

Abstract

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Raised homocysteine and low folate and vitamin B-12 concentrations predict cognitive decline in community-dwelling older Japanese adults.

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BACKGROUND & AIMS: Recently, poor cognition and dementia have been associated with elevated homocysteine and low B vitamin concentrations. The aim of this study is to examine the association in community-dwelling older Japanese adults.

METHODS: Ninety-nine subjects (71 women and 28 men; mean age 75 years) were eligible for analysis after exclusion of subjects with high serum creatinine concentrations (1.3mg/dl and over) and those taking vitamin supplements. Fasting blood samples were analyzed for plasma total homocysteine, serum folate, and serum vitamin B-12. Global cognitive function was assessed using the Mini-Mental State Examination (MMSE).

RESULTS: Multiple regression analysis revealed that homocysteine concentrations were predicted by concentrations of vitamin B-12 ($p < 0.001$), folate ($p < 0.005$), and creatinine ($p < 0.001$) and age ($p < 0.005$). Scores on the MMSE were associated with concentrations of homocysteine, vitamin B-12, and folate. **The association between folate or vitamin B-12 concentrations and MMSE scores remained significant after adjusting for homocysteine concentrations.** Folate concentrations, but neither homocysteine nor vitamin B-12 concentrations, were significantly associated with serum albumin concentrations.

CONCLUSIONS: **Reduced folate and vitamin B-12 concentrations were independently associated with cognitive decline.** The correlation between folate and albumin concentrations may imply that the reduction of folate in the Japanese older population is due to nutritional deficiency.

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