Arthritis - Rheumatoid

Superoxide dismutase and hyperbaric oxygen therapy of the patient with rheumatoid arthritis

Kamada T.

Nippon Seikeigeka Gakkai Zasshi. 1985 Jan;59(1):17-26.

Cu, Zn-SOD values were measured by enzyme immunoassay in the synovial fluid, leukocytes in the synovial fluid, synovial membrane, and leukocytes in blood of the patients with rheumatoid arthritis. SOD activity, lipoperoxide value in serum, ESR, and Lansbury's index of the patients with rheumatoid arthritis under hyperbaric oxygen (HBO) therapy were also investigated. SOD values of synovial fluid and of leukocytes in synovial fluid from rheumatoid arthritis group were found to be higher than those from osteoarthritis group. No significant difference was found the SOD values in leukocytes of blood and synovial membrane between two groups. In the patients with rheumatoid arthritis under HBO therapy the SOD activity was increased, whereas lipoperoxide values was decreased. Furthermore, ESR and Lansbury's index showed a remarkable recovery. These results suggest that HBO therapy may be an effective treatment for the patients with rheumatoid arthritis.

Hyperbaric oxygen treatment is comparable to acetylsalicylic acid treatment in an animal model of arthritis.

Wilson HD, Toepfer VE, Senapati AK, Wilson JR, Fuchs PN.

J Pain. 2007 Dec;8(12):924-30. Epub 2007 Aug 9.Department of Psychology,

University of Texas at Arlington, Arlington, Texas 76109, USA.

Approximately 1 in 5 adults in the United States are affected by the pain, disability, and decreased quality of life associated with arthritis. The primary focus of treatment is on reducing joint inflammation and pain through a variety of pharmacotherapies, each of which is associated with various side effects. Hyperbaric oxygen therapy is an alternative treatment that has been recommended to treat a variety of inflammatory diseases, ranging from chronic brain injury to exercise induced muscle soreness. The purpose of this set of experiments was to explore the effect of hyperbaric oxygen therapy on joint inflammation and mechanical hyperalgesia in an animal model of arthritis, and compare these effects to treatment with aspirin. Hyperbaric oxygen therapy significantly reduced both joint inflammation and hyperalgesia. As compared with aspirin treatment, hyperbaric treatment was equally as effective in decreasing joint inflammation and hyperalgesia. PERSPECTIVE: This article reports that hyperbaric oxygen treatment decreases pain and inflammation in an animal model of arthritis. The effect of hyperbaric oxygen treatment is very similar in magnitude to the effect of acetylsalicylic acid treatment. Potentially, hyperbaric oxygen could be used to treat pain and inflammation in patients with arthritis.

Place of hemocarboperfusion and hyperbaric oxygenation in the treatment of patients with rheumatoid arthritis with systemic symptoms

Saikovskii RS, Alekberova ZS, Dmitriev AA, Ashurova LL, Mach ES.

Altogether 12 patients were treated by the hemocarboperfusion method and 20 patients with systemic symptoms by the hyperbaric oxygenation (HBO) method. Positive results were obtained and it made it possible to recommend the above methods for multimodality therapy of patients with rheumatoid arthritis with systemic symptoms. A severe, rapidly progressive course of rheumatoid arthritis with the development of various systemic symptoms, a high titer of the rheumatoid factor should serve as an indication for hemocarboperfusion. HBO is found appropriate in such systemic symptoms as ischemic polyneuropathy, digital arteritis, trophic ulcers and Raynaud's syndrome.

Hyperbaric oxygenation in the comprehensive therapy of patients with rheumatoid arthritis (clinico-immunologic study)

Lukich VL, Poliakova LV, Sotnikova TI, Belokrinitskiĭ DV.

Fiziol Zh. 1991 Sep-Oct;37(5):55-60.

For 35 of 50 patients with rheumatoid arthritis traditional drug therapy was a minor success for a long time. Without any modifications of the drug therapy every patient went through a course of hyperbaric oxygenation (HBO): 21 sessions under 1.7 ata for 40 min. Good clinical results both immediate and remote have been obtained. The effect of HBO on the immune system of the patients has intensified the suppressive function of T-lymphocytes (especially with systemic symptoms of the disease), normalized cell-bound immunity and decreased the serum concentration in immune complexes.

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

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

Department of Medicine, Cedars-Sinai Medical Centre, Los Angeles, CA, USA.

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.