GASTROENTEROLOGY LITERATURE

Dig Dis Sci. 2009 Jan;54(1):75-9. Epub 2008 Oct 30.
The Effect of iNOS Inhibitors and Hyperbaric Oxygen Treatment in a Rat Model of Experimental Colitis.
Ercin CN, **Yesilova Z**, **Korkmaz A**, **Ozcan A**, **Oktenli C**, **Uygun A**.
Our aim was to investigate the effectiveness of aminoguanidine (AMG), an inducible nitric oxide synthase inhibitor, and hyperbaric oxygen (HBO) treatment in an experimental colitis model. Methods We induced colitis in rats. In the control group, we applied 2 ml serum physiologic intraperitoneally for 7 days. In the HBO group, 100% oxygen at 2.4 atm pressure was applied for 7 days. In the AMG group, 100 mg/kg AMG was applied intraperitoneally for 7 days. In the HBO + AMG group, HBO and AMG were applied, respectively. At the end of 7 days, rats were sacrificed and the distal 10 cm part of colon was examined macro- and microscopically. Results Severity of colitis and NO activities were reduced by AMG, HBO, and HBO + AMG application. There was histologically significant improvement, especially in the HBO + AMG group Conclusions Both HBO and AMG were significantly effective in preventing weight loss, reducing NO activities, and severity of colitis, when comparing HBO and AMG separately.

J Gastroenterol Hepatol. 2008 Aug;23(8 Pt 2):e379-83. Epub 2007 Jun 25.
Hyperbaric oxygen therapy as a prophylactic and treatment against ileus and recurrent intestinal obstruction soon after surgery to relieve adhesive intestinal obstruction.
Ambiru S, **Furuyama N**, **Kimura F**, **Shimizu H**, **Yoshidome H**, **Miyazaki M**, **Shimada H**, **Ochiai T**.
BACKGROUND AND AIM: Nonoperative management of cases of adhesive intestinal obstruction would be ideal, especially for patients who have recently undergone surgery to relieve the same condition. We aimed to examine whether hyperbaric oxygen (HBO) therapy might have therapeutic potential for the treatment of postoperative paralytic ileus and recurrent adhesive intestinal obstruction soon after surgery, to relieve adhesive intestinal obstruction, because of its unique mechanisms in these contexts. METHODS: A total of 133 patients were enrolled in the present study. We examined non-per os periods, hospital stay, and clinical course according to the postoperative course of the 133 patients. RESULTS: After surgical intervention, 75 patients left the hospital without morbidity. Nineteen patients were successfully administered prophylactic HBO therapy to facilitate intestinal motility and to prevent paralytic ileus. The remaining 39 patients suffered from postoperative paralytic ileus or early recurrence of obstruction during the same hospitalization period. The patients who underwent prophylactic HBO therapy had significantly shorter non-per os periods and hospital stays after surgery than those who were not initially given HBO therapy ($P < 0.05$). Similarly, there were significant differences in duration of hospital stay after surgery between patients with HBO therapy as treatment and those who received other conservative therapies ($P < 0.05$). CONCLUSIONS: HBO therapy may have a prophylactic effect on postoperative paralytic ileus and may be of therapeutic benefit in the management of early recurrent adhesive intestinal obstruction following surgery to relieve adhesive intestinal obstruction.

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Anesteziol Reanimatol. 2008 Jul-Aug;(4):34-8.

Impact of hyperbaric oxygen therapy on the clinical course of acute pancreatitis and systemic inflammation response syndrome

Lisagors IL, **Sondore A**, **Pupelis G**, **Oshs P**, **Iaunalksne I**, **Pavars M**, **Arons M**.

