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Poster Presentation

The Relationship between Spinal Cord Injury and Neuroinflammation and Treatment Methods

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Abstract

Spinal cord injury (SCI) is usually caused by a physical factor, especially like burst fracture. Its primary phase involves displacement and physical accidents for the spinal cord, which have two factors of depth and speed of impact. In this phase, most damaged cells are oligodendrocytes in white matter. The secondary phase involves a cascade of cellular and molecular events that progresses rapidly and can cause neuroinflammation.in this phase, The leukocytes and microglians that are in injured region, accelerating the development of neuroinflammation by making unknown species of oxygen reactions. Our goal is to investigate the factors that reduce or improve neuroinflammation. Immunoglobulin G can decrease the activity of leukocytes and microglians and rate of neuroinflammation. Also, the use of useful antioxidants can be effective in reducing neuroinflammation. It seems that presence of immunoglobulin G with an antioxidant can reduce the amount of neuroinflammation caused by SCI seriously. For example, research has shown that combination of palmitoylethanolamid (an endogenouse lipid-neuroprotection) and luteolin (anti-oxidant) can reduce neuroinflammation.also,Ethanol is extracted from black chokeberry (Aronia melanocapa L.) has anti-inflammatory effects. Other studies have also shown that transplantation of bone marrow mesenchymal stem cells (BMCs) and cerebral dopamine neurotrophic factor can inhibiting the process of neuroinflammation and decearse production of proinflammation.in addition,it can be effective in regenerating and repairing damaged neurons in SCI. Perhaps a combination of stem cell transplantation and antioxidant effects can help to prevent the development of neuroinflammation and regeneration damaged neurons.

Keywords: Spinal Cord Injury, Neuroinflammation

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