study was to investigate the efficacy of nutraceuticals in lowering HCys serum levels versus a conventional vitamin supplementation in hypertensive subjects at low cardiovascular risk. One-hundred and four patients (mean age 62.8±14.5 years, 63.5% males), 52 for each treatment group, were enrolled. The study recruited patients with stage 1 essential hypertension and hyper-homocysteinemia (HCys ≥15 μmol/L), without a history of cardiovascular and cerebrovascular disease. They were sequentially randomized to receive a combined nutraceutical containing 400 μg folate-6-5-methyltetrahydrofolate, 3 mg vitamin B6, 5 μg vitamin B12, 2.4 mg vitamin B2, 12.5 mg zinc and 250 mg betaine (Normocis®) once daily for two months, or supplementation with highly dosed folic acid (5 mg/day) (control group). Differences in serum HCys values were compared by ANOVA for repeated measures. A significant HCys reduction in comparison to baseline was found in both groups at the end of the study treatment, from 21.5±8.7 to 10.0±1.7 μmol/L for Normocis® subjects (p less than 0.0001), and from 22.6±6.2 to 14.3±2.8 μmol/L for controls (p less than 0.0001). HCys reduction was significantly higher among patients treated with Normocis® (p less than 0.035). The ideal HCys level (i.e. less than 10 μmol/L) was reached in 55.8% of cases in theNormocis® group, and it was significantly higher than in controls. No side effects were observed in either treatment group. Randomized clinical trials are ongoing to test the effect of folate, B6, and B12 supplementation in primary prevention of cardiovascular and cerebrovascular events. In the meantime, especially when the ideal HCys level is far from being reached, Normocis® appears to be safe, well tolerated and effective in reducing HCys levels.