

Abstract

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Vitamin B12 and folate and the risk of anemia in old age: the Leiden 85-Plus Study.

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BACKGROUND: Screening for deficiencies in vitamin B(12) and folate is advocated to prevent anemia in very elderly individuals. However, the effects of vitamin B(12) and folate deficiency on the development of anemia in old age have not yet been established.

METHODS: The current study is embedded in the Leiden 85-Plus Study, a population-based prospective study of subjects aged 85 years. Levels of vitamin B(12), folate, and homocysteine were determined at baseline. Hemoglobin levels and mean corpuscular volume (MCV) were determined annually during 5 years of follow-up.

RESULTS: We analyzed data from 423 subjects who did not use any form of cyanocobalamin, hydroxocobalamin, or folic acid supplementation, neither at baseline nor during follow-up. Folate deficiency (<7 nmol/L; n = 34) and elevated homocysteine levels (>13.5 μmol/L; n = 194) were associated with anemia at baseline (adjusted odds ratio [OR], 2.44; 95% confidence interval [CI], 1.06-5.61; and adjusted OR, 1.82; 95% CI, 1.08-3.06, respectively), but vitamin B(12) deficiency (<150 pmol/L; n = 68) was not (adjusted OR, 1.51; 95% CI, 0.79-2.87). Furthermore, vitamin B(12) deficiency was not associated with the development of anemia during follow-up (adjusted HR, 0.92; 95% CI, 0.46-1.82) or with changes in MCV (adjusted linear mixed model; P = .77). Both folate deficiency and elevated homocysteine levels were associated with the development of anemia from age 85 years onward (adjusted HR, 3.33; 95% CI, 1.55-7.14; and adjusted HR, 1.70; 95% CI, 1.01-2.88, respectively), but not with an increase in MCV over time (P > .30).

CONCLUSION: In the general population of very elderly individuals, anemia in 85-year-old subjects is associated with folate deficiency and elevated homocysteine levels but not with vitamin B(12) deficiency.

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