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Effect of taurine supplementation on exercise capacity of patients with heart failure.

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Abstract

BACKGROUND: Taurine (2-aminoethanesulfonic acid) is a semi-essential amino acid found in mammalian tissues that is not involved in protein synthesis. The function of taurine is not completely understood. Some studies have demonstrated that taurine supplementation reduces death rate in rabbits with heart failure (HF) and diminishes HF severity in human models of congestive HF. In this study we have evaluated the effect of taurine supplementation on exercise capacity of patients with HF.

METHODS: A randomized single-blind placebo-controlled clinical trial was conducted on 29 patients with HF with left ventricular ejection fraction (LVEF) less than 50% who were in functional class II or III according to New York Heart Association classification. A total of 15 patients received taurine supplementation 500 mg three times a day while the remaining 14 patients received placebo for 2 weeks. All patients performed exercise tolerance test before and after taurine and placebo supplementation.

RESULTS: The mean age of patients was 60.57 ± 6.54 years, they were mostly male (26 of 29), and had mean LVEF of 29.27 ± 6.97%. There were no significant differences in terms of LVEF, body mass index, and also exercise time, metabolic equivalents (METS) and exercise distance before supplementation. Exercise time, METS, and exercise distance increased significantly in patients who received taurine supplement for 2 weeks (p-value<0.0001 for all), but did not increase significantly in patients who received placebo (p-values 0.379, 0.244, and 0.577 respectively).

CONCLUSION: Taurine supplementation in patients with HF who are taking standard medical treatment can increase their exercise capacity.

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