

CLINICALLY OBSERVED REDUCTION OF SPASTICITY IN PATIENTS WITH NEUROLOGICAL DISEASES AND IN CHILDREN WITH CEREBRAL PALSY FROM HYPERBARIC OXYGEN THERAPY.

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Our personal experience with hyperbaric oxygen therapy (HBOT) in patients with neurological diseases started in 1979. From that time we have used it as an adjunct to physiotherapy in the rehabilitation of these patients. In the first four years, we worked with patients suffering from ischemic cerebral vascular accidents, and verified that the clearest and most common effect of HBOT during treatment and soon after it was a reduction of spasticity. This was obvious clinically and functionally in hemiplegic patients and preceded motor improvements. During 1984-85, we accumulated experience with the HBOT in other pathologies, including head injury, anoxic-encephalic disorders and Multiple Sclerosis patients. The same results were found. We then decided to investigate the effect of HBOT on children with cerebral palsy- another predominantly spastic disease. In 1985, we started working as neurological advisors for the "Centro Brasileiro de Medicina Hyperbarica" (CBMH) and selected a group of 10 children with spastic cerebral palsy who may benefit from HBOT, as they had respiratory difficulties, bronchitis, repeated pneumonia and bronchial asthma. An HBOT treatment program was devised for this group and we observed the same reduction of spasticity in these patients. Also there was improved respiratory function, the bronchial complications disappeared and this was confirmed clinically. This initial success then led to other problems as the physiotherapists sent us other cases to be treated.

The parents of affected children contacted us to try HBOT on their children. We let them know that we could find no references to this in our literature, and such a therapy, while harmless, could be unnecessary or even present temporary side effects. However, despite this, they insisted on trying it. We then looked for assistance from other specialists, including those in our University, in order to conduct scientific research on the matter, but had no support.

The CDMH is a private medical office, one of few hyperbaric medicine centers in Brazil. We have commercial or corporate participation in the center but we have since had to interrupt our collaboration, because of problems generated by accepting these patients. We found that HBOT is little known in Brazil and is considered to be "alternate medicine" by physicians, who only recognize its merit in respect to the treatment of gas gangrene. From January 1985 to April 1989, 230 patients with Cerebral Palsy were treated with a series of HBOT (20 sessions of 1 hour). In 218 (97.78%) patients, there was a clear reduction of spasticity (nearly 50% less). Frequently, clonus or the Babinski sign would disappear, with better plantar support and the abolition of the leg "scissoring." Only 12 patients (5.21%) remained practically unchanged. They were extremely severe cases, with profound cerebral atrophy.

Follow-up of patients over a period of 6 or more months after HBOT was only possible in 82 (38.65%) patients as most of them did not live in Sao Paulo. We noticed that 62 (75%) patients had a persisting reduction of spasticity and better motor control. In addition, the parents reported other types of improvement, such as a better balance, the child being more attentive, more "intelligent" with a reduced frequency of convulsions and episodes of bronchitis. Perhaps we have been encouraged by the patients, to place attempts at therapy before research, but we do believe that oxygen at higher dosage plays an important role in the rehabilitation of neurological patients, and has a favorable effect on neurological development in children. We suspect subsequent studies will confirm this (Complete report included in MUMS HBO packet.)
Information obtained from: MUMS National Parent-to-Parent Network (newsletter # 71).