Feasibility of hyperbaric oxygen therapy (HBO) as an efficient and safe adjunct to the standardized treatment protocol and its possible immunomodulatory impact were assessed in the prospective and controlled study of 44 patients with diagnosed acute pancreatitis (AP). The course of the disease was accompanied by systemic inflammatory response syndrome (AIRS) in all the patients on admission. The impact of AP and HBO on homeostasis, the number of performed operations, mortality rates, the levels of two cytokines, intraabdominal pressure, and side effects caused by HBO were evaluated. A treatment group consisted of 22 patients receiving HBO therapy for 3 days (twice a day) using a monoplace chamber under pressures of 1.7-1.9 ATA. Patients (n = 22) in the control group were managed in accordance with the standardized treatment protocol. The authors found more stable homeostasis, decreased mortality rate, and the number of operations in the HBO group. This type of additional therapy, possibly contributed to the decrease of intraabdominal pressure within the first six days after admission. The findings suggest HBO can affect an inflammatory response, by decreasing the levels pro-inflammatory cytokines and increasing those of anti-inflammatory ones.

Hepatogastroenterology. 2008 Mar-Apr;55(82-83):491-5.

Effect of hyperbaric oxygen therapy on patients with adhesive intestinal obstruction associated with abdominal surgery who have failed to respond to more than 7 days of conservative treatment.

Ambiru S, **Furuyama N**, **Kimura F**, **Shimizu H**, **Yoshidome H**, **Miyazaki M**, **Ochiai T**.

BACKGROUND/AIMS: To investigate the effects of hyperbaric oxygen (HBO) therapy on patients with adhesive intestinal obstruction who have failed to respond to more than 7 days of conservative treatment. METHODOLOGY: Six hundred eighty-five patients, who were admitted a total of 879 times for adhesive intestinal obstruction, were divided into groups according to the treatment and interval between the first day of the therapy and clinical symptoms of obstruction; tube decompression therapy within 7 days after appearance of clinical symptoms (Group I: n = 321), clinical symptoms that have persisted for less than 7 days before the start of HBO therapy (Group II: n = 498), and for more than 7 days (Group III: n = 60). RESULTS: The overall resolution and mortality rates in the cases of adhesive intestinal obstruction were 79.8% and 2.2% in Group I, 85.9% and 1.4% in Group II, and 81.7% and 1.6% in Group III, respectively. Group II had significantly better resolution rates than Group I (odds ratio 1.6, $p < 0.02$). CONCLUSIONS: HBO therapy may be useful in management of adhesive intestinal obstruction associated with abdominal surgery, even in patients who fail to respond to other conservative treatments. HBO therapy may be a preferred option for treatment of patients for whom surgery should be avoided.

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Hepatogastroenterology. 2007 Oct-Nov;54(79):1925-9.

Hyperbaric oxygen therapy for the treatment of postoperative paralytic ileus and adhesive intestinal obstruction associated with abdominal surgery: experience with 626 patients.

Ambiru S, **Furuyama N**, **Aono M**, **Kimura F**, **Shimizu H**, **Yoshidome H**, **Miyazaki M**, **Shimada H**, **Ochiai T**.

BACKGROUND/AIMS: The results of hyperbaric oxygen (HBO) therapy for treatment of postoperative paralytic ileus and adhesive intestinal obstruction associated with abdominal surgery are unknown. METHODOLOGY: A retrospective review of postoperative paralytic ileus and adhesive intestinal obstruction associated with abdominal surgery in 626 patients required 758 admissions who underwent HBO therapy was undertaken to examine the efficacy of HBO therapy. RESULTS: The overall resolution rates for patients receiving HBO therapy in cases of postoperative paralytic ileus and adhesive intestinal obstruction were 92% and 85%, respectively. Among patients who were more than 75 years old, the therapies resolved 35 (97%) of 36 cases of postoperative paralytic ileus and 42 (81%) of 52 cases of adhesive intestinal obstruction, which was comparable to the results for patients less than 75 years old. The mortality rate was 1.2% overall. Complications related to HBO therapy occurred in 3.8% of the admissions, and most of them were not serious. CONCLUSIONS: These results suggest that HBO therapy might deserve further assessment for use in management of postoperative paralytic ileus and adhesive intestinal obstruction as a new modality. HBO therapy is safe and non-invasive, and may be useful in the elderly patients, since mortality was relatively low in this series.

