



Brain Disorders/Neurological

Treatment of Children's Epilepsy by Hyperbaric Oxygenation: Analysis of 100 Cases. Hyperbaric Oxygen Treatment

Centre, Zhou Gulan, EEG Lab, Zhujiang. Proceedings of the Eleventh International Congress on Hyperbaric Medicine; President: Wen-ren Li, M.D., Fuzhou, People's Republic of China; Secretariat: Frederick S. Cramer, M.D., San Francisco, California, U.S.A.

Gender and age: The whole group included 100 patients (72 males, 28 females), ages 4 days to 14 years. 84% of them were between 1 month and 9 years old. Causes of disease: 23 patients cause unknown (primary epilepsy), others had the following causes: cerebral lesion due to birth injury in 55 patients; encephalitis in 14 patients; high fever in 2 pediatric patients; anoxic cerebropathy in 4 children; brain tumor in 1 child; cerebrovascular malformation in 1. Neuropsychiatric manifestation: * intelligence was impaired in 68 patients: * 45 children had mental symptom and personality change; * local neurosystemic signs were detected in 47 patients.

Patterns of Seizures - Grand mal 32 - Psychomotor seizures 12 - Petit mal 10 - Focal seizures 44 - Autonomic symptoms 2 - EEG examination: All patients in this group had an EEG test. It was found that 92 patients had abnormal EEG's; 66 patients had focal sparkle or sharp wave; 10 patients had paroxysmal sparkle-slow wave and sharp-slow wave; 6 patients had paroxysmal cerebral dysrhythmias; 10 patients had confusing abnormal EEG's; 3 patients had normal EEG's; 5 other patients had boundary EEG's. CT and MRI scanning: Seventy-six patients were proved abnormal, including ventricular enlargement due to atelencephalia, focal encephalatrophy, tumours and local low density pathy, skull fracture. The other 24 patients were normal.

Seizure frequency: 21 patients seized every week; 18 patients did every month; 23 patients did every two months, the other 38 patients seized more than twice a year. TREATMENT: Anticonvulsant medication: 39 patients were treated systematically; 20 patients could be controlled by little diazepam and r-amino butyric acid; 41 patients received no anticonvulsant because of their parents' objection, since they thought the children were too young; some individuals were controlled by luminal intramuscular injection on convulsion.

Hyperbaric oxygenation treatment: The private hyperbaric oxygen chamber was manufactured by Ninpo Hyperbaric-Oxygen Chamber Factory. In the chamber, the pure oxygen pressure is 1.7-2.0 atmospheres. The patients were treated for 80 minutes every day. A course was 15-30 days. Some patients had therefore been treated 35-45 times. Outcome: *The treatment was found effective in 82 patients (82%), significantly effective in 68 patients (68%). It showed that the seizures greatly diminished, and the EEG was improved. * Forty-three patients had stopped anticonvulsant medication, while in other patients the amount of antiepileptic was decreased. *After hyperbaric oxygenation treatment, 82 patients' intelligence, personality, and mentalities were improved; 51 children studied very well; 10 primary and 4 secondary epilepsy children had no change after being treated 30 times.

Electroencephalogram (EEG): After hyperbaric oxygenation treatment, 45 patients had normal EEG's; 28 patients had focal abnormal EEG's; 3 patients had paroxysmal sharp-slow wave and another 20 patients' EEG's were slightly abnormal, 4 patients had boundary EEG's. Follow-up: Seventy-six patients had been observed for more than 3 years. Forty children had been completely free of anticonvulsants. Three children had 1 or 2 slight attacks every year. Twenty-five patients were administered a little anticonvulsants and their seizures diminished a lot. The attacks did not change in 11 children with systemic therapy. DISCUSSION: Mechanism of treatment of children's epilepsy with HBO: Hyperbaric oxygenation could improve the cerebral circulation, provide the brain with more oxygen, and reduce edema. Hyperbaric oxygen could also promote the energy metabolism of cerebral cells and improve the recovery of epileptic foci. Reduction of handicapped children due to epilepsy: Epilepsy often impairs the children's intelligence and personality; hyperbaric

oxygenation could not only control the attacks of epilepsy but also prevent the occurrence of intelligence impairment and abnormal personality, so as to diminish the ratio of handicapped children due to illness. The way of gaining a good effect in the treatment: The effect is good in the cases whose causes are known, especially those caused by brain damage due to birth injury. As to the period of treatment, most patients need 2-3 years. If the infants do not have high fever or respiratory inflammation, the treatment can begin from several days after birth. Fifteen to 20 days make a course, and 2 courses a year. [excerpted from: the Hyperbaric Oxygen Trust website]

Legal Disclaimer

The content and information provided within this site is for informational and educational purposes only. Consult a doctor before pursuing any form of therapy, including Hyperbaric Oxygen Therapy. The Information provided within this site is not to be considered Medical Advice. In Full Support of the F.D.A., Hyperbaric Oxygen Therapy is considered Investigational, Experimental, or Off Label.

Please consult with your Treating Medical Physician