Editorial

Calcium or vitamin D supplementation: should we not support the routine use?

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Comment on: Zhao JG, Zeng XT, Wang J, *et al.* Association Between Calcium or Vitamin D Supplementation and Fracture Incidence in Community-Dwelling Older Adults: A Systematic Review and Meta-analysis. JAMA 2017;318:2466-82.

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We read with great interest the article published in *Journal of the American Medical Association* (*JAMA*) by Zhao *et al.* (1). In this paper, the authors reported a systematic review and meta-analysis on the association between calcium or vitamin D supplementation and fracture incidence in community-dwelling elderly individuals. They concluded that their findings did not support the routine use of these supplements in community-dwelling elderly individuals.

In the paper, information was lacking on whether the participants were diagnosed with osteoporosis, osteopenia, or had normal bone mass. This lack of information could be a confounding factor, leading to a lack of comparability and reliability of the results. For instance, if most of the subjects in the two groups coincidentally had normal bone mass, the use of calcium or vitamin D supplementation would obviously not contribute to a decrease in fracture risk. As another example, if subjects in the case groups were infinitely close to those with osteoporosis with regard to their bone mass, and the subjects of the control groups were infinitely close to those with normal bone mass, the results might suggest that the use of calcium or vitamin D supplementation increased the risk of fractures, since calcium or vitamin D supplementation was a singe aspect of the anti-osteoporosis drug therapy. Therefore, information regarding the characteristics of the subjects is vital to ensure that the conclusions can be properly inferred.

The subjects in the study were mainly from Europe and America. As we know, European and American people spend more time doing outdoor sports compared to those in other parts of the world, thereby increasing their exposure to sunshine. Both exercise and sunlight could contribute to protection against osteoporosis (2,3). Undoubtedly, including participants from different global areas would inevitably influence the veracity of the results in the meta-analysis.

It is recommended in osteoporosis prevention and treatment guidelines (4,5) that treatment should include drugs that both suppress the absorption of bone and promote the formation of bone, in addition to Vitamin D and calcium supplementation. We hypothesize that the use of calcium and vitamin D, without other drugs, does not decrease the risk of fractures, similar to what the authors have concluded. Can we be sure that calcium and vitamin D do not play a role when they are used with other drugs like bisphosphonate or teriparatide? If not, we cannot deny the effect of them.

Given the above, the clinical significance of the paper for preventing fractures would be controversial.

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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