Low Vitamin D Levels and Bone Mineral Density in Stroke

To the Editor:

We read with great interest the article by Dr Pilz and colleagues1 dealing with the relationship between vitamin D levels and fatal stroke in patients who were referred to coronary angiography. The results of their study demonstrated that low levels of 25-hydroxyvitamin D [25(OH)D] and 1,25-hydroxyvitamin D [1,25(OH)2D] were independent predictors for fatal stroke and were reduced in patients with a history of previous cerebrovascular diseases. The authors proposed that vitamin D supplementation is a promising approach in the prevention of stroke.

Evidence indicates that there were significant associations between low bone mineral density (BMD) and stroke in elderly women.2,3 In a study we presented previously, a relationship between BMD and hypertension was investigated in women. Using the dual-energy x-ray absorptiometric method, we demonstrated that BMD in lumbar spine was significantly decreased in elderly hypertensive women compared with elderly normotensive women.4 In addition, BMD was inversely correlated with systolic blood pressure, suggesting that high blood pressure might be associated with the decrease in BMD in elderly women. Several studies have shown that hypertension is related to abnormalities of the calcium metabolism such as increased calcium losses from the kidney, secondary activation of parathyroid glands and vitamin D deficiency. It was also demonstrated that the greater the 24-hour calcium excretion was, the lower the BMD was in women.4 Furthermore, Sato et al5 showed that BMD correlated negatively with 1,25(OH)2D levels in elderly poststroke patients. In this context, it can be speculated that, in subjects with hypertension and lowered BMD, the disturbances in the calcium metabolism might be more pronounced. Therefore, we would like to know whether vitamin D levels might be related to BMD or hypertensive status in the populations in the study of Dr Pilz and colleagues. It would be necessary to assess more precisely the associations among vitamin D deficiency, BMD losses and hypertension, and their contribution to stroke death and incidence.

Disclosures

None.

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