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# Multiple Sclerosis: Its Etiology, Pathogenesis, and Therapeutics With Emphasis on the Controversial Use of HBOT

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Multiple sclerosis: its etiology, pathogenesis, and therapeutics with emphasis on the controversial use of HBO. *J Hyper Med* 1988; 3(3):143-164-A review of the current hypotheses in the etiology and pathogenesis of multiple sclerosis (MS) is presented together with the implications for therapy.

A new hypothesis as to etiology is presented. Special emphasis is placed on the controversy surrounding the use of hyperbaric oxygen in a critical analysis of the published double-blind studies and related discussions. Emphasis placed on the predominant infective and autoimmune hypotheses cannot be supported, either from the pathology of the disease or by the response to treatment.

It is concluded that the evidence of beneficial effects of hyperbaric oxygen therapy, despite the use of patients with advanced disease in trials, is very impressive, especially in chronic progressive disease. It is also concluded that there is need for further research and that such studies should examine the effects of hyperbaric oxygenation alone, and in combination with other therapeutic agents, in individual patients with the methods of real time investigation now available. Meanwhile, based on comparative efficacy and safety, hyperbaric oxygenation is recommended for treating early stages of MS, especially for treating cerebellar and bowel-bladder disorders. ACTH-cortisone, antiviral agents, co-polymer 1, double-blind studies, hyperbaric oxygen therapy, immunosuppressants, Kurtzke disability scores, MS etiology, MS pathophysiology MS therapy, multiple sclerosis (MS), plasmapheresis Introduction Multiple sclerosis (MS) is classified as a demyelinating disease of the central nervous system (1) and is the most common of the demyelinating diseases. Despite over a century of investigation MS remains one of the most frustrating diseases for patients and physicians because there is no agreed upon etiology and there is no cure or agreed upon therapy.

Perhaps no other disease has had so many therapies proposed and had them fail (2, 3). The purpose of this article is to review some of the evidence for the etiology and pathophysiology of MS and match the information with current therapies. Specific attention will be directed at a critique of the basis for hyperbaric oxygen (HBO) as a new therapeutic modality for MS (summarized in Table 1). We concentrate on HBO because this therapeutic modality has generated an extremely emotional, as well as an intellectual controversy, perhaps more so than any previously proposed treatment.

Conclusions Of all the current therapies presumably based on an understanding of the etiology and pathophysiology of the disease process, HBOT has the soundest foundation. It is also the safest drug available. It is not surprising, therefore, to find that there is much positive evidence concerning the beneficial effects of HBOT on cerebellar and bowel-bladder function to sanction its use for treating MS. Based on comparative efficacy and safety considerations, it is recommended that HBOT be used for treating early MS and for treating MS associated cerebellar and bowel-bladder dysfunction.

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