VITAMIN D AND RISK OF CAUSE SPECIFIC DEATH

Vitamin D supplements do not reduce mortality risk

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In their meta-analysis of 22 randomised controlled trials (RCTs), Chowdhury and colleagues report that, overall, vitamin D supplements had no effect on mortality, but a subgroup analysis suggested mortality was reduced in 14 trials of vitamin D₃ and not in eight trials of vitamin D₂.¹ However, three of the trials classified as vitamin D₃ trials actually studied calcitriol (1,25-dihydroxyvitamin D₃).²⁻⁴ Another trial compared the effects of an exercise programme plus vitamin D₃ with a control group that did not receive an exercise programme.⁵ Results from RCTs of active metabolites of vitamin D or multifactorial interventions cannot be ascribed to vitamin D₃. When these four trials are removed from Chowdhury and colleagues’ analyses, the pooled relative risk for all 18 trials is 0.98 (95% CI 0.92 to 1.06) and for the 10 vitamin D₃ trials it is 0.92 (0.84 to 1.02). Therefore, these analyses do not provide evidence for an effect of vitamin D (or vitamin D₃) on mortality.

In a recent trial sequential meta-analysis of the effect of vitamin D (with or without calcium supplements) on mortality, we included seven other RCTs of vitamin D alone, and seven of calcium and vitamin D compared with calcium, in addition to the trials analysed by Chowdhury and colleagues.⁶ The most recent Cochrane review included several other potentially relevant RCTs.⁷ There are many meta-analyses on vitamin D and health outcomes: we identified 45 meta-analyses on falls or fractures and 12 on mortality in a PubMed search. The differences between the results of these meta-analyses seem largely due to the methods adopted by the authors, such as their choice of studies that are included, how co-administration of calcium is dealt with, and how the studies are divided in subgroup analyses.

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