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Dig Dis Sci. 2008 Feb;53(2):481-5. Epub 2007 Oct 13.
Hyperbaric oxygen therapy is as effective as dexamethasone in the treatment of TNBS-E-induced experimental colitis.
Atug O, **Hamzaoglu H**, **Tahan V**, **Alican I**, **Kurtkaya O**, **Elbuken E**, **Ozdogan O**, **Tozun N**.
INTRODUCTION: Hyperbaric oxygen (HBO) has been demonstrated to be useful as an adjunctive therapy for Crohn's disease. In the present study, HBO was tested as a treatment for trinitrobenzenesulfonic acid-ethanol (TNBS-E)-induced distal colitis, and its effects were compared with dexamethasone therapy. METHODS: A total of 48 Sprague-Dawley rats were separated into six groups: the control, and those treated with vehicle, TNBS-E, HBO, dexamethasone, or combined HBO + dexamethasone. The HBO treatment group was exposed to 100% HBO at 2 ATM for 75 min twice daily at 6-h intervals in a HBO chamber, both on the day of colitis induction and 3 days thereafter. Treatment with intraperitoneal dexamethasone twice daily was started 1 h before the induction of colitis and was continued for 7 days in the dexamethasone group. The rats were decapitated 8 days after the induction of colitis, and the colonic tissue wet weight, macroscopic and microscopic lesion score, and tissue myeloperoxidase (MPO) activity were determined. RESULTS: HBO therapy decreased the activity of experimental colitis measured by the tissue wet weight, macroscopic score, microscopic score, and MPO activity. The dexamethasone treatment significantly reduced the colitis activity as determined by the tissue MPO activity and wet weight. There were also decreases in the macroscopic and microscopic activity scores with the dexamethasone therapy; however, these changes were not statistically significant. The combined therapy with HBO and dexamethasone provided no additional benefit over HBO therapy alone. CONCLUSION: HBO therapy can be a valuable therapeutic option in treatment of patients with inflammatory bowel disease. HBO therapy in the refractory patients deserves further, larger clinical studies.

J Gastroenterol Hepatol. 2007 Nov;22(11):2042-6.
Hyperbaric oxygen therapy for severe acute pancreatitis.
Christophi C, **Millar I**, **Nikfarjam M**, **Muralidharan V**, **Malcontenti-Wilson C**.
Despite improvements in the supportive management of severe acute pancreatitis over the last decade, the morbidity and mortality rate remains high. The main feature of this condition is pancreatic necrosis leading to sepsis, with both localized and systemic inflammatory response syndromes. Early pathophysiological changes of the pancreas include alterations in microcirculation, ischemia reperfusion injury, and leukocyte and cytokine activation. The efficacy of hyperbaric oxygen (HBO) therapy in improving these pathophysiological disturbances is documented for various conditions. However, its effect in the treatment of severe acute pancreatitis is undetermined. This report documents the case of a 56-year-old woman presenting with severe acute pancreatitis treated by HBO therapy. The severity of disease was based on an Acute Physiology and Chronic Health Evaluation (APACHE II) illness grading score of 11 and a Baltazar based computed tomography severity index (CTSI) score of 9. Administration of 100% oxygen was commenced within 72 h of presentation at a pressure of 2.5 atmospheres for 90 min and given twice daily for a total of 5 days. Therapy was well tolerated with improvements in APACHE II and CTSI grading scores. HBO therapy for severe acute pancreatitis appeared to be safe and may have a role in improving treatment outcomes. Further study is required.

