

Cocoa flavanols reduce N-terminal pro-B-type natriuretic peptide in patients with chronic heart failure.

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Abstract

AIMS:

Poor prognosis in chronic heart failure (HF) is linked to endothelial dysfunction for which there is no specific treatment currently available. Previous studies have shown reproducible improvements in endothelial function with cocoa flavanols, but the clinical benefit of this effect in chronic HF has yet to be determined. Therefore, the aim of this study was to assess the potential therapeutic value of a high dose of cocoa flavanols in patients with chronic HF, by using reductions in N-terminal pro-B-type natriuretic peptide (NT-proBNP) as an index of improved cardiac function.

METHODS AND RESULTS:

Thirty-two patients with chronic HF, stable on guideline-directed medical therapy, were randomized to consume 50 g/day of high-flavanol dark chocolate (HFDC; 1064 mg of flavanols/day) or low-flavanol dark chocolate (LFDC; 88 mg of flavanols/day) for 4 weeks and then crossed over to consume the alternative dark chocolate for a further 4 weeks. Twenty-four patients completed the study. After 4 weeks of HFDC, NT-proBNP (mean decrease % \pm standard deviation) was significantly reduced compared with baseline ($-44 \pm 69\%$), LFDC ($-33 \pm 72\%$), and follow-up ($-41 \pm 77\%$) values. HFDC also reduced diastolic blood pressure compared with values after LFDC (-6.7 ± 10.1 mmHg).

CONCLUSIONS:

Reductions in blood pressure and NT-proBNP after HFDC indicate decreased vascular resistance resulting in reduced left ventricular afterload. These effects warrant further investigation in patients with chronic HF.

KEYWORDS:

Endothelial dysfunction; Flavanol; Heart failure; Procyanidin