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Abstract

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Title: Pediatric cerebral palsy treated by 1.5 ATA hyperbaric oxygen – a pilot study.

Objective: to determine if 1.5 ATA hyperbaric oxygen therapy can ameliorate the neurologic deficits associated with pediatric cerebral palsy.

Background: Numerous anecdotal reports attest to the amelioration of neurologic deficits in a variety of chronic cerebral insults including cerebral palsy. Improvement is attributed to the metabolic upregulation through improved local cerebral blood flow in a residual chronic ischemic penumbra.

Methods: Five children, average age 41.8 months, were treated with 1.5 ATA hyperbaric oxygen therapy (HBOT) for a total of sixty treatments administered for one hour daily, five days per week. A modified test of gross motor and fine motor function (GMFM-m) and a modified Ashworth Spasticity Scale were employed before and after hyperbaric therapy.

One patient with cortical blindness was assessed with visual evoked potentials before and after HBOT. One patient dropped out of the study before completion. Information was obtained on only four patients

Results: Modest decreases in spasticity and improvements in the modified GMFM scores for all patients completing the study. Cortical visual evoked potentials, which were absent before therapy in one patient were measurable after HBOT.

Conclusion: Hyperbaric oxygen therapy effected improvements in tests of gross motor and fine motor function and decreased spasticity as measured by the modified Ashworth spasticity score in patients with chronic cerebral palsy. Functional reorganization in the visual cortex is suggested by the reappearance of visual evoked potentials.