

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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