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Poster Presentation

Mesenchymal Stem Cells as Treatment in Neuroinflammatory Disease

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Abstract

Mesenchymal stem cells can be obtained from deferent tissues like adipose tissue, umbilical cord, placenta, skin, bone marrow, etc. These cells have regulatory effects on all types of immune cells such as dendritic cell, natural killers and lymphocytes. Mesenchymal stem cells induce inhibitory phenotypes of Antigen Presenting Cells (APCs) following their activity. They also change T cells phenotype from pre-inflammatory form to anti-inflammatory form by decreasing interferon gamma (INFY) production and increasing IL4 production. They increase T reg cells proliferation and decrease Natural Killer Cells proliferation and differentiation of alloantigen Induced Lymphocytes. MSC decrease destruction of axon and myelin and also improve regeneration of them. The role of mesenchymal stem cell in suppression of neuroinflammation is obvious. They have great immunomodulatory impact. Mesenchymal stem cells increase neurons survival by secreting neuroprotective factors and significantly decrease their apoptosis. These type of stem cell can play an important role in treatment of neuroinflamatory disease. Studies have shown that the use of mesenchymal cells are safe but more studies are needed to show they long term influences.

Keywords: Mesenchymal stem cell, Neuroinflammation, Antigen Presenting Cells, T cells

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