Condensed Version and key points from the study:

"Real world survey" of hydrogen-controlled cancer: a follow-up report of 82 advanced cancer patients

Study Design

- A prospective follow-up study of **82 patients with stage III and IV cancer,** conducted at Fuda Cancer Hospital of Jinan University from 2014 to 2018, using the "real world evidence" method.
- Patients inhaled a mixture of 66.7% hydrogen and 33.3% oxygen via nasal tube or mask at a flow rate of 3,000 mL/min, for more than 3 hours per day, for at least 3 consecutive months.

Quality of Life

- After just 2 weeks of hydrogen inhalation, patients reported reductions in dyspnea and improvements in appetite, fatigue, nausea, vomiting, and insomnia, as well as better physical, role, and emotional function.
- After 4 weeks, further significant improvements were seen in cognitive function, pain, constipation, and diarrhea

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Physical Fitness

- After 3 months, 42% of patients showed improvement in physical condition, 34% remained stable, and 24% deteriorated.
- Lung cancer patients showed the greatest physical improvement (68%), while pancreatic cancer patients showed none (0%) and gynecological cancer patients showed the least (12%).

Tumor Markers

- Of the 58 patients with elevated tumor markers before treatment, levels decreased in 36% of patients after 3 months, with the initial decline appearing between 13 and 45 days (median 23 days).
- The greatest reduction in tumor markers was seen in lung cancer patients (75%), while no decrease was observed in pancreatic or liver cancer patients.

Disease Control (Tumor Response)

- Among the 80 patients with visible tumors on imaging, the overall disease control rate was 57.5%, with complete or partial remission appearing between 21 and 80 days (median 55 days) after starting hydrogen inhalation.
- Disease control was markedly higher in stage III patients (83%) compared to stage IV patients (48%), with pancreatic cancer showing the lowest control rate and lung cancer the highest (79%).

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Survival

- Over a follow-up period of 3 to 46 months, 12 patients died — all in stage IV — from causes including tumor progression, liver failure, infection, and treatment complications.

Safety

- No hematological toxicity was observed in the 29 patients treated with hydrogen inhalation alone. Only 5 of the 82 patients experienced mild side effects (stomach discomfort, dizziness, headache, minor nosebleed, nasal dryness), all of which resolved spontaneously within hours to days.

Conclusion

- The authors concluded that hydrogen inhalation is a simple, low-cost supportive therapy with few adverse reactions that can improve quality of life and help control cancer progression in advanced cancer patients, and warrants further formal investigation.

Important Caveats: This was an observational "real world" study — not a randomized controlled trial — meaning there was no placebo group for comparison. Many patients were also receiving other treatments concurrently, making it difficult to isolate hydrogen's specific contribution. The results are promising but should be considered preliminary

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