

Hyperbaric Oxygen Improves Cognitive Abilities After Brain Injury

Texas researchers have found that patients with long-standing but stable traumatic brain injury (TBI) show a general improvement in **speech, memory and attention after undergoing a series of hyperbaric oxygen therapy treatments**. Dr. Paul Harch and colleagues presented their findings in Seattle at the Undersea and Hyperbaric Medical Society Annual Scientific Meeting.

The researchers enrolled 11 patients from The Transitional Learning Community in Galveston, Texas, who had chronic stable TBI for at least 3 years. Five of the patients initially had **80 sessions** in a multichamber hyperbaric oxygen unit.

Each 60-minute session consisted of raising the atmospheric pressure to 1.5 ATA (atmospheres absolute) and administering 100% oxygen through a mask. After a 5-month rest period, the five patients had another 40 hyperbaric sessions. The remaining six patients, serving as controls, did not undergo hyperbaric oxygen therapy.

SPECT imaging showed that no change occurred in the cerebral blood flow of the six control patients during the study period. However, patients who did receive the hyperbaric oxygen therapy showed an increase in penumbral area cerebral blood flow as well as improvements to their speech and memory functions, Dr. Harch said.

The improvements in these patients peaked at 80 hyperbaric oxygen sessions. "Individualized [hyperbaric oxygen therapy] repeats every 1 to 2 weeks appears to maintain improvement," Dr. Harch said.

Dr. Harch told Reuters Health that he has used hyperbaric oxygen therapy sessions to treat individual cases of stroke, cerebral palsy and multi-infarct dementia as well as near-drowning and chronic carbon monoxide poisoning patients. "All these are patients with no other treatment options..." who were treated 1 year after their injuries, Dr. Harch said.

Dr. Harch noted that patients with the least loss of function following injury show the greatest improvement with hyperbaric oxygen therapy. "Hyperbaric oxygen therapy is a nonspecific treatment that seems to be appropriate in many different forms of brain injury," he said.