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J Gastrointest Surg. 2007 Aug;11(8):1008-15.
Hyperbaric oxygen therapy reduces severity and improves survival in severe acute pancreatitis.
Nikfarjam M, **Cuthbertson CM**, **Malcontenti-Wilson C**, **Muralidharan V**, **Millar I**, **Christophi C**.
Severe acute pancreatitis is characterized by pancreatic necrosis, resulting in local and systemic inflammation. Hyperbaric oxygen (HBO) therapy modulates inflammation, but has not been extensively studied in pancreatitis. This study investigates the effects of HBO in a rat model of severe acute pancreatitis. Sixty-four rats were induced with severe pancreatitis using 4% sodium taurocholate and randomized to HBO treatment or control. HBO was commenced 6 h after induction (100% oxygen at 2.5 atmospheres for 90 min) and continued every 12 h for a maximum of eight treatment episodes. Surviving animals were killed at 7 days. Severity of pancreatitis was graded macroscopically and microscopically. Lung edema was calculated using wet and dry lung weights. Macroscopic and microscopic severity scores (mean +/- SE) of HBO-treated animals with pancreatitis (8.3 +/- 0.7; 9.6 +/- 0.4) were lower than those of controls (10.5 +/- 0.5; 11.1 +/- 0.4) ($p = 0.02$ and $p = 0.03$, respectively). The HBO-treated group had reduced pancreatic necrosis compared to controls (40 +/- 4% vs. 54 +/- 4%; $p = 0.003$). There was no difference in pulmonary edema between the groups. Median survival in the HBO-treatment group was 51 h, compared to 26 h in controls. Day-7 survival was significantly improved in the HBO-treated animals compared to controls (40% vs. 27%; $p = 0.04$). HBO therapy reduces overall severity, decreases the extent of necrosis, and improves survival in severe acute pancreatitis.

ANZ J Surg. 2006 Jul;76(7):625-30.
Potential effects of hyperbaric oxygen therapy in acute pancreatitis.
Cuthbertson CM, **Christophi C**.
BACKGROUND: To extract from the biomedical published reports, the effects of hyperbaric oxygen (HBO) on inflammatory disease, in particular acute pancreatitis. METHODS: This review will explain these effects and evaluate potential mechanisms of action of HBO in acute pancreatitis. A Medline/PubMed search (January 1966 to July 2004) with manual cross-referencing was conducted, including all relevant articles investigating the molecular and systemic effects of HBO on inflammatory diseases, particularly focusing on the studies of acute pancreatitis. All publication types, languages and subsets were searched. RESULTS: Original and review articles and short communications were extracted. The selected original articles covered the molecular and systemic effects of HBO and the effects in inflammatory disease states. The major findings are that HBO can act as an anti-inflammatory agent and as an antimicrobial agent. Many of the effects of HBO would be beneficial in the treatment of acute severe pancreatitis. Work carried out to date in animal models of acute pancreatitis shows promising improvements in severity but studies are limited to date. CONCLUSION: Acute pancreatitis impairs the pancreatic and systemic microcirculation and causes acute inflammation. These processes are potentially improved by HBO therapy.

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Dig Dis Sci. 2006 Mar;51(3):480-7.
Hyperbaric oxygen enhances the efficiency of 5-aminosalicylic acid in acetic acid-induced colitis in rats.
Gorgulu S, **Yagci G**, **Kaymakcioglu N**, **Ozkara M**, **Kurt B**, **Ozcan A**, **Kaya O**, **Sadir S**, **Tufan T**.
The aim of this study was to assess the efficiency of hyperbaric oxygen alone and in combination with 5-aminosalicylic acid in the acetic acid-induced colitis model, a well-known experimental model of inflammatory bowel disease in rats. Rats were randomly divided into five groups. In the noncolitis control group, rats were given isotonic saline, while in the other groups rats were treated by intracolonic administration of 4% acetic acid. In group 2, the untreated control group, no additional therapy was applied. In groups 3, 4, and 5 hyperbaric oxygen, 5-aminosalicylic acid. and 5-aminosalicylic acid + hyperbaric oxygen therapies were applied, respectively. Administration of acetic acid caused an inflammatory response in all animals. Histopathologic score was significantly higher in group 2 than in any other group. 5-Aminosalicylic acid and hyperbaric oxygen significantly decreased the histopathologic score ($P < 0.05$). Myeloperoxidase activity was also reduced significantly by 5-aminosalicylic acid ($P < 0.05$) but not by hyperbaric oxygen. The most prominent ameliorative effect, however, was seen in group 5 and the histopathologic score and myeloperoxidase activity were significantly lower than in groups 3 ($P < 0.05$) and 4 ($P < 0.001$). Hydroxyproline level also increased significantly in group 5, but not in groups 3 and 4 ($P < 0.001$). These findings indicate that hyperbaric oxygen therapy is effective in reducing the extent of colitis induced by acetic acid, although it is not as potent as 5-aminosalicylic acid. The combination of hyperbaric oxygen and 5-aminosalicylic acid, however, led to a much more prominent reduction in the severity of colitis. Hyperbaric oxygen may have a promising place in the treatment of inflammatory bowel disease.

