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Letter to the Editor

Re: Wolf G, Cifu D, et al "The Effect of Hyperbaric Oxygen on Symptoms after Mild Traumatic Brain Injury." J Neurotrauma. 2012 Nov 9

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A cursory review of the literature reveals a similar study of the effectiveness of Hyperbaric treatment in Chronic Brain Injury, Jean-Paul Collet, et al “Hyperbaric oxygen for children with cerebral palsy: a randomized multicentre trial” *Lancet*, Vol 357 February 24, 2001 (1)

Similarly, the USAF study authored by Wolf and Cifu, provides documentation of the benefits of hyperbaric treatment of patients with mild traumatic brain injury. Philip James, MD states: “here, using a similar study design, the investigators have misidentified a sham controlled group and discount benefits they may have experienced from “a minimal dose of oxygen and nitrogen” assuming it could have no possible influence on brain function favorably. An abrupt increase in ambient pressure induces a net transfer of water from tissues to blood due to gas-induced osmosis and the plasma oxygen tension increases at 1.3 ATA, not by 27%, as claimed, but by 40%. This is because the contribution of the partial pressures of carbon dioxide and water remain constant.”(3) Pressurizing 21% oxygen at 1.3 ATA increases oxygen tension from 159.6 mmHg to 207.5 mmHg in the tissue and therefore ablates the so-called sham. This study does demonstrate “surprising cognitive improvements” in both groups as expected since both groups received pressurized oxygen. The obviously overlooked sham group were both groups of subjects who had been breathing room air for undetermined periods of time since being injured, presumably by blast exposure, that qualified them for the study. It is, nevertheless, important to restate the positive findings of this study – hyperbaric treatment can produce significant improvement in patients with mTBI and begs the question: what is the ideal time, oxygen concentration, and pressure to maximize the “surprising improvements” noted by the investigators.

Raymond H. Cralle, RPT
Oxygen Rescue Care Centers of America

References:

- (1) Jean-Paul Collet, et al “Hyperbaric oxygen for children with cerebral palsy: a randomized multicentre trial.” *Lancet*, February 24, 2001 Vol. 357
- (2) Wolf G, et al “The Effect of Hyperbaric Oxygen on Symptoms after Mild Traumatic Brain Injury.” *Journal of Neurotrauma* 2012 Nov 9; doi: 10.1089/neu2012.2549
- (3) James, Philip MD, ChB, PhD, DIH, FFOM Emeritus Professor of Medicine University of Dundee, Scotland

From: j.neurotrauma <j.neurotrauma@verizon.net>

To: cralle98 <cralle98@aol.com>

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Dear Mr. Cralle:

Your manuscript entitled "Letter to the Editor
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