

Vitamin B12 and cognitive decline

Sir,

We have read the study of Tejal Kanhaiya Vedak *et al.* entitled "Vitamin D as a marker of cognitive decline in elderly Indian population" with great interest.^[1] In this study, they aimed to assess the serum levels of 25-hydroxyvitamin D [25(OH)D] and its association with markers of cognitive impairment and homocysteine levels in the elderly Indian population.^[1]

They reported significantly decreased concentration of 25(OH)D and increased concentration of homocysteine in the serum of patients with dementia when compared to age-matched controls and patients with mild cognitive impairment (MCI) and also reported that an association of serum levels of vitamin D with markers of cognitive decline as well as serum homocysteine levels was observed in patients with dementia and MCI when compared to controls.^[1]

When we inspected the article in the model of the study, we found that all subjects were evaluated with analysis of blood glucose levels, lipid profile, serum glutamic oxaloacetic transaminase (SGOT), serum glutamic pyruvic transaminase (SGPT), and venereal disease research laboratory test (VDRL), and thyroid profile [triiodothyronine (T3), thyroxine (T4), and thyroid-stimulating hormone (TSH)] on fresh serum and in hematology, erythrocyte sedimentation rate (ESR), and complete blood count (CBC) were performed.^[1] We noticed that the authors did not consider vitamin B12 levels.

The studies showed that low normal concentrations of vitamin B12 might be associated with cognitive impairment^[2,3] Hin *et al.* evaluated a total of 1,000 individuals aged 75 years and above and they reported that low vitamin B12 concentrations were associated with cognitive impairment in older people in the absence of anemia^[4] In a longitudinal cohort study evaluating 1,648 participants, it was shown that low vitamin B12 status was significantly associated with a more rapid cognitive decline during a 10-year period^[5] In the deficiency of vitamin B12, there are many possible mechanisms by which brain function is affected. One possibility is homocysteine because low vitamin B12 status is associated with an elevation of the concentration of homocysteine and homocysteine has an effect on the cerebral vasculature.^[6,7] Alternatively, it was concluded that the high prevalence of methylmalonic acid, a marker of vitamin B12 deficiency, in the elderly is associated with lower cognitive function scores and particularly with lower scores of language comprehension and expression.^[8] On the other hand, it is stated that vitamin B12 deficiency is accompanied by alterations in the

concentrations of cytokines such as epidermal growth factor and tumor necrosis factor- α .^[9,10] By these information from the literature, a few questions arise about evaluating the individuals for study. Did the authors evaluate vitamin B12 in the study group? If yes, this issue should be declared by the authors in our opinion. If not, readers should keep in mind that vitamin B12 deficiency might have an effect on the cognitive function of the brain.

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Conflicts of interest

There are no conflicts of interest.

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