Impacts of hydroxyvitamin D deficiency on impaired balance function and muscle weakness in young adults

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To the editor

We read with interest the article by Balcani et al. [1] titled “The relationship between serum hydroxyvitamin D levels and fall risks in young adults”. Although the effect of vitamin D administration on the prevention of falls in elderly people with vitamin D deficiency has been studied, the balance function decline caused by vitamin D deficiency in young adult people has not been studied, and therefore this is a novel study. Balcani et al. indicated that objective computerized balance function assessment tests showed that even young adults with a 25-hydroxyvitamin D (25(OH)D) deficiency had an impaired balance function and an increased risk of falling. In contrast, there was no description of whether young adult patients with 25(OH)D deficiency have clinical symptoms such as myalgia, bone pain, and muscle weakness, but we considered it was necessary to describe which cases were measured for 25(OH)D deficiency.

In this study, balance function was assessed by conventional Berg Balance Test (BBT) and computerized posturography. There was no significant difference in the comparative study in BBT. In contrast, the computerized posturography evaluation showed a significant difference between the low 25(OH)D group and the normal group. Whether BBT or computerized posturography better reflects the impaired balance function in young adults with low 25(OH)D needs to be investigated in future studies to measure the actual number of falls and compare with healthy controls.

The balance function is important in preventing falls, but lower limb and trunk muscle strength are also important. Eldecalcitol, an active form of vitamin D, has been reported

to promote myocyte differentiation [2]. In addition, there are reports that vitamin D administration improved the balance, muscle strength and the risk of falling in elderly populations [3], while eldecalcitol administration improved only lower limb muscle strength [4]. In this study, we are curious to know whether the group of young adults with low 25(OH)D levels showed obvious muscle weakness in the lower limbs and trunk. The future studies will be expected to reveal more about relationships between vitamin D deficiency and impaired balance function and muscle strength.

References

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