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Oral Presentation

Immunomodulatory Effects of Neural Stem Cell on Multiple Sclerosis: A Systematic Review

Sanaz Sheykhian[1*], Sajad Sahab Negah[2]

[1]Islamic Azad University, Mashhad, Iran

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

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Abstract

Multiple sclerosis (MS) and its animal model, experimental autoimmune encephalomyelitis (EAE), are chronic inflammatory demyelinating disorders of central nervous system (CNS). While the cause is unclear, the fundamental mechanism is thought to be destruction of myelin sheaths of neurons through immune system. One of the approaches being proposed in EAE therapy is neural stem cells (NSCs) transplantation. Several studies have been conducted, investigating immunomodulatory effects of neural stem cells (NSCs) in order to assess their efficacy in the animal model of MS, but still controversies have remained. Our study aim was to systematically review the existing papers in the field of immunomodulatory Effects of Neural Stem Cell on Multiple Sclerosis. The systematic review was conducted according to the preferred reporting items for systematic reviews guidelines. We searched PubMed and Scopus databases based on the relevant medical subject headings (MeSH) of Immunomodulation, neural stem cell, and multiple sclerosis and all articles before January 2017 were included. The included studies had accurate data for immune mechanisms assessment and almost all reported neurologic clinical score assessment. Totally, 30 articles were eligible to be included in our systematic review out of 233 articles found at initial search. Studies showed exert immune modulation when neural stem cells (NSCs) are transplanted in the animal model of MS, experimental autoimmune encephalomyelitis (EAE). Regarding the potent immunomodulatory effects of neural stem cells (NSCs) and their beneficial effects in experimental autoimmune encephalomyelitis (EAE), including their capacity for neuroprotection and Immunomodulation it seems that NSCs may be a new therapeutic method in MS therapy.

Keywords: Immunomodulation, Neuroinflammation, Neural stem cell, Multiple sclerosis, Experimental

Corresponding Author: Sanaz Sheykhian

Email: *sanaz.shaykhian@gmail.com*

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