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Consumption of hydrogen water reduces paraquat-induced acute lung injury in rats

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Abstract

Exposure to paraquat leads to acute lung injury and oxidative stress is widely accepted as a contributor to paraquat-induced acute lung injury. Recent studies have reported that consumption of water with dissolved molecular hydrogen to a saturated level (hydrogen water) prevents oxidative stress-induced diseases. Here, we investigated whether consumption of saturated hydrogen saline protects rats against paraquat-induced acute lung injury. Adult male Sprague-Dawley (SD) rats were randomly divided into four groups: Control group; hydrogen water-only group (HW group); paraquat-only group (PQ group); paraquat and hydrogen water group (PQ + HW group). The rats in control group and HW group drank pure water or hydrogen water; the rats in PQ group and PQ + HW group were intraperitoneally injected with paraquat (35 mg/kg) and then provided pure water or hydrogen water. Both biochemical and histological lung alterations were measured. The results showed that hydrogen water ameliorated these alterations, demonstrating that hydrogen water alleviated paraquat-induced acute lung injury possibly by inhibition of oxidative damage.

Figures

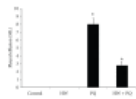


Figure 1 Effects of hydrogen water on...

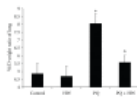


Figure 2 Effect of hydrogen water on...

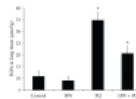


Figure 3 MDA in lung tissue. Our...

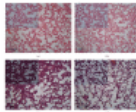


Figure 4
Histopathological examination by H&E

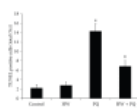


Figure 5 Effects of saturated hydrogen saline...

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