Clinical Interventions in Aging

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LETTER

Higher vitamin D levels may be associated with higher levels of sunlight exposure and higher intake of vitamin D by diet

This article was published in the following Dove Press journal:
Clinical Interventions in Aging
17 August 2016
Number of times this article has been viewed

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Dear editor

We read the article by Al-Eisa et al[1] entitled "Correlation between vitamin D levels and muscle fatigue risk factors based on physical activity in healthy older adults," regarding an important subject – the association among vitamin D deficiency, physical activity, and muscle fatigue; the findings of this study indicate that increased physical activity is associated with higher vitamin D levels and less fatigue. We would like to comment on this well-designed and performed study.

In this study, significantly higher levels of vitamin D concentrations were reported in physically active participants compared with those with lower physical activity. However, there were no data on sunlight exposure or the seasons in which the study was conducted. Physically active participants may have higher exposure to sunlight compared with those with lower physical activity. Furthermore, subjects with higher physical activity may have a healthier diet behavior, which means they may have higher vitamin D intake by diet. If these data are not available, it is better to mention this as a limitation of the study.

Second, the authors stated that they evaluated fatigue using the visual analog scale (VAS) as well. However, the "Methods" section indicates that VAS was used to assess pain. The authors should clearly mention if VAS was used to assess pain, fatigue, or both.

Finally, the mean total and free calcium levels seem to be erroneously reported. In particular, physically active subjects seem to have severe hypercalcemia when their total and free calcium levels in Table 2 are taken into account.

Disclosure

The authors report no conflicts of interest in this communication.

Reference

1. Al-Eisa ES, Alghadir AH, Gabr SA. Correlation between vitamin D levels and muscle fatigue risk factors based on physical activity in healthy older adults. *Clin Interv Aging*. 2016;11:513–522.

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Dovepress
http://dx.doi.org/10.2147/CIA.S113748

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Dear editor

We would like to thank Muratli et al for their comments on our study. First, in our study "Correlation between vitamin D levels and muscle fatigue risk factors based on physical activity in healthy older adults," the participants were indoor residents and if they go out they were fully dressed, without sun exposure to the skin. However, the effect of sun exposure along with physical activity was also studied in another group and the data are under publication process.

Also, we mentioned in our study that participants who were taking calcium, vitamin D, or multivitamin supplements, which may affect the data, were excluded from the study. The participants were instructed not to change their normal eating habits during the entire period of data collection.[1]

Second, regarding the visual analog scale (VAS) as a measure for the assessment of fatigue, although many research studies[2–4] reported VAS score as a measure in muscle fatigue, we performed muscle biochemical markers, such as creatine kinase, hydroxyproline, and troponin I, which along with lactic acid dehydrogenase activity generally allow earlier detection of muscle injury, especially muscle soreness following training interventions.[5–11] These markers supported the measurements of VAS score and nullified the confusion about the assessment of fatigue by VAS in our study.

Finally, in our study, the mean total and free calcium levels were presented in mmol/L as shown in Table 2; the normal range values are 2.2–2.6 mmol/L for total calcium and 1.05–1.3 mmol/L for free ionized calcium.[12,13] In this case, the data of both the moderate and physically active participants in our study were not severe hypercalcemia as suggested.

Disclosure

The authors report no conflicts of interest in this communication.

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