Research explores link between traumatic brain injury and sleep

January 27 2014

(Medical Xpress)—It has long been believed that a person with a concussion should stay awake or not sleep for more than a few hours at a time.

But there appears to be no medical evidence to support that idea, according to a study regarding the relationship between traumatic brain injury, also known as TBI, and sleepiness conducted by scientists at Barrow Neurological Institute at Phoenix Children's Hospital and the University of Arizona College of Medicine – Phoenix.

"This translational research study lays the foundation for understanding the immediate impact of brain injury on a person's physiology. In this case, substantial post-traumatic sleep occurred regardless of injury timing or severity," said Jonathan Lifshitz, director of the Translational Neurotrauma Program at Barrow Neurological Institute at Phoenix Children's Hospital and an associate professor at the UA College of Medicine – Phoenix. "These studies explore sleep as an immediate response to TBI."

Traumatic brain injury is a major cause of death and disability throughout the world with little pharmacological treatment for the individuals who suffer from lifelong problems associated with TBI. Clinical studies have provided evidence to support the claim that brain injury contributes to chronic sleep disturbances as well as excessive daytime sleepiness. Clinical observations have reported excessive sleepiness immediately following traumatic brain injury. However; there

is a lack of experimental evidence to support or refute the benefit of sleep following a brain injury.

"We know that some individuals after a traumatic brain injury become excessively sleepy and some cannot sleep at all. It is not well understood why this occurs as mechanisms of injury, and locations of injury are not always consistent between clinical phenotypes of normal sleep, hypersomnia and insomnia," said Matthew Troester, a neurologist and sleep specialist at Phoenix Children's Hospital and a clinical assistant professor at the UA College of Medicine – Phoenix.

Lifshiz and his associates are breaking new ground with descriptions of sleep in the acute – or immediately after injury – state, where little is known clinically, Troester added.

"They demonstrate that the subjects slept immediately and similarly post-injury no matter the severity of the injury or time of day the injury occurred. This tells us that the brain is reacting to the injury in a very specific manner – not something we always see clinically – and, ultimately, this may help us better understand what the role of sleep is in brain injury" such as being restorative, protective or merely a consequence of the injury, he said. "It is an exciting beginning."

Provided by University of Arizona

Citation: Research explores link between traumatic brain injury and sleep (2014, January 27) retrieved 7 May 2024 from https://medicalxpress.com/news/2014-01-explores-link-traumatic-brain-injury.html