Hyperhomocysteinaemia and endothelial dysfunction in dialysis patients: what should be treated first?

Sir,

I congratulate Baragetti et al. [1] for their well-done, interesting study showing the protective effect of homocysteine-lowering 15 mg oral daily 5-MTHF on endothelial function in peritoneal dialysis patients. These results are a further step in demonstrating the positive action of folate treatment on vascular disease. However, I disagree with their thoughts on my last paper [2], the only one which showed a beneficial effect on stroke. It would be better to say that it is the only one to declare positive results of vitamin B therapy on stroke prevention, because many following randomized clinical trials had similar results, but surprisingly, they set aside as irrelevant the lower rate of cardiovascular events in the vitamin B treated patients, as compared with control ones. Two recent meta-analyses [3,4], analysing respectively data from 16958 and 15341 patients, have confirmed that folate therapy is useful to prevent primary and secondary stroke risks. This effect was especially seen in patients not submitted to diets fortified with folate, and in those trials with a long follow-up time and a large decrease of homocysteine levels. Folic acid or 5-MTHF are not sufficient to have a large homocysteine-lowering rate in dialysis patients [5] and, consequently, it is necessary to add vitamin B12 and B6 to standard folate therapy, because folic acid supplementation reduces the dependence of homocysteine on folate with a shift in dependency from folate to vitamin B12 [6] and homocysteine metabolism needs vitamin B12 and B6 as enzymatic cofactors. These final considerations are supported by our clinical results, which showed that combination therapy with folate, vitamin B6 and vitamin B12 normalizes homocysteine levels in more than 70% of peritoneal dialysis patients [7].

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Reply

Sir,

We thank Dr Righetti for his valuable comments and would like to raise some questions about the relationships between vitamins B, homocysteine and cardiovascular risk. We agree with the authors that vitamin B12 is absolutely useful in lowering homocysteine plasma concentrations in dialysis patients. In fact, in a previous study by our group [1], we showed reduced levels of homocysteine plasma levels (by about 58%) in haemodialysis patients treated with an association of folic acid and vitamin B12. Vitamin

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