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Drinking Hydrogen-Rich Water Has Additive Effects on Non-Surgical Periodontal Treatment of Improving Periodontitis: A Pilot Study

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Abstract

Oxidative stress is involved in the pathogenesis of periodontitis. A reduction of oxidative stress by drinking hydrogen-rich water (HW) might be beneficial to periodontal health. In this pilot study, we compared the effects of non-surgical periodontal treatment with or without drinking HW on periodontitis. Thirteen patients (3 women, 10 men) with periodontitis were divided into two groups: The control group (n = 6) or the HW group (n = 7). In the HW group, participants consumed HW 4-5 times/day for eight weeks. At two to four weeks, all participants received non-surgical periodontal treatment. Oral examinations were performed at baseline, two, four and eight weeks, and serum was obtained at these time points to evaluate oxidative stress. At baseline, there were no significant differences in periodontal status between the control and HW groups. The HW group showed greater improvements in probing pocket depth and clinical attachment level than the control group at two, four and eight weeks ($p < 0.05$). The HW group also exhibited an increased serum level of total antioxidant capacity at four weeks, compared to baseline ($p < 0.05$). Drinking HW enhanced the effects of non-surgical periodontal treatment, thus improving periodontitis.

Keywords: drinking water; hydrogen; oxidative stress; periodontitis.

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