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Poster Presentation

Evaluating the Effect of Lactobacillus Acidophilus Probiotic Supplementation on Sensory-Motor Recovery After a Traumatic Brain Injury

Ali Mehri[1,2], Amirhossein Heidari[1,2], Mohammad Moein Vakilzadeh[1,2], Sara Pasban Bovanlo[2], Ali Gorji[3,4] Sajad Sahab Negah[2,3*]

[1]Student Research Committee, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

[2]Neuroscience Department, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

[3]Shefa Neuroscience Research Center, Khatam Alanbia Hospital, Tehran, Iran

[4]Department of Neurosurgery, Westfälische Wilhelms-Universität Münster, Münster, Germany

[5]Epilepsy Research Center, Westfälische Wilhelms-Universität Münster, Robert-Koch-Straße 45, 48149 Münster, Germany

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Abstract

Traumatic brain injury (TBI) is a common cause of death which affects millions of people around the world. TBI is also associated with various neurological impairments. After the primary mechanical injury at the moment of a TBI event, several cellular and molecular processes are activated within the brain tissue as the secondary injury. An important mechanism involved in the secondary injury of TBI is Neuroinflammation. Therefore, neuroinflammation offers a promising avenue for therapeutic intervention with the aim of preventing progressive neurodegeneration and improving the neurological recovery after TBI. A number of studies have shown the efficacy of probiotics in modulating inflammatory responses; however, it is still unclear if probiotics have the ability to regulate neuroinflammation, and more research is needed to determine the effect of probiotics on neuroinflammation and neurological recovery. If proven beneficial, probiotics offer a non-invasive, safe and cheap therapy for regulating post-TBI neuroinflammation. Multiple studies have demonstrated the ability of probiotics in decreasing inflammatory cytokines while also increasing the anti-inflammatory cytokines. Therefore, we hypothesize that using probiotics after TBI may have the capacity to modulate neuroinflammatory response and as a result, improve the neurological recovery.

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

Corresponding Author: Sajad Sahab Negah

E-mail: *sahabnegahs@mums.ac.ir*

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