

## Hydrogen rich water in oral pathology: an update

Dear Editor,

I read with great interest the article *The transfer of hydrogen from inert gas to therapeutic gas* by Li et al.<sup>1</sup> in the *Medical Gas Research*. I would like to suggest certain updates to the above review article regarding hydrogen rich water in oral pathology with emphasis on recent studies done in 2017.<sup>2,3</sup>

**Hydrogen-rich water suppresses gingival oxidative stress and alveolar bone resorption in oral cavity<sup>2</sup>:** The study was conducted in 344 male Fischer rats divided into three groups of six rats each with a control group fed on regular diet and drinking distilled water and two experimental groups fed a high-fat diet and drinking distilled water or hydrogen-rich water. Oxidative stress was assessed from 8-hydroxydeoxyguanosine and the bone mineral density of the alveolar bone was analyzed by micro-computerized tomography. Study group showed a higher gingival level of 8-hydroxydeoxyguanosine and a lower level of alveolar bone density compared to the control group. It was interfered that drinking hydrogen-rich water will suppress obesity, lower gingival level of 8-hydroxydeoxyguanosine and reduce alveolar bone resorption in rats on a high-fat diet.

**Hydrogen-rich water used for prevention or treatment of oxidative stress-related diseases in oral cavity<sup>3</sup>:** The study was conducted to investigate protective effects of hydrogen-rich water against reactive oxygen species induced cellular harmful events and cell death in human gingival fibroblasts and three-dimensional gingival tissue equivalents. The study was an *in vitro* scratch assay, which showed hydrogen-rich water achieved cytoprotection from oxidative stress injury in human gingival fibroblasts in culture or three-dimensional tissue equivalents and wound-healing

promotion, superadded with reactive oxygen species scavenging and relief from glutathione diminishment.

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