Vitamin D and Risk of Cardiovascular Disease

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Observational studies have mostly found a strong association of low plasma 25-hydroxyvitamin D (25(OH)D), usually used to measure vitamin D status, with increased risk of coronary heart disease, stroke, and cardiovascular death.1-3 However, recent Mendelian randomization studies and randomized intervention trials do not support a causal association of 25(OH)D or vitamin D supplementation with cardiovascular disease.4-8 This discrepancy has been ascribed to failures to account either for confounding or reverse causation in observational studies or for the nonlinear relationships in genetic studies and inappropriate recruiting of vitamin D replete individuals to vitamin D supplementation trials.

In conclusion, the study by Qi et al highlights that other biomarkers of vitamin D status could be independently associated with risk of coronary heart disease and that there could be potential interactions of the biomarkers with regard to risk of coronary heart disease. Further studies are needed to investigate these hypotheses and any potential consequences for clinical practice. Most importantly, we are all awaiting the randomized intervention of vitamin D supplementation to be published in the near future (eg, ViDA [The Vitamin D Assessment], CAPS [Clinical Trial of Vitamin D3 to Reduce Cancer Risk in Postmenopausal Women], VITAL [Vitamin D...
and Omega-3 Trial], DO-HEALTH [Vitamin D - Omega3 - Home Exercise - Healthy Ageing and Longevity Trial], and FIND [Finnish Vitamin D Trial]). These randomized trials will provide us with definitive answers as to whether vitamin D supplementation will reduce cardiovascular disease or not and whether vitamin D is causally related to cardiovascular disease.

References


