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Original Investigation

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Effects of a Randomized Controlled Trial of Transcendental Meditation on Components of the Metabolic Syndrome in Subjects With Coronary Heart Disease

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Background The metabolic syndrome is thought to be a contributor to coronary heart disease (CHD), and components of the syndrome have been identified as possible therapeutic targets. Previous data implicate neurohumoral activation related to psychosocial stress as a contributor to the metabolic syndrome. The aim of this study was to evaluate the efficacy of transcendental meditation (TM) on components of the metabolic syndrome and CHD.

Methods We conducted a randomized, placebo-controlled clinical trial of 16 weeks of TM or active control treatment (health education), matched for frequency and time, at a medical center in a total of 103 subjects with stable CHD. Main outcome measures included blood pressure, lipoprotein profile, and insulin resistance determined by homeostasis model assessment (calculated as follows: [(fasting plasma glucose level [in milligrams per deciliter] x fasting plasma insulin level [in microunits per milliliter]) x 0.0552]/22.5); endothelial function measured by brachial artery reactivity testing; and cardiac autonomic system activity measured by heart rate variability.

Results The TM group had beneficial changes (measured as mean \pm SD) in adjusted systolic blood pressure (-3.4 ± 2.0 vs 2.8 ± 2.1 mm Hg; $P = .04$), insulin resistance (-0.75 ± 2.04 vs 0.52 ± 2.04 ; $P = .01$), and heart rate variability (0.10 ± 0.17 vs -0.50 ± 0.17 high-frequency power; $P = .01$) compared with the health education group, respectively. There was no effect of brachial artery reactivity testing.

Conclusions Use of TM for 16 weeks in CHD patients improved blood pressure and insulin resistance and other components of the metabolic syndrome as well as cardiac autonomic nervous system tone compared with a control group receiving health education. These results suggest that TM may modulate the response to stress and improve CHD risk factors, which may be a novel therapeutic target for treatment of CHD.

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