Physiol Res. 2004;53(5):493-9.
Effect of hyperbaric oxygen on experimental acute distal colitis.
Gulec B, **Yasar M**, **Yildiz S**, **Oter S**, **Akay C**, **Deveci S**, **Sen D**.
It has been demonstrated that hyperbaric oxygen (HBO) is useful as an adjunctive therapy for Crohn's disease. However, its effects on ulcerative colitis have not been investigated. In the present study, HBO was tested for acetic acid-induced colitis, and antioxidant systems were evaluated to clarify its possible mode of action. Thirty-six Sprague-Dawley rats were randomly divided into three groups: sham control (Group I), colitis induced by acetic acid without any therapy (Group II), colitis induced by acetic acid and treated with HBO (Group III). HBO was given for 5 days, 2 sessions per day at 2.5-fold absolute atmosphere pressure (ATA) for a period of 90 min in rats in which colitis had been induced (Group III). Rats were sacrificed on the 5th day after the procedure. Superoxide dismutase (SOD), malondialdehyde (MDA) and glutathione peroxidase (GSH Px) activity were measured in the intestinal tissue and erythrocyte lysate. MDA and GSH Px were also determined in the plasma. Whereas MDA levels in erythrocyte, plasma and intestinal tissue were decreased, the levels of GSH Px and SOD were significantly increased in Group III as compared to those of Group II. The results of our study suggest that hyperbaric oxygen therapy has beneficial effects on the course of experimental distal colitis and that antioxidant systems may be involved in its mode of action.

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Dis Colon Rectum. 2002 Jul;45(7):967-72.
Hyperbaric oxygen ameliorates bacterial translocation in rats with mechanical intestinal obstruction.
Akin ML, **Uluutku H**, **Erenoglu C**, **Ilicak EN**, **Elbuken E**, **Erdemoglu A**, **Celenk T**.
PURPOSE: The aim of this study was to demonstrate bacterial translocation after experimentally induced intestinal obstruction as well as investigate the preventive effects of hyperbaric oxygen on obstruction-induced bacterial translocation in rats. METHODS: Forty Wistar-albino male and female rats were used. Although no procedure was done in the control group (n = 8), hyperbaric oxygen treatment under 2.5 atm absolute for 90 minutes daily was applied for two days in the hyperbaric oxygen group (n = 8). In the sham group (n = 8), after laparotomy the small bowel was only handled gently, and tissue sampling was done 48 hours later. In the obstruction group (n = 8) the ileum was ligated by 5-0 polypropylene just 5 cm proximal to the ileocecal valve. In the obstruction and hyperbaric oxygen group (n = 8), after obstruction hyperbaric oxygen treatment was applied. Forty-eight hours after the procedures, tissue samples from small bowel, mesenteric lymph nodes, spleen, and liver were taken and 1 ml of blood from the portal vein was withdrawn. All samples were cultured for microbiologic examination. RESULTS: Hyperbaric oxygen treatment significantly reduced the endogenous bacterial overgrowth in the small intestine of normal rats. Endogenous bacteria in the small intestine were significantly increased in the obstruction group, and the presence of bacterial overgrowth was proven by bacterial presence on mesenteric lymph nodes, spleen, liver, and blood. Hyperbaric oxygen treatment significantly reduced the endogenous bacterial overgrowth in the small intestine and prevented the bacterial translocation almost completely in obstruction-induced rats. CONCLUSIONS: Intestinal obstruction causes bacterial overgrowth and translocation. Hyperbaric oxygen treatment prevents the bacterial translocation effectively.

