

Abstract

Surg Neurol Int. 2011;2:146.

Stuck at the bench: Potential natural neuroprotective compounds for concussion.

Petraglia AL, Winkler EA, Bailes JE.

Department of Neurosurgery, University of Rochester Medical Center, Rochester, NY, USA.

BACKGROUND: While numerous laboratory studies have searched for neuroprotective treatment approaches to traumatic brain injury, no therapies have successfully translated from the bench to the bedside. Concussion is a unique form of brain injury, in that the current mainstay of treatment focuses on both physical and cognitive rest. Treatments for concussion are lacking. The concept of neuro-prophylactic compounds or supplements is also an intriguing one, especially as we are learning more about the relationship of numerous sub-concussive blows and/or repetitive concussive impacts and the development of chronic neurodegenerative disease. The use of dietary supplements and herbal remedies has become more common place.

METHODS: A literature search was conducted with the objective of identifying and reviewing the pre-clinical and clinical studies investigating the neuroprotective properties of a few of the more widely known compounds and supplements.

RESULTS: There are an abundance of pre-clinical studies demonstrating the neuroprotective properties of a variety of these compounds and we review some of those here. While there are an increasing number of well-designed studies investigating the therapeutic potential of these nutraceutical preparations, the clinical evidence is still fairly thin.

CONCLUSION: There are encouraging results from laboratory studies demonstrating the multi-mechanistic neuroprotective properties of many naturally occurring compounds. Similarly, there are some intriguing clinical observational studies that potentially suggest both acute and chronic neuroprotective effects. Thus, there is a need for future trials exploring the potential therapeutic benefits of these compounds in the treatment of traumatic brain injury, particularly concussion.

PMID: 22059141

FREE FULL TEXT

