

HYPERBARIC O₂

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Hyperbaric oxygen provides significant protection against experimental colitis

WESTPORT, Oct 02 (Reuters) - Hyperbaric oxygen therapy may offer a new option in the treatment of inflammatory bowel disease unresponsive to other therapies, according to researchers in Israel.

Dr. D. Rachmilewitz of Hebrew University-Hadassah Medical School in Jerusalem and multicenter colleagues induced colitis in rats by either flushing the colon with 5% acetic acid or by ...intracolonic administration of 30 mg trinitrobenzenesulphonic acid (TNB).

Some of the rats were exposed to hyperbaric oxygen (100% oxygen at 2.4 atmospheres) ...for 1 hour twice on the day of colitis induction and once daily thereafter. Control rats were not exposed to the oxygen therapy.

In rats exposed for 7 days to hyperbaric oxygen, the extent of injury was significantly reduced by 51% in rats with colitis induced by acetic acid and by 62% in the rats administered TNB, compared with control rats.

[C]olonc [nitric oxide synthase] activity was significantly decreased by 61% compared with its activity in untreated rats, the researchers report in the October issue of Gut. Generation of prostaglandin E2 was also decreased following exposure to hyperbaric therapy. Previous work has linked mucosal prostaglandin E2 to the intestinal damage associated with inflammatory bowel disease.

Although other investigators have proposed a therapeutic value for hyperbaric oxygen in patients with inflammatory bowel disease, the Israeli team is the first to elucidate the biochemical mechanisms underlying this therapeutic benefit, according to the report.

The rat models differ in some ways from human inflammatory bowel disease, Dr. Rachmilewitz and colleagues acknowledge. However, ...in the experimental model the inflammatory response resembles, in many aspects, the sequence of events in [inflammatory bowel disease]. Therefore, they researchers conclude [hyperbaric oxygen] may be considered in the treatment of patients with refractory inflammatory bowel disease.

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