J Clin Gastroenterol. 2001 Oct;33(4):337-9.
Hyperbaric oxygen therapy for severe ulcerative colitis.
Buchman AL, **Fife C**, **Torres C**, **Smith L**, **Aristizibal J**.
Hyperbaric oxygen therapy has been used to successfully treat perineal Crohn's disease. We describe the first successful use of hyperbaric oxygen therapy in the treatment of ulcerative colitis, refractory to conventional therapies. Therapy consisted of 30 courses of 100% oxygen at a pressure of 2.0 atm absolute. Clinical remission was achieved on the basis of the Truelove-Witts and disease activity index scores. Corticosteroids were successfully tapered off once remission was achieved.

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Am J Gastroenterol. 1999 Feb;94(2):318-21.
Hyperbaric oxygen therapy for perineal Crohn's disease. - Noyer CM, **Brandt LJ**.
Perineal lesions are a frequent and troublesome complication of Crohn's disease. Although there are various surgical and medical therapeutic regimens available to treat these lesions, all have significant associated morbidity, mortality, and toxicity. Recently, the beneficial effects of hyperbaric oxygen therapy (HBOT) have been described in patients with severe or refractory perineal disease, but the role of HBOT in larger groups or less severely affected patients has not yet been studied, nor has the minimum number of treatments required for initial or complete healing of perineal disease in this population been described. This article reviews the known and theoretical tissue effects of HBOT and discusses its potential role in treating patients with perineal Crohn's disease.

J Clin Immunol. 1997 Mar;17(2):154-9.
Modification of in vivo and in vitro TNF-alpha, IL-1, and IL-6 secretion by circulating monocytes during hyperbaric oxygen treatment in patients with perianal Crohn's disease.
Weisz G, **Lavy A**, **Adir Y**, **Melamed Y**, **Rubin D**, **Eidelman S**, **Pollack S**.
Treatment of perianal inflammatory lesions in Crohn's disease (CD) is unsatisfactory and novel treatment modalities are pursued. We have recently reported a good clinical effect of hyperbaric oxygen (HBO) treatment in perianal CD. In the present study, seven patients with perianal CD were subjected to daily sessions of HBO in a multiplace hyperbaric chamber. Each patient received a total of 20 sessions during a time period of 1 month, and IL-1, IL-6, and TNF-alpha measurements were done several times during the initial sessions and after completing therapy. Pretreatment cytokine levels were elevated in patients compared to age-matched 10 normal controls. During the first 7 days of treatment, IL-1, IL-6, and TNF-alpha levels in supernatants of LPS-stimulated monocytes derived from patients' peripheral blood were decreased compared to pretreatment levels. Parallel measurements of serum IL-1 levels revealed an initial elevation and thereafter decreased levels, which remained low throughout the first week of HBO treatment. After completion of therapy, cytokine levels increased to pretreatment values. We conclude that alterations in secretion of IL-1, IL-6, and TNF-alpha may be related to the good clinical effect of HBO treatment in CD patients with perianal disease.

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Dis Colon Rectum. 1995 Jun;38(6):609-14.
Hyperbaric oxygenation in severe perineal Crohn's disease.
Colombel JF, **Mathieu D**, **Bouault JM**, **Lesage X**, **Zavadil P**, **Quandalle P**, **Cortot A**.
PURPOSE: Perineal involvement in Crohn's disease is a common and distressing condition, often refractory to medical or surgical treatments. Recent reports suggest the efficacy of hyperbaric oxygenation (HBO) in the healing of perineal lesions. We evaluated HBO in severe patients with perineal Crohn's disease. METHODS: Ten consecutive patients (8 women, 2 men; mean age, 30 years) were studied. There were four superficial fissures, four cavitating ulcers, six low or superficial fistulas, two high fistulas, and one irreversible anal stenosis. All patients had received one or more medical treatments without healing the perineal lesions, and all had had previous surgery for perineal lesions. RESULTS: Two patients discontinued HBO after a few sessions and did not complete treatment. Eight patients completed at least 30 HBO sessions and were evaluable. At the end of the procedure, six of eight patients treated were healed, three completely and three partially. All patients who healed completely received HBO as an additional treatment to local perineal surgery. CONCLUSION: HBO might be useful as a last resort treatment of chronic perineal Crohn's disease, resistant to other treatments or as a complement to surgery.

