The 1st International Neuroinflammation Congress
and 1st Student Festival of Neurosience
Shefa Neuroscience Research Center, Tehran, Iran, 11-13 April, 2017
The Neuroscience Journal of Shefaye Khatam
Volume 5, No. 2, Suppl 2

Poster Presentation

Combining Granulocyte-Colony Stimulating Factor (G-CSF) and Stem Cells in Treatment of Traumatic Brain Injury (TBI)

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***Published:* 11 April, 2017**

Abstract

Traumatic brain injury (TBI) is described as a situation in which the brain is damaged by an external force. It is considered to be a chief problem in health care. Pharmacotherapy and stem cell therapy are the main treatments used in TBI. The purpose of these procedures is to control the inflammation in injured regions of brain. Currently, there is no effective care for TBI that could regenerate neurons and rehabilitate the patients. According to recent studies, there are stem cells settled on different parts of CNS that can play an important role in treatment of TBI. In stem cell therapy, we use the capacity of undifferentiated cells for healing the injured tissues. G-CSF can broadly be defined as Granulocyte-colony stimulating factor or colony-stimulating factor 3. It is a cytokine with the potential to suppress encephalitis, and control glutamate levels. Studies that used stem cell therapy and G-CSF administration in combination with each other, reported a significant increase of neurogenesis and a considerable decrease in neuron apoptosis, compared with when each of these procedures were used separately. However, few researches has been done in the field of combined therapies for TBI so far. Hence, we believe further studies need to be performed to validate these results and evaluate the benefit of combined cytokine and stem cell therapies for TBI.

Keywords: Stem cells, Brain injuries, Traumatic, Granulocyte colony-stimulating factor

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