Effects of Oral Potassium on Blood Pressure

Meta-analysis of Randomized Controlled Clinical Trials

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Abstract

Objective. —To assess the effects of supplementation with oral potassium on blood pressure in humans.

Design. —Meta-analysis of randomized controlled trials.

Data Sources. —English-language articles published before July 1995.

Study Selection. —Thirty-three randomized controlled trials (2609 participants) in which potassium supplementation was the only difference between the intervention and control conditions.

Data Extraction. —Using a standardized protocol, 2 of us independently abstracted information on sample size, duration, study design, potassium dose, participant characteristics, and treatment results.

Results. —By means of a random-effects model, findings from individual trials were pooled, after results for each trial were weighted by the inverse of its variance. An extreme effect of potassium in lowering blood pressure was noted in 1 trial. After exclusion of this trial, potassium supplementation was associated with a significant reduction in mean (95% confidence interval) systolic and diastolic blood pressure of-3.11 mm Hg (-1.91 to-4.31 mm Hg) and-1.97 mm Hg (-0.52 to-3.42 mm Hg), respectively. Effects of treatment appeared to be enhanced in studies in which participants were concurrently exposed to a high intake of sodium.

Conclusions. —Our results support the premise that low potassium intake may play an important role in the genesis of high blood pressure. Increased potassium intake should be considered as a recommendation for prevention and treatment of hypertension, especially in those who are unable to reduce their intake of sodium.

Footnotes

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