American Journal of Clinical Nutrition, Vol. 85, No. 2, 511-517, February 2007

ORIGINAL RESEARCH COMMUNICATION

Homocysteine, B vitamins, and the incidence of dementia and cognitive impairment: results from the Sacramento Area Latino Study on Aging[1,2,3]

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Background: High concentrations of homocysteine have been linked to a greater risk of Alzheimer disease, dementia, and cognitive decline.

Objective: We evaluated the association between homocysteine and 4.5-y combined incidences of dementia and cognitive impairment without dementia (CIND) in a cohort of 1779 Mexican Americans aged 60–101 y.

Design: Homocysteine, red blood cell (RBC) folate, and plasma vitamin B-12 were measured at baseline. New cases of dementia or CIND were ascertained by neuropsychological and clinical examinations and expert adjudication. We used proportional hazards models to estimate the risk of homocysteine-associated dementia or CIND and the influence of RBC folate and plasma vitamin B-12 on that association.

Results: High homocysteine concentrations were associated with a greater risk of dementia or CIND: hazard ratio (HR): 2.39; 95% CI: 1.11, 5.16. Plasma vitamin B-12 modified the association between homocysteine and the outcome. The rates of dementia or CIND associated with homocysteine for those in the lowest and highest tertiles of vitamin B-12, respectively, were significantly higher (HR: 1.61, $P = 0.04$) and lower (HR: 0.94, $P = 0.015$) than the risk for those in the middle tertile.

Conclusions: Homocysteine is an independent risk factor for both dementia and CIND. Higher plasma vitamin B-12 may reduce the risk of homocysteine-associated dementia or CIND.

Key Words: Homocysteine • B vitamins • dementia • cognitive impairment without dementia • red blood cell folate

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