Hyperbaric oxygen therapy: dramatic result reported in treating ‘untreatable’ long-term neurological damage

Two recent studies offer support for the use of hyperbaric oxygen therapy (HBOT) as a treatment for neurological disorders. The first, by Kenneth Stoller and colleagues, indicates that HBOT—an intervention being used increasingly for autistic children—can cause improvement even in children with long-standing structural brain damage. The second, by Stephen Thom and colleagues, indicates that HBOT mobilizes stem cells which can repair damage to the brain.

Stoller et al.: HBOT reverses some FAS symptoms

Kenneth Stoller used low-pressure HBOT to treat a 15-year-old boy with Fetal Alcohol Syndrome, a condition causing brain abnormalities leading to mental impairment and learning and behavioral problems. The boy underwent 40 HBOT sessions, followed seven months later by an additional 33 sessions, each lasting 60 minutes. Stoller reports that following the first round of treatments, the boy showed improvement in all six categories on a neuropsychological test battery. He maintained his gains in verbal memory, and continued to exhibit lower levels of impulsive behavior, at a six-month follow-up after treatment. After 33 additional treatments, Stoller says, “[the subject’s] verbal memory was 95 percent (pretreatment 55 percent), visual memory was 57 percent (pretreatment 38 percent), reaction time was 0.64 second (pretreatment 1.03 second), visual motor speed score was 20.1 (pretreatment 18.6 [higher score is better]) and all previously reported symptoms resolved.”

Stoller says that his findings indicate that “it is time to revise the old concept that brain injury is a condition for which there is no treatment other than supportive measures.” He cites research showing that stem cells in the adult brain can cause neural regeneration, a process that is oxygen-dependent. Stoller also says that the retinal damage that sometimes results from hyperbaric oxygen therapy should not be an issue in treating neurological disorders that do not stem directly from hypoxia, as it appears to be the hypoxia—rather than the HBOT itself—that sets the stage for this complication. He concludes, “Low-pressure hyperbaric oxygen therapy is a therapy with an extremely low risk profile and relatively low cost, with potential benefits that seem to be significant and measurable for a condition considered incurable.”

Stoller’s findings are consistent with the anecdotal reports of a number of physicians using HBOT, sometimes in conjunction with chelation, to treat autistic children. One of these physicians, Paul Harch, testified before the U.S. House of Representatives in 2004 that HBOT causes marked improvement in brain blood flow pattern, often leading to significant improvement. For instance, Harch testified, one child he treated with HBOT “was able to wean from the powerful psychoactive drugs Ritalin and Prozac, and improve his emotional outbursts, autistic behavior, ability to play sports and attend school.” Harch testified that the combination of HBOT and chelation appears to be more successful than the use of either therapy alone.

Thom et al.: HBOT mobilizes stem cells

In a study to be published in April, Stephen Thom et al. report that positive effects of HBOT may arise from its ability to mobilize stem cells. When mobilized, stem cells can move from the marrow and differentiate into different types of cells that can aid in reparing damage to the brain or other organs.

Thom et al. studied 26 patients undergoing HBOT, and found that a standard course of HBOT therapy increased by eight-fold the number of stem cells circulating in the human body. An analysis of mice exposed to HBOT revealed that the treatment increases synthesis of nitric oxide, which in turn triggers enzymes that mediate stem cell release.

“This is the safest way clinically to increase stem cell circulation,” Thom says, “far safer than any of the pharmaceutical options.”

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