

HYPERTENSION

Vitamin D supplementation lacks benefit in systolic hypertension

A low level of 25-hydroxyvitamin D [25(OH)D] has been consistently linked in epidemiological studies to an increased risk of hypertension. In the VitDISH trial, however, vitamin D supplementation did not significantly reduce blood pressure (BP) in individuals with systolic hypertension.

Investigators from Scotland, UK recruited 159 individuals aged ≥ 70 years with isolated systolic hypertension and a baseline 25(OH)D level < 30 ng/ml. Participants were randomly allocated to receive either 100,000 U of oral cholecalciferol (vitamin D₃) or a placebo every 3 months for 1 year. The mean 25(OH)D level increased by 8 ng/ml in the active-treatment group compared with those receiving placebo ($P < 0.001$). However, no benefit was observed in either the primary end point (office BP) or any of the secondary end points (24 h home BP, arterial stiffness, endothelial function, cholesterol level, glucose level, and walking distance).

In an editorial published with the trial, Edward Giovannucci suggests that the association between a low 25(OH)D level and hypertension might be linked with an elevated level of parathyroid hormone (PTH). Vitamin D supplementation lowers the PTH level, but “the relatively high baseline 25(OH)D status [in the trial] may have contributed to the lower PTH levels at baseline, minimizing the capacity to observe interventional effects of PTH lowering”. The role of vitamin D supplementation in BP lowering requires further study, but avoidance of vitamin D deficiency remains an inexpensive health-care strategy with pleiotropic benefits.

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Original article Witham, M. D. *et al.* Cholecalciferol treatment to reduce blood pressure in older patients with isolated systolic hypertension: the VitDISH randomized controlled trial. *JAMA Intern. Med.* doi:10.1001/jamainternmed.2013.9043