

Long-term effects of a plant-based dietary portfolio of cholesterol-lowering foods on blood pressure.

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Abstract:

Objective: To determine the effect on blood pressure of dietary advice to consume a combination of plant-based cholesterol-lowering foods (dietary portfolio).

Methods: For 1 year, 66 hyperlipidemic subjects were prescribed diets high in plant sterols (1.0 g/1 000 kcal), soy protein (22.5 g/1 000 kcal), viscous fibers (10 g/1 000 kcal) and almonds (22.5 g/1 000 kcal). There was no control group. Seven-day diet record, blood pressure and body weight were monitored initially monthly and later at 2-monthly intervals throughout the study.

Results: Fifty subjects completed the 1-year study. When the last observation was carried forward for non-completers (n = 9) or those who changed their blood pressure medications (n = 7), a small mean reduction was seen in body weight 0.7 ± 0.3 kg (P = 0.036). The corresponding reductions from baseline in systolic and diastolic blood pressure at 1 year (n = 66 subjects) were -4.2 ± 1.3 mm Hg (P=0.002) and -2.3 ± 0.7 mm Hg (P = 0.001), respectively. Blood pressure reductions occurred within the first 2 weeks, with stable blood pressures 6 weeks before and 4 weeks after starting the diet. Diastolic blood pressure reduction was significantly related to weight change (r= 0.30, n = 50, P = 0.036). Only compliance with almond intake advice related to blood pressure reduction (systolic: (=-0.34, n= 50, P= 0.017; diastolic: (=-0.29, n=50, P=0.041).

Conclusions: A dietary portfolio of plant-based cholesterol-lowering foods reduced blood pressure significantly, related to almond intake. The dietary portfolio approach of combining a range of cholesterol-lowering plant foods may benefit cardiovascular disease risk both by reducing serum lipids and also blood pressure.