Effect of a milk drink supplemented with whey peptides on blood pressure in patients with mild hypertension.

**Abstract:**

BACKGROUND: Inhibition of the angiotensin I-converting enzyme (ACE) is a widely used principle for the treatment of hypertension. Fermentation of milk proteins was shown to lead to the formation of peptides with ACE-inhibiting activity. Milk products with ACE-inhibiting peptides may provide a useful approach to prevent or treat hypertension. AIM OF THE STUDY: To investigate the effect of a milk drink supplemented with whey peptides on blood pressure in mildly hypertensive subjects. METHODS: A randomized, placebo-controlled, double blind clinical trial in two parallel groups was performed. A total of 54 hypertensive patients received either 125 ml of a milk drink supplemented with whey peptides every morning or a control product for 12 weeks after a run-in period of 2 weeks. Previous in vitro tests of the whey powder demonstrated ACE-inhibitory activity. Blood pressure was measured at 0, 2, 4, 8, and 12 weeks. Fasting blood samples were collected at 0, 4, 8, and 12 weeks for analysis of metabolic and inflammatory variables. RESULTS: Resting systolic and diastolic blood pressure values did not change in the milk drink group 144.1 +/- 8.6/91.0 +/- 5.5 mmHg at baseline vs. 143.7 +/- 13.5/90.4 +/- 6.5 mmHg after 12 weeks. In the control group systolic (p = 0.0431) and diastolic (p = 0.0081) blood pressure was significantly reduced 140.6 +/- 11.7/90.3 +/- 5.8 mmHg at baseline vs. 137.0 +/- 14.4/87.7 +/- 6.6 mmHg.
after 12 weeks. There was no difference between the two groups at any time point. No changes were seen when the results of the 24-h continuous blood pressure monitoring were compared after 12 weeks. No significant changes were detected for circulating levels of selected inflammation markers (interleukin (IL)-6, C-reactive protein (CRP), number of leukocytes, and plasminogen activator inhibitor-1 (PAI-1) as well as for metabolic variables (insulin, plasma glucose, and lipids).

CONCLUSIONS: The daily consumption of 125 ml of a milk drink supplemented with whey peptides was not found to reduce blood pressure and/or inflammation markers in mildly hypertensive subjects, although preceding in vitro tests showed a potent ACE-inhibition.