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Oral Presentation

Evaluating the Impact of Lactobacillus Acidophilus Probiotic Supplement on Sensory-Motor Recovery in a Model of Traumatic Brain Injury

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Abstract

Traumatic brain injury (TBI) is a leading cause of death and disability worldwide and many survivors experience a wide range of neurological impairments after TBI. Following the initial mechanical injury at the moment of a TBI event, various cellular and molecular processes are activated as the secondary injury. Neuroinflammation is an important mechanism involved in the secondary injury of TBI. Therefore, Neuroinflammation offers a promising opportunity for therapeutic intervention in order to prevent progressive tissue damage and improve the neurological recovery after TBI. The use of probiotics as a novel therapeutic option for modulating inflammatory response has received great attention, but there are still insufficient data on whether probiotics have the ability to regulate neuroinflammation, and further research needs to be done to elucidate the impact of probiotics on neuroinflammation and neurological recovery. If proven effective, probiotics can be used as a cheap, non-invasive, easy-to-use and safe treatment for modulating post-TBI neuroinflammation. Several studies have reported that probiotic compounds reduce serum inflammatory cytokines and increase the levels of anti-inflammatory cytokines. Hence, we hypothesize that using probiotics after TBI might have the potential to regulate neuroinflammatory response and thus, improve the neurological recovery.

Keywords: Neuroinflammation, Probiotics, Traumatic Brain Injury, TBI, Sensory-Motor Recovery

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