

# Neuroprotective agent does not benefit patients with traumatic brain injury, study finds

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(Medical Xpress)—A supplement used worldwide as a memory enhancer and to help in recovery from stroke and head trauma provided no benefit in enhancing the recovery of adults who had suffered a traumatic brain injury, according to findings of a national multisite clinical trial published last month in *The Journal of the American Medical Association*.

Citicholine is a chemical found in the nervous system that is needed for the production of neurotransmitters, which are chemicals needed for cells of the brain and spinal cord to communicate with each other. Citicholine also is used to make proteins unique to the membranes of nerves cells and their coverings.

The Citicholine [Brain Injury](#) Treatment, COBRIT, trial brought researchers from across the United States together to determine if dietary consumption of Citicholine by patients who suffered an acute traumatic brain injury would lessen the degree of [nerve damage](#) and speed recovery and improve the outcomes for people with this injury.

The COBRIT trial team included researchers from the Virginia Commonwealth University Health System, the National Institutes of Health, the University of Alabama at Birmingham, Columbia University, the University of Maryland, the University of Pittsburgh, Temple University, the University of Texas Southwestern, the University of

Tennessee and the University of Washington.

Between 2007 and 2011, the team examined the effectiveness of Citicholine, believed to have neuroprotective properties, versus a placebo in 1,213 patients who had an acute [traumatic brain injury](#). In this study "recovery" was measured by neuropsychological testing at 30, 90 and 180 days after injury with a particular emphasis on how closely the patients could return doing their daily activities.

They found that the use of Citicholine compared with the placebo did not result in improvement of functional and [cognitive status](#) in this patient population.

"This work showed that taking Citicholine alone after a TBI is not helpful and that because TBI is a complicated injury with many different mechanisms accounting for the injury to brain cells that we should test and look to drugs or hormones which have multiple effects on brain cells and chemical reactions in the brain," said Randall E. Merchant, Ph.D., professor of anatomy and neurobiology, and neurosurgery, in the VCU School of Medicine, who was involved with the study. Merchant is both nationally and internationally known for his laboratory and clinical expertise in neurotrauma, neuro-oncology and neuroimmunology.

"The reasons why the study failed to show any benefit is most likely due to the fact that many different chemical events happen simultaneously in TBI and it's likely that no one, single agent can address all these changes," he said.

Next, the team will be testing other treatments that will hopefully improve recovery from TBI. VCU is one of approximately 30 hospitals in the United States testing progesterone, which is a hormone, in patients who have suffered an acute TBI.

Provided by Virginia Commonwealth University

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