

Association between dietary folate intake and blood status of folate and homocysteine in Malaysian adults.

ABSTRACT

Folate is of prime interest among investigators in nutrition due to its multiple roles in maintaining health, especially in preventing neural tube defects and reducing the risk of cardiovascular diseases. We investigated the effect of dietary folate intake on blood folate, vitamin B(12), vitamin B(6), and homocysteine status. One hundred subjects consisting of Chinese and Malay subjects volunteered to participate in this cross-sectional study. Dietary folate intake was assessed by 24-h dietary recall and a food-frequency questionnaire (FFQ). Serum and red blood cell folate were analyzed using a microbiological assay, while serum vitamin B(12) was determined by electrochemiluminescence immunoassay (ECLIA), and high-performance liquid chromatography (HPLC) was used for the determination of serum vitamin B(6) and homocysteine. The mean folate intake, serum folate, RBC folate, serum vitamin B(12), and B(6), were higher in female subjects, with the exception of serum homocysteine. The Chinese tended to have higher folate intake, serum folate, RBC folate, and vitamin B(12). A positive association was found between folate intake and serum folate while a negative association was found between folate intake and serum homocysteine. Stepwise linear regression of serum folate showed a significant positive coefficient for folate intake whilst a significant negative coefficient was found for serum homocysteine when controlling for age, gender, and ethnicity. In conclusion, high dietary folate intake helps to increase serum folate and to lower the homocysteine levels.

Keyword: Microbiological assay; Folate; Homocysteine; Ethnicity.