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HBOT & TBI Research

Tweet: **Veterans Study Reports Reduction in Suicide Ideation after HBOT**
Original source: LSU Health Sciences Center New Orleans
Leslie Capo Icapo@Isuhsc.edu October 19, 2017

A pilot case control study of veterans of the US armed forces with mild traumatic brain injury (TBI) or persistent post-concussion syndrome (PPCS), with or without PTSD, has found significant improvements in persistent post-concussion syndrome and PTSD symptoms, neurological exam, memory, intelligence quotient, attention, cognition, depression, anxiety, quality of life, and brain blood flow following hyperbaric oxygent therapy (HBOT). Compared to controls, the patients' brain scans were significantly abnormal before treatment and became statistically indistinguishable from controls in 75% of abnormal areas after treatment.

"Simultaneously and most importantly, subjects experienced a significant reduction in suicidal ideation and anxiety, possibly the most significant finding in the study given the current veteran suicide epidemic," notes Dr. Paul Harch, Clinical Professor and Director of Hyperbaric Medicine at LSU Health New Orleans School of Medicine. **"The PTSD symptom reduction is one of the greatest reductions in PTSD symptoms in a four-week period with any reported treatment, and combined with the effect on PPCS outcomes, HBOT represents the only reported effective treatment for the combined diagnoses of blast-induced PPCS and PTSD."**

The improvements, including a discontinuation or decreased dosage of psychoactive medications, continued to increase over the six-month post-treatment period. Dr. Harch and Dr. Edward Fogarty, Chair of Radiology at the University of North Dakota School of Medicine, led the research The study is published in the current issue of the journal Medical Gas Research, available here.

Thirty active-duty or retired military service men and women aged 18 to 65 years of age with one or more mild-to-moderate blast TBIs characterized by loss of consciousness that were a minimum of one year old and occurred after 9/11 participated in the study. They were matched to a control group. HBOT was performed in monoplace hyperbaric chambers on a protocol the investigators developed in 1989. Patients were compressed and decompressed at 1-2 pounds per square inch per minute on 100% oxygen for 60 minutes total dive time, twice a day with a 3-4 hour surface interval five days a week for 40 HBOTs. After HBOT, 52% of patients no longer met the threshold criteria for the diagnosis of PTSD. **Ten of the 12 patients who expressed suicidal ideation prior to the HBOT did not express suicidal thoughts after treatment.** One patient with anxiety who required an emergency department visit for increased anxiety had increased suicidal ideation after treatment. Of the patients who indicated significant anxiety before treatment, 75% were no longer anxious after treatment. The patients' abnormal brain blood flow pattern became nearly indistinguishable from the controls after HBOT treatment.

Symptoms of mild TBI persistent post-concussion syndrome with or without PTSD, before, immediately upon completion of HBOT, and 6 months after treatment ended

Ranking of patients' symptoms	Before HBOT (% of patients reporting)	After HBOT (% of patients improved)	6 months later (% of patients improved)
Thinking/cognition	100	90	96
Low energy	100	86	93
Headache	97	93	86
Depression	90	92	87
Mood swings	86	84	96
Short term memory loss	83	83	91
Sleep disruption	76	73	80
Short temper	72	90	95
Imbalance	69	65	88
Decreased hearing	69	10	22
Speech problems	62	78	87
Tinnitus	58	47	56
Photophobia	55	50	64
Paresthesias	48	57	60
Decreased vision	48	64	71
Arthralgias	45	54	22
PTSD symptoms	34	60	75
Dizziness	34	100	100

Another study was done by Harch in 2013 on sixteen military personnel with chronic blast-induced mild-to-moderate TBI/post-concussion syndrome. Forty HBOT treatments were completed in thirty days. Results were similar to the table shown above. This study included 'perceived quality of life" as to how they felt themselves to be before and after HBOT treatment. There was a major change for the better in cognitive, physical and emotional measures of quality of life between the pre- and post-HBOT assessments.

"New Study Reaffirms: hyperbaric oxygen therapy should be standard treatment for veterans" ANH-USA, 12/6/2011 (ANH=Alliance for Natural Health)

According to Dr. Harch's new study, even three years after the vets sustained brain injury, one month of HBOT was able to induce improvements in brain blood flow, cognition, symptoms, and quality of life, while the veterans experienced fewer suicidal thoughts.

Specifically, improvements were seen in 92% of vets experiencing short term memory problems, 87% of those complaining of headaches, 93% of those with cognitive deficits, 75% with sleep disruption, and 93% with depression. There were also improvements in irritability, mood swings, impulsivity, balance, motor function, IQ and blood flow in the brain, as well as the reduction in PTSD symptoms and suicidal thoughts. And there was a reduction in – or complete elimination of – psychoactive and narcotic prescription medication usage in 64% of those previously prescribed the medication.