Vitamin D and nephrology

Sir,

In an important recent paper, Pilz et al. [1] demonstrate the apparent association between low 25-hydroxyvitamin D [25(OH)D] and mortality among patients with estimated glomerular filtration rate < 60 mL/min/1.73 m², who were referred to coronary angiography. The authors conclude that the observational data support the recommendation issued in the 2009 Kidney Disease: Improving Global Outcomes (KDIGO) guidelines to correct reduced 25(OH)D levels in chronic kidney disease patients but appropriately add that a controlled trial is needed to prove the effect of supplementation. This is an echo of the statements made by Monk and Bushinsky [2] who after a detailed account of the issue concluded that replenishing vitamin D appeared reasonable but added ‘Hopefully, future large controlled trials will not only define any benefits of vitamin D supplementation but also determine if supplementation causes harm’. However, it may be difficult to launch these controlled trials when everybody in nephrology seems to be certain what is right. We cannot, at the same time, recommend an open-minded study and universal supplementation. The apparent effect of 25(OH)D in the present study is quite large. Comparing from Table 2, the observed all-cause mortality among all those with not sufficient 25(OH)D (0.53) with those with sufficient 25(OH)D (0.24) would in a controlled trial only require 66 patients in both groups to be demonstrable with a power of 95% at significance level of 5%. This traditional sample size assessment requires that the probabilities of events are known which is of course not true. However, analysing the probabilities from the underlying beta distributions yet making the assessment of trial data on strictly frequentist basis [3], a conservative estimate of sample size to reach 95% power is 82 in both groups. Although this only pertains to patients like the ones described in the present paper, it should still be of interest that such a trial could be feasible especially since Figure 1 indicates that the effect develops early. An important question is why some of the patients were in fact sufficient in 25(OH)D. It is a bit disquieting that Pilz et al. [1] report that only 10 patients reported on vitamin D supplement intake and their levels were not significantly different from the rest of the patients. In conclusion, it seems entirely appropriate that a controlled trial should be done as mentioned by the authors [1]. If that is right, universal supplementation should be deferred for now.

Conflict of interest statement. None declared.

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