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Pilot study of H_2 therapy in Parkinson's disease: a randomized double-blind placebo-controlled trial

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Abstract

Background: Oxidative stress is involved in the progression of Parkinson's disease (PD). Recent studies have confirmed that molecular hydrogen (H_2) functions as a highly effective antioxidant in cultured cells and animal models. Drinking H_2-dissolved water (H_2-water) reduced oxidative stress and improved Parkinson's features in model animals.

Methods: In this a placebo-controlled, randomized, double-blind, parallel-group clinical pilot study, the authors assessed the efficacy of H_2 -water in Japanese patients with levodopa-medicated PD. Participants drank 1,000 mL/day of H_2-water or pseudo water for 48 weeks.

Results: Total Unified Parkinson's Disease Rating Scale (UPDRS) scores in the H_2-water group (n=9) improved (median, -1.0; mean ± standard deviation, -5.7 ± 8.4), whereas UPDRS scores in the placebo group (n=8) worsened (median, 4.5; mean ± standard deviation, 4.1 ± 9.2). Despite the minimal number of patients and the short duration of the trial, the difference was significant ($P<0.05$).

Conclusions: The results indicated that drinking H_2-water was safe and well tolerated, and a significant improvement in total UPDRS scores for patients in the H_2-water group was demonstrated.

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