

DOES THE SUPPLEMENTATION WITH HYDROGEN-RICH WATER IMPROVE THE PROBLEMS OF PAIN IN PATIENTS WITH INTERSTITIAL CYSTITIS?

Hypothesis / aims of study

Oxidative stress is widely recognized as being associated with various disorders including diabetes, hypertension, and atherosclerosis. Recently, several investigators showed that hydrogen (H₂) has potential as an antioxidant in preventive and therapeutic applications. We hypothesized that oxidative stress could be one of the causes of interstitial cystitis (IC), because the disturbance of bladder blood flow has been suggested in IC. However, to our knowledge, there are no clinical data that prove the efficacy of hydrogen rich water in IC. The aim of this study was to investigate the efficacy of hydrogen rich water for the treatment of IC patients.

Study design, materials and methods

This was a prospective, randomized, double-blind, placebo-controlled study. Diagnosis of IC was made based on the cystoscopic findings during bladder hydrodistension. Inclusion criteria were history of stable IC symptoms 12 weeks or longer after bladder hydrodistension, total of IC symptom index (ICSI) seven points or more and the symptom of bladder pain (Q4 on ICSI) four points or more. A total of 30 participants (29 female, 1 male, age 64.0 +/- 14.8 years) were entered into the study and were randomized by 2:1 ratio to receive hydrogen-rich water 3 packs (1 pack 200 ml) per day (20 patients) vs placebo water 3 packs (1 pack 200 ml) per day (10 patients) for 2 months. Symptoms were assessed using ICSI, IC problem index (ICPI) and Visual analogue scale (VAS).

Results

Three cases (all females) in hydrogen-rich water group were withdrawn from the study. The reason of withdrawal was the self-judgment in 2 cases and the concomitant use of other medicines in one case. Compared with placebo water, hydrogen-rich water did not show a significant difference in the results of ICSI, ICPI, and VAS. However, in 3 cases, hydrogen-rich water was very effective in improving VAS (Figure).

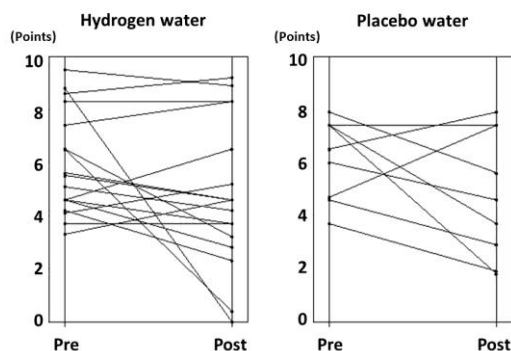
Interpretation of results

The effect of hydrogen-rich water on IC symptoms was not shown significantly comparing with the placebo control in the present study. However, the number of patients in the present study was small and further clinical study with more numbers of patients should be done before we can reach a definitive conclusion about the efficacy of hydrogen-rich water in the treatment of IC. The supplementation with hydrogen-rich water might be one of optional treatment for refractory IC, because it was very effective in some cases.

Concluding message

The supplementation with hydrogen-rich water might have a possibility as one of optional treatment for refractory IC. Further clinical study should be warranted.

Visual analogue scale (VAS)



References

1. Biochem Biophys Res Commun. 2008;24;375(3):346-50.
2. Methods Mol Biol. 2010;594:215-39.
3. Kidney Int. 2010;77(2):101-9.

Specify source of funding or grant	None
Is this a clinical trial?	Yes
Is this study registered in a public clinical trials registry?	Yes
Specify Name of Public Registry, Registration Number	UMIN000001253
Is this a Randomised Controlled Trial (RCT)?	Yes
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
Specify Name of Ethics Committee	Public Health Research Foundation
Was the Declaration of Helsinki followed?	Yes

Was informed consent obtained from the patients?

Yes
