Condensed version and key points from the study:

Protective effect of hydrogen-rich water on liver function of colorectal cancer patients treated with mFOLFOX6 chemotherapy

Study Overview

- A controlled, randomized, single-blind clinical trial investigating the protective effect of hydrogen-rich water on liver function in colorectal cancer (CRC) patients treated with mFOLFOX6 chemotherapy.
- Conducted at the Department of Oncology of Taishan Hospital in Taian, China, recruiting patients between June 2010 and February 2016.

Participants

- 152 CRC patients were recruited, of whom 146 met inclusion criteria. 144 were then randomized — 80 into the hydrogen-rich water group and 64 into the placebo group. Final analysis included 76 and 60 patients respectively.

What Was Measured

- Liver function changes were tracked through blood markers including ALT (alanine aminotransferase), AST (aspartate transaminase), alkaline phosphatase, indirect bilirubin (IBIL), and direct bilirubin.

Key Results

- The primary damaging effects of mFOLFOX6 chemotherapy on the liver showed up as elevated ALT, AST, and IBIL levels.
- The hydrogen-rich water group showed no significant differences in liver function before and after treatment, whereas the placebo group exhibited significantly elevated ALT, AST, and IBIL levels — suggesting hydrogen-rich water alleviated mFOLFOX6-related liver injury. nih
- The probability and degree of chemotherapy-induced liver damage in the hydrogen-rich water group were lower compared to those in the placebo group.

Why Hydrogen Water May Help

- Hydrogen's protective effect against oxidative damage to the brain, liver, kidneys, and other major organs has been previously described, and hydrogen-rich water is considered a portable, easily administered, and safe means of delivering molecular hydrogen

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Conclusions

- The study found that hydrogen-rich water was capable of minimizing liver injury caused by mFOLFOX6 chemotherapy in colorectal cancer patients.

Limitations to Keep in Mind

- The trial was single-blind (not double-blind), which is a slightly weaker study design.
- The sample sizes were unequal between groups, and some dropouts occurred before final analysis.
- The study was conducted at a single hospital in China, which may limit broader generalizability.
- It focused solely on liver function markers and did not assess wider quality of life or cancer outcomes.

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