Letters to the Editor

Cholecalciferol, not ergocalciferol, should be used for vitamin D supplementation

SIR—The recent study by Law et al. [1] failed to find any evidence that supplementation with an equivalent vitamin D dose of 1,100 IU per day prevented fractures or falls among elderly people in care home accommodation. This finding is in contrast to another study in which community-dwelling elderly people in England were given the equivalent of 800 IU vitamin D per day [2] in which statistically significant reductions in fractures were found. The primary difference between the two studies was that Law et al. [1] used ergocalciferol (vitamin D2), whereas Trivedi et al. [2] used cholecalciferol (vitamin D3). There are several reports in the literature stating that ergocalciferol is 2–3 times less effective than cholecalciferol [3, 4] and remains active for a shorter time [4]. Thus, the report by Law et al. should be considered one in which the effective dose was <400 IU per day. This dose is too low to have a beneficial effect; at least 700–800 IU per day of vitamin D3 is required [5].

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References

Reply

SIR—As Dr Grant states, Trivedi and colleagues showed a statistically significantly reduced incidence of fractures in their trial using cholecalciferol (D3) [1], while we in our trial used ergocalciferol (D2, the only commercially available preparation of high-dose vitamin D in Britain) and observed no reduction in fractures. However, we do not think that the different vitamin D preparation explains the difference in efficacy. The serum concentration of 25-hydroxy vitamin D was measured in subsets in both trials: in our trial, it increased by 27 nmol/l (from 47 nmol/l immediately before the first dose to 74 nmol/l after 3 months, immediately before the second dose), whereas in the trial of Trivedi and colleagues, it increased by 21 nmol/l (from 53 to 74 nmol/l). The increase in serum concentration was therefore no greater in the cholecalciferol trial despite the greater reduction in fractures. Moreover, two trials published last year (and so not included in the meta-analysis that Grant cites), recording as many as 930 new fractures between them, both used cholecalciferol (D3) in a dose equivalent to about 800 IU per day, yet like our trial they showed no decrease in the incidence of fractures in treated patients (relative risk was 1.01 in both trials) [2, 3]. As we stated in our paper, there does appear to be conflicting evidence between trials as to whether vitamin D supplementation prevents fractures, but we do not think that this has a simple explanation in terms of either dose or the vitamin D preparation used.

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References