J Clin Gastroenterol. 1994 Oct;19(3):202-5.
Hyperbaric oxygen for perianal Crohn's disease.
Lavy A, **Weisz G**, **Adir Y**, **Ramon Y**, **Melamed Y**, **Eidelman S**.
Perianal involvement in Crohn's disease is common (< or = 50%), distressing, and frequently refractory to treatment. Clinical features include painful induration and stenosis, discharging fistulas, and fissures. The pathogenesis of these lesions is unclear, but local ischemia and secondary anaerobic infection may play a role. Following three sporadic reports of successful treatment with hyperbaric oxygen (HBO), we undertook a trial of this method in 10 patients with refractory perianal disease. These patients' perianal Crohn's disease had not responded to treatment that included local medications, salicylates, corticosteroids, metronidazole, or 6-mercaptopurine were treated. Treatment was administered in a hyperbaric chamber at a pressure of 2.5 atm absolute. Each session lasted 90 min, and each course consisted of 20 daily sessions. Complete healing occurred in 5 patients after one to two courses. In an additional 2, after three courses, 1 patient improved but did not heal, and 2 did not improve. No adverse effects were noted by any of the 10 patients. Follow-up of 18 months did not reveal any recurrence. These preliminary results confirm that HBO therapy is a safe and efficient therapeutic option for perianal Crohn's disease.

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Fiziol Zh. 1991 Sep-Oct;37(5):120-3.
Hyperbaric oxygenation and drug therapy in treatment of nonspecific ulcerative colitis and Crohn's disease
Poliakova LV, **Lukich VL**, **Grigor'eva GA**.
Patients with nonspecific ulcerative colitis and Crohn's disease were treated with drug therapy (prednisolone, sulphasalazine, metronidazole per os and hydrocortisone per rectum) and subjected to 12 sessions of HBO. Every 10-14 months the HBO course was repeated. After 7 years of such a treatment a gradual partial recovery of large intestine mucosa and in some cases even its absolute recovery were observed. It was most difficult to get good results when treating lesion of distal colon segments. HBO produced a good effect when the disease was diagnosed at the early stage, when the intestine injury was accompanied by hepatobiliary system disease and in teenagers.

Gastroenterology. 1989 Sep;97(3):756-60.
Healing of severe perineal and cutaneous Crohn's disease with hyperbaric oxygen.
Brady CE 3rd, **Cooley BJ**, **Davis JC**.
Recurrent perineal Crohn's disease can be an extremely debilitating complication that may be difficult to treat. We report a patient with progressively worsening perineal and biopsy-proven cutaneous Crohn's disease that had been refractory to surgery and medical treatment (sulfasalazine, steroids, 6-mercaptopurine, metronidazole, antibiotics). As the lesions were reminiscent of problem wounds occurring in other situations, hyperbaric oxygen treatment was instituted while the patient was continued on metronidazole. Response was dramatic with almost immediate relief of symptoms and regression within 2.5 mo of wounds that had previously defied therapy for 8 yr. Clinical remission has not been sustained as four subsequent courses of hyperbaric oxygen have been given over a period of 11 mo. However, the patient has been essentially asymptomatic since her initial course and the extent of her cutaneous disease has been minimal compared with that before hyperbaric oxygen. Hyperbaric oxygen treatment is costly and should not be routinely used in every patient with perineal Crohn's disease. However, this case report may herald an advance in the understanding of the pathogenesis of this complication and ultimately, its therapy.

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