Hyperbaric chamber to study traumatic-brain-injury treatment

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59th Medical Wing Public Affairs

11/7/2008 - SAN ANTONIO (AFNS) -- The San Antonio Military Medical Center Hyperbaric Center and the Air Force School of Aerospace Medicine received funding to study the effects of hyperbaric oxygen therapy on mild to moderate traumatic brain injuries.

The study hopes to find additional ways to treat wounded warriors with traumatic brain injuries using the hyperbaric center, located at Wilford Hall Medical Center, or SAMMC-South, at Lackland Air Force Base, Texas.

Traumatic brain injury is common with head injuries caused by blows to the head, nearby explosions, concussion or penetrating wounds. These types of injuries have become relatively common in U.S. military forces who have served in Iraq and Afghanistan. Treatment of traumatic brain injury normally relies on traditional rehabilitative and retraining strategies or on the use of drugs to reduce symptoms, such as depression and anxiety.

The Air Force study will try to determine if hyperbaric oxygen therapy improves the cognitive function of individuals who have had traumatic brain injury. Cognitive function includes such things as thinking, remembering, recognition, concentration ability and perception.

Oxygen is a vital component in the body's healing process. Hyperbaric oxygen therapy uses a combination of increasing the atmospheric pressure and 100 percent oxygen to dissolve oxygen into the blood plasma and deliver it to body cells, tissues and fluids up to ten times the normal concentration. This reestablishes oxygen to body tissues that are compromised or have been receiving less than normal amounts of blood flow and promotes healing.

"We hope that hyperbaric oxygen therapy will stimulate the area around injured brain tissue to improve the patients' cognitive functions," said Dr. E. George Wolf, a staff physician in the SAMMC Hyperbaric Center. "We will also monitor symptoms of post traumatic stress disorder to see if there are any changes during the HBO study."

Many patients are suffering from post traumatic stress disorder and traumatic brain injury and have symptoms of both, Dr. Wolf said.

The study will be conducted using 50 subjects who have been identified by their neurologists as having cognitive function problems and is scheduled to start in November. Potential subjects may be identified through neurologists at the Audie Murphy Veterans Hospital in San Antonio and SAMMC-North, or Brooke Army Medical Center at Fort Sam Houston, Texas.

According to a report prepared for Congress, more than 8,000 American military members currently suffer from some sort of brain injury as a result of the war on terrorism.

"It would be a great accomplishment if our study provides evidence that hyperbaric therapy can help these warfighters so they can be offered another opportunity to recover from their injuries," Dr. Wolf said.
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