

SCLERODERMA LITERATURE

Clin Exp Dermatol. 2007 Jan;32(1):12-7. Epub 2006 Jul 27.

Hyperbaric oxygen therapy for nonhealing vasculitic ulcers.

Efrati S, Bergan J, Fishlev G, Tishler M, Golik A, Gall N.

BACKGROUND: Cutaneous nonhealing ulceration is a threatening manifestation of vasculitis.

Hyperbaric oxygen (HBO), frequently used as adjuvant therapy for patients with ischaemic ulcers, exerts additional beneficial effects on the vascular inflammatory response. AIM: To evaluate the effect of HBO on vasculitis-induced nonhealing skin ulcers. METHODS: The study population comprised 35 patients aged \geq 18 years with severe, nonhealing, vasculitis-induced ulcers that had not improved following immunosuppressive therapy. Baseline ulcer tissue oxygenation was evaluated at room air concentration (21% O₂), at 1 atmosphere absolute (ATA) breathing 100% O₂, and at 2 ATA breathing 100% O₂. The baseline treatment protocol consisted of a 4-week course of 100% O₂ for 90 min at 2 ATA, five times/week. RESULTS: The mean baseline ulcer tissue oxygenation (3.1 \pm 2.4 kPa at room air concentration), was significantly increased to 13.9 \pm 11.9 kPa at 1 ATA breathing 100% O₂ (P < 0.001), and subsequently increased further to 59.1 \pm 29.8 kPa at 2 ATA breathing 100% O₂ (P < 0.001). At the end of the hyperbaric therapy, 28 patients (80%) demonstrated complete healing, 4 (11.4%) had partial healing and 3 (8.6%) had no improvement. None of the patients had any side-effects related to the HBO therapy. CONCLUSION: HBO therapy may serve as an effective safe treatment for patients with vasculitis having nonhealing skin ulcers. Further studies are needed to evaluate its role as primary therapy for this group of patients.

J Rheumatol. 2006 Aug;33(8):1694-6.

Ischemic scleroderma wounds successfully treated with hyperbaric oxygen therapy.

Markus YM, Bell MJ, Evans AW.

Hyperbaric oxygen therapy (HBOT) has been used to treat refractory wounds for the last several decades, with the majority of research focusing on wounds secondary to arterial insufficiency. We describe 2 patients with scleroderma with intractable bilateral extremity ulcers. Local ischemia was identified using transcutaneous oximetry. Each patient then underwent 30 treatments of HBOT at a relative depth of 2.4 ATA with resulting wound healing. This is the first reported successful use of HBOT to treat scleroderma ulcers, and may represent an unrecognized treatment option for these notoriously difficult chronic wounds.

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Hematology. 2000;5(2):167-172.

Therapy: Hyperbaric Oxygen as the Only Effective Treatment in Mutilating and Resistant Systemic Vasculitis.

Jacobs P, Wood L, Van Niekerk GD.

A forty year old man was seen in 1984 with a four year history of a painful vasculitis that responded transiently to plasma exchange. Diagnosis was revised to atypical pyoderma gangrenosum with further temporary benefit from lamprane and continuing maximally tolerated corticosteroids. The course fluctuated over the next ten years with gradual and increasing soft-tissue damage coupled with superimposed skin infections. A variety of organisms were isolated from the ulcerated areas, with each episode successfully managed on the basis of local debridement and appropriate antibiotic administration. In 1995, with extending skin devascularization, infectious bacterial episodes became more frequent and deep non-healing ulcers led to constant pain with virtual incapacity. In response to protocol hyperbaric oxygen therapy there was immediate reversal of the cutaneous damage, granulation tissue formed and new skin grew to cover the previous extensive deficits. As the lesions in his hands and feet improved so did his quality of life, with the patient again becoming ambulant and returning to work. Vascular access had become a major problem, and venography showed extensive occlusion with collateral circulation. A standard Hickman catheter was placed through the femoral vein into the inferior vena cava and functioned well over the next five years. At the end of 1996 the patient was admitted with an acute chest pain that was complicated by a major pulmonary embolus, from which he could not be resuscitated. **This anecdotal experience demonstrates the important but underutilised benefits of hyperbaric oxygen in managing refractory, painful and penetrating skin ulcers. The cost of obtaining wound healing with reduction in pain by this form of treatment was approximately one-fifth of expenditure on previously ineffective management.**

Lupus. 1995 Jun;4(3):172-5. Comment in: Lupus. 1996 Feb;5(1):84.

Use of hyperbaric oxygen in rheumatic diseases: case report and critical analysis.

Wallace DJ, Silverman S, Goldstein J, Hughes D.

Hyperbaric oxygen has been used in patients with rheumatic disease for many years without reports of untoward or unusual complications for a variety of non-rheumatic indications. **Recent evidence that hyperbaric oxygen inhibits the actions of certain cytokines, acts as an immune modulator and may help cognitive dysfunction has resulted in a re-examination of its potential role in rheumatic diseases. A case report of a lupus/scleroderma crossover patient is presented whose cognitive dysfunction improved after hyperbaric oxygen therapy.** The history of hyperbaric oxygen and its physiology are related, along with a focused review of its effects on the immune and central nervous systems. Areas which might warrant further consideration by rheumatologists are outlined, as well as areas of concern.

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1: Klin Med (Mosk). 1989 Jun;67(6):107-9.

Microcirculation in patients with systemic scleroderma during treatment using hyperbaric oxygenation

Makeeva NP, Balakhonova NP, Kurakina LV, Kamshilina LS.

Hyperbaric oxygenation treatment of systemic scleroderma has a favourable effect on microcirculatory changes whose positive dynamics can be demonstrated by conjunctival biomicroscopy. These changes include accelerated blood flow and decrease in the degree of erythrocyte aggregation. The method can be used for the objective assessment and for prognosis of the effectiveness of hyperbaric oxygenation treatment in patients with systemic scleroderma.

Ryumachi. 1995 Dec;35(6):927-33.

Systemic sclerosis with various gastrointestinal problems including pneumoperitoneum, pneumatosis cystoides intestinalis and malabsorption syndrome

Satoh A, Hoshina Y, Shimizu H, Morita K, Uchiyama M, Moriuchi J, Takaya M, Ichikawa Y.

We describe here an experience of successful treatment of systemic sclerosis (SSc) complicated with various gastrointestinal (GI) problems including pneumoperitoneum, pneumatosis cystoides intestinalis and malabsorption syndrome. A 35-year-old female had developed sclerodactyly since February, 1990. She had been treated under the diagnosis of SSc at other hospital. She had required several hospitalizations because of nausea, vomiting and abdominal distension, but her GI symptoms had gradually deteriorated. In April 1993, she was referred to our hospital and admitted for the treatment of her GI problems. On admission, she had systemic cutaneous sclerosis and marked abdominal distension without peritoneal signs was recognized. Chest and abdominal roentgenograms demonstrated massive free air under the diaphragm, marked dilation of small and large bowels, and multiple intestinal cysts (pneumatosis cystoides intestinalis ; PCI). We treated her GI problems with various modalities combined with medications, oxygen breathing, intravenous hyperalimentation and hyperbaric oxygen therapy. Pneumoperitoneum and PCI had disappeared after 8 courses of hyperbaric oxygen therapy and her GI symptoms had been well controlled by intravenous hyperalimentation. Thereafter, she has been on intermittent parenteral nutrition through subcutaneous port implantation. During the courses of this treatment, she developed an episode of Wernicke-Korsakoff (W-K) syndrome which was considered to associate with malabsorption syndrome. The W-K syndrome had recovered by intravenous administration of vitamin B1.