

Hyperbaric Oxygen Therapy for Multiple Sclerosis Patients

Reports from four countries describing benefits from hyperbaric oxygen Therapy (HBOT) in the 1970's led to the first controlled trial conducted at New York University which was published in the New England Journal of Medicine in 1983. The outcome was very positive ($p < 0.0001$), despite choosing chronic progressive or stable patients with a minimum disease duration of over 11 years.

The patients were matched and randomly allocated to treatment or control groups and examinations were conducted before, during and after a course of treatment by masked observers. The authors indicated that further studies using longer follow-up periods were necessary as were studies of the use of oxygen treatment in patients with acute symptoms. The second trial, published in the Lancet in 1985 also recruited chronic patients with disease duration in excess of ten years. It demonstrated statistically significant improvement in bladder function. ($p < 0.03$) (2) The final report of this study found that at the end of a year of follow-up there was less deterioration of cerebellar function in the treated group.(3)

The improvement in bladder function after a course of twenty sessions generally lasted for six months. These authors also suggested that further studies should be undertaken. In 1986 a London group published a preliminary report in the British Medical Journal. (4) Positive effects were again reported for bladder function and several other symptoms. In 1988 Oriani et al (5) used patients with a low disability score and compared 22 controls with 22 patients treated every week for a year. They detected an appreciable difference in outcome ($p < 0.01$) and confirmed the effect using evoked potential measurements. In 1986 Pallotta et al (6) published a follow-up of 22 patients over 8 years. All received an initial course of 20 HBO treatments, and 11 were treated thereafter with 2 exposures every 20 days. The frequency of relapses decreased dramatically in the prolonged treatment group whereas they gradually increased in the group which received only an initial course of treatment. Oxygen delivered under hyperbaric conditions is the only agent to have resulted in improvement in patients with chronic progressive and chronic stable MS.

The Multiple Sclerosis Treatment Centers, which are A UK Charity, provide HBO therapy in 62 Centers. Note that the MS Society does not endorse any treatment for Multiple Sclerosis but "is not hostile to HBO and does not regard it as dangerous or expensive". The outcome of treatment in 703 patients followed for 10 or more years has been studied. Comparison of the results with published data on the natural history of MS shows a significant reduction in the rate of deterioration which is related to the frequency of treatment (7). The need for continuation therapy is now accepted as with the use of beta interferon. The possibility of preventing sclerosis by treatment during acute attacks has still to be addressed. Lactate, a marker of oxygen deficiency, can be seen in acute MS lesions using magnetic resonance spectroscopy. This shows the need for urgent administration of oxygen and there is no substitute.

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